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THE NUCLEAR WASTE POLICY ACT OF 1999

HEARINGS

BEFORE THE

SUBCOMMITTEE ON ENERGY AND POWER

OF THE

COMMITTEE ON COMMERCE
HOUSE OF REPRESENTATIVES

ONE HUNDRED SIXTH CONGRESS

FIRST SESSION

ON

H.R. 45

FEBRUARY 10, and MARCH 12, 1999

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THE NUCLEAR WASTE POLICY ACT OF 1999

WEDNESDAY, FEBRUARY 10, 1999

HOUSE OF REPRESENTATIVES,
COMMITTEE ON COMMERCE,
SUBCOMMITTEE ON ENERGY AND POWER,
Washington, DC.

The subcommittee met, pursuant to notice, at 10:30 a.m., in room 2322, Rayburn House Office Building, Hon. Joe Barton (chairman) presiding.

Members present: Representatives Barton, Stearns, Largent, Norwood, Rogan, Shimkus, Wilson, Shadegg, Pickering, Ehrlich, Bliley (ex officio), Hall, McCarthy, Sawyer, Markey, Pallone, Gordon, Wynn, Strickland and Dingell (ex officio).

Also present: Representative Upton.

Staff present: Joe Kelliher, majority counsel; Kevin Cook, majority professional staff member; and Sue Sheridan, minority counsel.

Mr. BARTON. The Subcommittee on Energy and Power hearing on H.R. 45, the Nuclear Waste Policy Act 1999, will come to order. Let the record show there are two members present so that the hearing can begin.

Today the Subcommittee on Energy and Power will hear testimony on H.R. 45, the Nuclear Waste Policy Act of 1999. This is the third Congress in a row to consider nuclear waste legislation. The legislative goals remain the same. First, accelerate acceptance in recognition of Federal court decisions. They found the Department had an unconditional obligation to begin acceptance of commercial spent nuclear fuel more than a year ago. Second, strengthen the repository by assuring adequate funding for site characterization, construction, and operation. Third, protect the consumers by halting the diversion of consumer fees to fund other Federal programs. It is my earnest hope that this Congress will be able to enact legislation that achieves these three goals.

Three years ago Federal courts found that the Department has an unconditional obligation to begin acceptance of commercial spent nuclear fuel on January 31, 1998. That date has come and gone, and acceptance has not begun.

The Department has been slow to realize the significance of that court decision, a decision it accepted since it did not seek a rehearing or appeal the decision to the Supreme Court.

Normally when a Federal agency is found to violate Federal law, that agency acts to halt the violation. Unfortunately the Department of Energy has taken no action to accelerate acceptance and put itself into compliance with the Nuclear Waste Policy Act of 1992. That inaction displays indifference both to its legal obliga-

tions and to the cost of expanding onsite storage that result from its failure to act.

The administration has opposed the legislation considered by Congress largely on the grounds the bills made decisions on interim storage siting. The administration opposed legislation considered by the Senate in 1996 because, "making an interim storage siting decision before a repository viability assessment would jeopardize the long-term strategy for the ultimate disposal of high-level nuclear waste and undermine public confidence in the near-term transportation and storage activities".

Last December, the Department completed a viability assessment that concluded, "the Yucca Mountain remains a promising site for a geologic repository, and work should proceed to support a decision in 2001 on whether to the recommend the site to the President for development as a repository."

In the past the Department said interim storage siting should only take place after a viability assessment. Now that we have the benefit of the viability assessment, we need the Department's views on interim storage siting today.

One reason the administration opposed interim storage siting in the past because it believed doing so would undermine public confidence in the nuclear waste program. In my view and in the view of many others of this subcommittee, it undermines public confidence to see the Federal Government turn a blind eye to its legal obligations.

There is more at risk than public confidence in their government. A recent court decision raised the prospect of significant payments to utilities. There are important questions relating to the size of these payments, whether they will come from the nuclear waste fund and whether any payments will reduce the funding available for the nuclear waste program.

Another reason the administration is opposing an interim storage siting is the concern that accelerating acceptance at an interim storage facility would somehow undermine the repository. There is little disagreement on the need to maintain the commitment to a permanent repository, and that is one of our legislative goals. I agree with the Clinton administration on the importance of the repository and will oppose legislation that undermines the permanent repository.

We need to hear from the Clinton administration on whether it intends to offers proposals to accelerate acceptance or protect consumers. Over the past two Congresses the administration has put forward no proposal on how to achieve these two goals. If the administration does not believe the goals are important, we need to know. If the Clinton administration believes these goals are best achieved in a manner different from H.R. 45, we need to know that also.

I would urge Secretary Richardson of the Department of Energy to come to the table and work with the Congress on a bipartisan bill that accelerates acceptance, strengthens the permanent repository, and protects the consumers. I intend to hear from the views of Secretary Richardson on this subject directly in the near future. I would point out that he was asked to testify today and originally was not able to testify because he had travel plans out of the city.

Those plans have changed, but he has seen fit not to come forward today to testify before us.

I look forward to hearing the testimony of the witnesses that are here today, including the delegation of the great State of Nevada. In fact, I wonder who is running Nevada today. We have got the Governor, both Congressmen and several of their local elected officials. I look forward to today's testimony.

With that, I would recognize the distinguished ranking member, the Honorable Ralph Hall of Rockwall for an opening statement.

Mr. HALL. Thank you, Mr. Chairman. I am just trying to tear my speech open, hoping I can read it one time to myself before I read it to you. With your opening statement, and with the witnesses that we have, and with the importance of the witnesses—we have some members here—I will ask unanimous consent to put my statement in the record, and we will get along with the hearing.

Mr. BARTON. Without objection.

[The prepared statement of Hon. Ralph M. Hall follows:]

PREPARED STATEMENT OF HON. RALPH M. HALL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

I want to begin by saying Thank you, Mr. Chairman for demonstrating an early commitment this Congress to dealing with this pressing issue of public trust and safety. I am an original cosponsor of H.R. 45, the bill to amend the Nuclear Waste Policy Act of 1982. I was a cosponsor of H.R. 1270, the bill which the House passed in 1997, as well. Unfortunately, the President rejected H.R. 1270, as well as its Senate counterpart, based largely on the argument that we still lacked "objective, science based criteria" to support a decision to move forward. Today we have the results of a viability assessment done by the Department of Energy. In addition to this change in availability of important data, we are dealing with a new Secretary at the Department of Energy, a former member of this very Committee.

When the President asked that Secretary Richardson be confirmed, he sent a letter stating his full confidence in then Ambassador Richardson's command of this issue, and also indicated that once confirmed, the Secretary would have "full authority to carry out his mission in this area." Considering the fact that Secretary Richardson has been given this authority, along with the fact that he was not so long ago, one of our colleagues on this Committee, I urge that he will be called as a witness at a future hearing on this bill. We do want to pass H.R. 45, and as a matter of efficiency, we want to avoid an unnecessary veto, which might be provoked by the appearance that we have not taken the opportunity to hear from the Secretary, and to permit him to register any of the concerns of the Administration in a timely fashion.

I am pleased to see that the list of witnesses today seems to include most of the important players in resolving this issue, and I believe that this hearing will provide all of us on both sides of the aisle, an opportunity to update our information banks and to ask pressing questions which concern us, as we make one more attempt to get a bill signed into law. We owe it to all of our constituents to proceed expeditiously, and to avoid any more unnecessary delays in authorizing an interim storage facility, and we owe it to the taxpayers to avoid future litigation which results in substantial damage awards against the Department of Energy for its inability to receive spent fuel, in compliance with existing law.

Another issue of public trust looms over this process as well. We know that billions of dollars have been paid to the nuclear waste fund, only to have very little money actually going toward the program. By passing H.R. 45 we will prevent the future diversion of consumer fees to fund other programs. As a matter of good policy, I believe that the members of this Committee, on both sides of the aisle, know that passing H.R. 45 is the right thing to do. Let's just be certain that we take care to present this bill to the full House, and to the Senate, in such a way that not only guarantees passage, but which goes further than the predecessor bills from previous Congresses. It is time for a Nuclear Waste storage bill to finally become law.

We have a responsibility to act in the interest of sound monetary policy, and even more importantly, in the interests of public trust and safety. Nuclear power has always been a good source of the electricity supply, and we need to ensure this source by acting quickly and responsibly to dispose of the radioactive wastes it yields. I

urge my colleagues, especially those who are new to this subcommittee, to listen to the message of the importance of developing an integrated system to manage the nation's used nuclear fuel. We must seize this opportunity to bring a solution to this problem, sooner rather than later.

Thank you, Mr. Chairman, and I yield back the balance of my time.

Mr. BARTON. The gentleman from Illinois, Mr. Shimkus, is recognized for a brief opening statement.

Mr. SHIMKUS. Thank you, Mr. Chairman. I, too, would just ask permission to insert my opening statement so we can get along with this long day I think we have ahead of us.

[The prepared statement of Hon. John Shimkus follows:]

PREPARED STATEMENT OF HON. JOHN SHIMKUS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Good morning, Mr. Chairman and to all who have shown up this morning. You know, as I began looking over the materials for this hearing it seemed to me that I could just change the date on my opening statement from two years ago and read it again. I won't do that because the statement was really not that good. It certainly was no "Markey masterpiece" which so often graces this committee. There are, however, a couple of lines which I believe are important and still apply today. First, "the time for pointing fingers and playing politics is over." And second, "I believe the government is only as good as its word."

Well two years later the pointing continues and this government's word is worthless still. I guess I am not really surprised.

I supported HR 1270 last term and I am an original cosponsor of HR 45 this term because my home state generates about 40-45% of its power from nuclear reactors. We depend on nuclear power. I also happen to think that our nation should not rely only on just one energy source such as natural gas, coal or wind to generate power, but *all* of these sources. It is the smart thing to do over the long haul. Just like any good retirement portfolio, our energy industry should be diversified.

I mentioned earlier that I thought about just re-reading my statement from two years ago. I did not do that today because that would suggest that nothing has changed in this debate over the last two years. We all know that is false. Recently we have been graced with a new Secretary at the Department of Energy—one who the President promised would be able to negotiate with Congress on this issue if confirmed by the Senate. Unfortunately, Secretary Richardson can not testify today, but this subcommittee is ready and waiting for the Secretary to come forward to testify and seek a solution to this problem. I don't think that is asking too much. After all, we are only asking the Administration to keep their word and allow the Secretary to engage on this issue.

We have also seen the Department's own viability study released on December 18 of last year which continues to support the waste site at Yucca Mountain. The very study which the Administration claimed they were waiting for in order to make a decision on interim storage has finally appeared and guess what—it says that things at Yucca are going well. So why can't the administration support interim storage now? I am sure there will be reasons and I suspect a new hurdle may be erected today against HR 45. That would be disappointing. But deep down inside, Mr. Chairman, I think we all know that the Administration has moved the goalposts on this issue just one more time. I look forward to questioning the witnesses today. I yield back.

Mr. BARTON. The Chair would be happy to recognize the distinguished former chairman and the ranking member of the full committee, the Honorable Mr. Dingell of Michigan, for an opening statement.

Mr. DINGELL. Mr. Chairman, first of all, thank you for recognizing me. Second of all, thank you for having the hearing on a matter of high priority on the energy and power subcommittee's agenda for the new Congress. It has been 2 years since this committee addressed DOE's civilian nuclear waste program, and a number of events affecting Yucca Mountain project have taken place since then there.

On the positive side of the ledger, there have been substantial improvements of the Department's management of the repository program. This is particularly encouraging and particularly so in the DOE's recently released viability assessment found no disqualifying factors for the Yucca Mountain site. Perhaps after billions of dollars expended, we are looking at the possibility of a more speedy conclusion to this question and a resolution of the nuclear waste disposal problems.

However, the program faces significant difficulties still. Since the subcommittee's last hearing, the courts have ruled that DOE breached its duty to the nuclear utilities. This is a matter of considerable concern, I think, to us. Ratepayers have still not received anything tangible in return for their contributions to the nuclear waste fund. Congressional budget rules threaten to constrain program funding, and money from this fund has been dissipated in strange ways. With each passing year more utilities confront near-term problems in maintaining onsite storage capacity, and the possibility of this country using nuclear power technology for the generation of energy is being significantly impaired by the situation.

During the 104th and 105th Congresses, the Commerce Committee promptly reported legislation to address these problems. The legislation was founded on several simple principles. One, it is in the national interest of the United States to develop an interim storage facility so long as it can be funded adequately and so long as it does not undercut the permanent repository program. Parenthetically, I will observe that these are both matters of concern to us today.

The nuclear waste fund must be reformed; put an end to congressional pilfering of ratepayer contributions for wholly unrelated purposes, a matter that I mentioned earlier. It is desirable to streamline the program prudently and with regard to the integrity of the licensing process, and to minimize further delays in the repository program, and to see to it that taxpayer interests are fully protected and that the repository program must pay its own way.

These principles were embodied in legislation this subcommittee developed in the 104 and 105th Congresses. Those bills received broad bipartisan support and were reported with wide margins by both the full committee and the House. Most unfortunately, however, the legislation died both times in the Senate in the face of strong opposition from the Nevada congressional delegation and from the administration. Although both the House and the Senate reported legislation during the last Congress, the leadership on the Republican side failed to convene a conference to resolve differences in the bills. As a result, the legislation withered on the vine.

With the passage of time since our previous efforts, any legislative effort must be tailored to account for changed circumstances. We must carefully examine the adequacy of the funding of DOE's program, which will soon require steep increases as the project moves into the licensing and construction processes. We must also consider the impact of recent judicial decisions on this legislation and take care not to put the taxpayer at risk as cases already in the judicial pipeline move forward. New approaches may be needed to address the difficulties created by nuclear utilities facing near-

term storage problems. Above all, we must not inadvertently undermine the permanent repository without which there will be no real disposal solution for utility and defense waste temporarily stored in dozens of States.

In closing, Mr. Chairman, I commend you and I commend Chairman Bliley for your willingness to hold thorough hearings, including receiving the testimony of Secretary Richardson. The President has made clear that the Secretary has full authority to represent the administration on this issue. And DOE has an enormous interest in resolving the multiple lawsuits now pending against the Department.

In past years as a member of this committee, Mr. Richardson contributed significantly to the successful resolution of difficult nuclear waste issues, and it behooves us to hear from him again in his new role as we again consider nuclear waste legislation. I hope the administration will assist the committee in bringing fresh ideas to the table, identifying problems that exist, and enabling us to work together to resolve both the long-term and the short-term problems with regard to nuclear waste storage.

Thank you, Mr. Chairman.

Mr. BARTON. Thank you, Congressman Dingell.

The Chair would recognize the gentleman from Georgia, Mr. Norwood, for a brief opening statement.

Mr. NORWOOD. Thank you very much, Mr. Chairman. You seem to be very popular today. You have drawn quite a crowd.

Mr. BARTON. It is the Nevadans. We all bask in their reflected glory.

Mr. NORWOOD. I thank you very much for holding this hearing today on the nuclear waste problem that currently faces our country. You know, I am starting to feel a little bit like Bill Murray in Groundhog Day. Here we are at the beginning of a new Congress, and here we are having a hearing on Mr. Upton's legislation. Something tells me, though, Mr. Chairman, that we may be a little more successful this time around.

Having said this, I really only have one question today, and it will be directed to Mr. Barrett, the Department of Energy's witness.

Mr. Barrett, we have heard Secretary Richardson's recent encouraging comments regarding the viability assessment that has been conducted at Yucca Mountain over the past 15 years. Secretary Richardson notes that it, ''reveals no new show-stoppers'' and that, ''scientific and technical work should proceed.'' Now, knowing this, and knowing that so far this administration's only solution to honoring its commitment to new spent fuel from nuclear plants in 1998, that is last year for those of you who aren't good at math, is the threat of a Presidential veto, my question to you, Mr. Barrett, will be this: What is Secretary Richardson going to do to ensure that the President signs this bill into law this year?

We have haggled over and resolved the details of this legislation 4 years now. The only remaining question is whether or not the President will honor a Federal obligation to responsibly store this waste at one site instead of dozens.

Since passage of the Nuclear Waste Policy Act of 1982, ratepayers have paid $6.9 billion of which $503 million has come from

the Georgia ratepayers into this nuclear waste fund. The money is there. The wide-ranging support of Congress is evident, and a 15-year viability study confirms, as Secretary Richardson says, that there are no major problems with moving forward. For anyone who has ever visited the site and has known that nuclear testing has been going on there for decades, this really shouldn't come as any surprise.

Mr. Chairman, I really again thank you for one more time having a hearing on this very important subject, and I look forward to all of our panel members. Thank you.

Mr. BARTON. We thank you, Congressman.

The Chair would recognize the distinguished gentleman from Massachusetts Mr. Markey for a brief opening statement.

Mr. MARKEY. Thank you, Mr. Chairman, very much, and I want to thank you for holding this hearing on this third unsuccessful legislative effort to pass the nuclear waste legislation in the last 4 years.

Mr. BARTON. The fat lady hadn't sung yet.

Mr. MARKEY. I am struck once again by the keen insights into the nuclear waste issue from that unlikely quarter, George and Ira Gershwin, so let's begin by noting that we have once again a reprise of a radioactive Rhapsody in Blue. It is very clear plutonium is here to stay, not for a year, forever and a day. In time the Rockies may tumble, Nevada may crumble, they're only made of clay, but plutonium is here to stay.

And that, Mr. Chairman——

Mr. BARTON. You were actually better yesterday on the floor, Mr. Markey.

Mr. MARKEY. Well, you didn't interrupt me yesterday.

It is still our problem, so let's just consider how best to deal with this situation. First of all, when you hear from the nuclear utilities that Congress needs to pass legislation to build an above-ground interim storage facility and get the permanent waste repository program back on track, just remember It Ain't Necessarily So. In fact, current law already provides legal authority for the construction of such a facility, but it bars it from being located in Nevada and limits its size.

Now, this was done by this Congress in order to prevent any interim facility from becoming a de facto permanent storage facility. We want to bury it permanently and to protect the public integrity of the underground permanent repository program. Moreover, current law already provides a framework for studying whether Yucca Mountain is scientifically and technically suitable to serve as our Nation's permanent waste repository and for licensing such a facility For You, For Me, Forever More.

Second, your nuclear utilities may be whining to you that they've Got Plenty of Nothin' for all the fees that are paid into the nuclear waste fund. But don't forget, they have been arguing about the waste with DOE saying that since You Can't Take that Away from Me, you have breached our contract and owe us damages.

The courts have botched this dubious argument, and as a result, nuclear utility executives are telling each other, I am just Bidin' My Time, waiting to receive millions in monetary or other damages from the Federal Government. Why then should Congress wade

into the middle of this litigation for new legislation that is most likely to produce A Foggy Day of new breach of contract claims, new unrealistic deadlines, and vague new legal standards that will tie up an army of lawyers for years?

The argument that Congress needs to legislate because of the litigation may work for you, But Not for Me. And just remember, if this bill passes, we can no longer rely on having Someone to Watch over Me, over you, and over the rest of the public to assure that we are all protected from potentially lethal exposures to radiation. The EPA will actually be barred under this bill from issuing appropriate health-based regulation standards, and instead the NRC would be directed to issue weaker standards that won't fully protect the public. Meanwhile, your constituents will be up in arms Waiting for the Train and the trucks to come barreling through their neighborhoods carrying a mobile Chernobyl of radioactive waste. So don't be surprised if your constituents make a Funny Face at you for voting for this legislation.

It's wonderful, isn't it, how the nuclear utility lobbyists have milked this issue for billable hours over the last 4 years; new swimming pools and wings on their homes built all over greater Washington even though they know they don't have the votes in the Senate to override President Clinton's veto, which is inevitably going to come. This time they are trying to push this bill through before Summertime so they can claim, I Got Rhythm in the House, and you Senators should bring H.R. 45 to the floor as soon as possible.

So I hope that we can, Mr. Chairman, not spend an inordinate amount of time on this issue since the votes still are not in the Senate in order to override the veto, and I hope that the members of our committee will listen closely to the bipartisan testimony of the delegation from Nevada. I think they speak common sense in asking for real safeguards to be maintained on this kind of a project, and I at this point want to thank you for extending the extra time to me, and I yield back the balance.

[The prepared statement of Hon. Edward J. Markey follows:]

PREPARED STATEMENT OF HON. EDWARD J. MARKEY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MASSACHUSETTS

Thank you, Mr. Chairman.

As we turn, once more to take up what I predict ultimately will become the third unsuccessful legislative effort to pass nuclear waste legislation in the last four years, I am struck once again by the keen insights into the nuclear waste issue from that unlikely quarter, George and Ira Gershwin. Let's begin by noting that what we have here is a reprise of a radioactive *Rhapsody in Blue.*

It's very clear
Plutonium is here to stay
Not for a year
Forever and a Day.
In time the Rockies may tumble
Yucca may crumble
They're only made of clay
But Plutonium is here to stay.

And that Mr. Chairman, is still our problem. So, let's just consider how best to deal with this situation.

First of all, when you hear from the nuclear utilities that Congress needs to pass legislation to build an above-ground interim storage facility and get the permanent waste repository program back on track, just remember: *It Ain't Necessarily So.* In fact, current law already provides legal authority for the construction of such a facil-

ity, but it bars it from being located in Nevada and limits its size. This was done in order to prevent any interim facility from becoming de facto permanent storage, and to protect the public integrity of the underground permanent repository program. Moreover, current law already provides a framework for studying whether Yucca Mountain is scientifically and technically suitable to serve as our nation's permanent waste repository, and for licensing such a facility *For You, For Me, For Evermore.*

Second, your nuclear utilities may be whining to you that They've *Got Plenty of Nothin'* for all the fees they've paid into the nuclear waste fund. But don't forget, they've been arguing about the waste with DOE, saying that since *You Can't Take that Away from Me,* you've breached our contract and owe us damages. The courts have bought this dubious argument, and, as a result, nuclear utility executives are telling each other "I'm just *Bidin' My Time,*" waiting to receive millions in monetary or other damages from the federal government. Why then should Congress wade into the middle of this litigation with new legislation that is most likely to produce *A Foggy Day* of new breach-of-contract claims, new unrealistic deadlines, and vague new legal standards that will tie up an army of lawyers for years? The argument that Congress needs to legislate because of the litigation may work for you, *But Not for Me.*

And just remember if this bill passes, we can no longer rely on having *Someone to Watch Over Me,* over you, and over the rest of the public to assure that we are all protected from potentially lethal exposures to radiation. The EPA actually will be barred under this bill from issuing appropriate health-based radiation standards, and instead the NRC would be directed to issue weaker standards that won't fully protect the public. Meanwhile, your constituents will be up in arms, *Waiting for the Train* and the trucks to come barreling through their neighborhoods carrying a Mobile Chernobyl of radioactive waste. So, don't be surprised if they make a *Funny Face* at you for voting for this legislation.

'S Wonderful, isn't it, how the nuclear utilities lobbyists have milked this issue for billable hours over the last four years, even though they know they don't have the votes in the Senate to override President Clinton's inevitable veto. This time, the industry lobbyists are trying to push this bill through long before *Summertime,* so they can then claim, "*I Got Rhythm* in the House, and you Senators should bring H.R. 45 to the Floor as soon as possible if you wish to remain *The Man I Love.*"

Now, I suppose this is *Nice Work if You Can Get It,* but personally, I would suggest that we just tell the nuclear industry: *Let's Call the Whole Thing Off.*

Mr. BARTON. The Chair will accept the negative 5 minutes back. Congressman Hall and I have caucused and decided you need to keep your day job. Except in the lounges of Las Vegas, that club act—that dog don't hunt.

The Chair will recognize the distinguished gentleman from California Mr. Rogan for a brief opening statement.

Mr. ROGAN. First, Mr. Chairman, I should say I can name that gentleman's opening statement in four notes.

Mr. UPTON. Three.

Mr. BARTON. And these are supposed to be less than 3 minutes, according to the rules of the committee, the opening statements.

Mr. ROGAN. Mr. Chairman, the committee will be delighted to know that I have used up probably a lifetime of statements in Congress over the last 3 months. I will yield back the balance of my time.

Mr. BARTON. The Chair would then recognize the distinguished gentleman from Tennessee Mr. Bart Gordon for a brief opening statement.

Mr. GORDON. Thank you, Mr. Chairman.

Following the brevity that has been demonstrated here, let me just quickly say that I think this is an important issue. I think we do need to move forward. I am glad we are going to have input from our colleagues from Nevada. I can certainly understand their concerns, and we take that into consideration, try to be as sympathetic as we can to move forward with this bill, but it is something

that needs to be completed, and I am glad you are moving forward with it.

Mr. BARTON. I thank the gentleman for that statement.

The Chair would recognize the distinguished gentlelady from the great State of New Mexico Congresswoman Wilson for a brief opening statement.

Mrs. WILSON. Mr. Chairman, I also yield the balance of my time.

Mr. BARTON. The Chair would recognize the distinguished gentleman from the great State of Ohio Congressman Sawyer for a brief opening statement.

Mr. SAWYER. Thank you, Mr. Chairman.

I have a long opening statement, which I will share in writing. Let me just emphasize my gratitude during the last Congress for the attention that was paid to the question of route selection. If this is going to take place, then route selection becomes a critically important issue and sometimes may have to be done by standards that may not reflect the conventional wisdom but ought to reflect public safety. And with that I yield back the balance of my time.

Mr. BARTON. I thank the gentleman.

We would recognize one of our new subcommittee members, the distinguished Mr. Ehrlich from Maryland, for a brief opening statement.

Mr. EHRLICH. I yield back, Mr. Chairman.

Mr. BARTON. We then recognize the distinguished gentleman from Oklahoma Mr. Largent for a brief opening statement.

Mr. LARGENT. I don't have an opening statement.

Mr. BARTON. The Chair would then ask unanimous consent for a member of the full committee but not of the subcommittee, one of the coauthors of the legislation, Mr. Upton, if he would be allowed to give a brief opening statement. Is there objection?

Mr. UPTON. Brief.

Mr. BARTON. Brief.

The chair would recognize one of the coauthors of the bipartisan bill, the Upton-Towns bill, for a brief opening statement.

Mr. UPTON. Thank you, Mr. Chairman. I will submit my lengthy statement for the record. I would just like to say that I look forward to working with you and other members of this committee as well as Members of the full House and the Senate to moving forward a constructive bipartisan bill that will hopefully resolve this issue once and for all so we will not have to follow along with what Mr. Markey suggested in terms of another year or two with a variety of different folks looking for billable hours.

I would note that this is strongly bipartisan. Mr. Towns and I have worked hard to make it that way. And if you look at the past Congress that we accepted and worked hard to make sure that they stayed in, a number of constructive amendments from both sides of the aisle. I remember specifically an amendment offered by Karen Thurman with regard to local routes, local transportation routes, that local States or States and localities could have a greater say in terms of where the high-level nuclear waste would go.

I would also note that we have a good relationship with the new Secretary of Energy Mr. Richardson, who did not oppose this legislation as a member of the committee when he represented New Mexico. We have spent as taxpayers more than $10 billion, billion,

on this site. Many of our States have paid hundreds of millions of dollars into the fund, which has been recaptured to promote Yucca Mountain. And I guess at the end I would just like to say we are still willing to consider renaming Yucca Mountain Markey Mountain to make sure that——

Mr. BARTON. He probably doesn't want that on.

Mr. UPTON. It might help him out there.

But I yield back the balance of my time and urge swift consideration, and thank you again for letting me have this opportunity.

[The prepared statement of Hon. Fred Upton follows:]

PREPARED STATEMENT OF HON. FRED UPTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Mr. Chairman: Thank you for holding a hearing today on H.R. 45, legislation I introduced last month designed to address our national problem with high-level nuclear waste by providing workable solutions for managing spent nuclear fuel. I am looking forward to the testimony of the witnesses before us and I'm pleased that we have a strong Michigan presence on the panels. (Dave Joos from Consumers Energy and John Strand from the Michigan Public Service Commission).

Some of my colleagues here this morning may remember a similar debate on nuclear waste during the last Congress. To refresh everyone's minds, in 1997, our subcommittee and full Committee approved H.R. 1270, a bill similar to the one before us today. In fact, the vote in the full Committee was 42-3. The bill passed the House in October, 1997 by a vote of 307-120.

My interest in this issue stems from my experience in western Michigan. A few years ago, the Palisades nuclear power plant in my district ran out of storage space in its pools. Because there is nowhere to send the spent fuel rods, company officials have had to use so-called "dry cask" storage in 130-ton concrete and steel containers about 100 yards from Lake Michigan. The three other nuclear power plants in Michigan and more than 80 in other states may ultimately have to follow suit if the federal government doesn't live up to its responsibilities.

The bill I introduced simply states that as the Department of Energy works on the permanent site at Yucca Mountain in Nevada, which won't be completed until 2010, we should temporarily stack the waste outside what is expected to be the final resting place. Our government should pursue a policy that puts nuclear waste behind one fence, in one location, where we can concentrate all of our resources on making sure it is safe. In the meantime, we should also move the waste from environmentally sensitive areas like the Great Lakes, Chesapeke Bay and other places.

I am pleased that many members of this subcommittee have joined me as cosponsors including Congressmen Towns, Barton, Hall, Bilirakis, Burr, Rush, Stupak, Norwood, Shimkus, Gordon, Stearns and Gillmor. The total number of cosponsors has already reached 80. Key organizations like the National Association of Counties support the bill.

My legislation minimizes the threat of nuclear waste by placing it in a suitable location in the short-term. That threat can be greatly reduced still by putting in place a permanent facility which I fully support.

Both dry cask and pool storage are safe but there can be no question that centralized storage in one area is better than leaving wastes at numerous sites sprinkled across our nation at more than 80 sites.

I would urge the Department to work with us as this legislation moves through the congressional process, rather than throw up roadblocks. I look forward to hearing testimony today from Department officials and the Nuclear Regulatory Commission. I'm pleased that the Department's Viability Assessment released in December stated clearly that "scientific and technical work at Yucca Mountain should proceed." Secretary Richardson said that he was very impressed with the high quality of the science that went into the development of the assessment.

As I've said in the past, the government must live up to its promises and protect the environment by moving nuclear waste to a permanent and final resting place. My bill does just that. I hope we can consider this legislation in a timely fashion here in the Committee and move this needed legislation to the full House in the near future.

Thank you, Mr. Chairman.

Mr. BARTON. We thank you for your leadership. It is thankless, I know that, and you and Congressman Towns are to be commended.

The Chair would recognize Mr. Pallone for a brief opening statement if he so wishes.

Mr. PALLONE. Thank you, Mr. Chairman. I will try to shorten this.

Mr. BARTON. We are actually going to use the clock, so you have got 3 minutes and maybe a little longer if you are in good form.

Mr. PALLONE. Thank you, Mr. Chairman.

I have in the past voted for this bill in committee, but since we began this process 4 years ago, circumstances have changed. The legislation has failed to be enacted, as you know, in two previous Congresses, and litigation has produced decisions holding DOE liable for its failure to uphold its obligations under the act, and the legislation before us may affect the outcome of pending cases or create new causes of action.

I have always been concerned that funding and construction of interim storage facilities should not detract from funding and constructing a permanent storage facility. I no longer believe that the language in H.R. 45 can meet this test.

Mr. Chairman, I think we must address the nuclear waste and spent fuel storage and disposal problems this country faces, keeping in mind that the overriding goal of such legislation must be to ensure the safe, permanent disposal of spent nuclear fuel and high-level radioactive waste. But I am no longer convinced that the legislation before us provides the best means to help utilities, ratepayers and taxpayers without creating new problems.

About $15 billion has been paid by ratepayers into the nuclear waste fund of which only about $6 billion has been spent, with the rest having been used for Federal deficit reduction. Four years ago, when we drafted the language now in H.R. 45, we proposed a user fee to fund the nuclear waste program in order to prevent further diversion of payments to unrelated purposes and ensure that a permanent repository would actually be built. But as I said earlier, DOE has been shown to have breached its promise to begin accepting waste by January 1998 and is being sued because of its failure to meet this deadline.

Pending litigation means that the status of the existing fund and the proposed user fee mechanism are even more uncertain than ever, and Budget Committee pay-go rules have forced changes to the legislation that seem likely to expose DOE and taxpayers to new damage claims.

It is time we right the wrong that has been done to ratepayers. We must try to stop solving the Budget Committee's problem and trying to rectify ratepayers' problems without simultaneously creating additional problems for taxpayers.

The Budget Committee should solve its own problems and balance the budget without diverting funds in the name of borrowing from this and other trust funds. To address these issues we must sit down and work toward a truly viable solution to this very real problem, but this will only occur if we work together to craft new language on a broadly bipartisan basis.

I look forward to hearing from today's witnesses and reserve the balance of my time for questions that I would have after, Mr. Chairman. Thanks again for having the hearing.

Mr. BARTON. Thank you for that statement, and I would tell the gentleman from New Jersey that I agree with much of what you said. Thank you.

Mr. PALLONE. Thank you.

Mr. BARTON. I think that makes sense.

The distinguished gentleman from Arizona Mr. Shadegg, would he like to make a brief opening statement?

Mr. SHADEGG. I will waive any opening statement other than to say, Mr. Chairman, I have cosponsored this legislation in the past. I commend you for holding this hearing, and I intend to cosponsor this particular bill again this year.

Mr. BARTON. The Chair seeing no other members present on the subcommittee, we will give the requisite number of days for all members not present to put written statements into the record and those that have made statements the authority to revise and extend their remarks.

[Additional statements submitted for the record follow:]

PREPARED STATEMENT OF HON. TOM BLILEY, CHAIRMAN, COMMITTEE ON COMMERCE

Mr. Chairman, I commend you for moving forward aggressively on this issue early in our session. Finding a solution to the problem of high-level nuclear waste is one of the most important challenges facing this country, and therefore it is one of the most important priorities for our Committee.

For the past half a century, nuclear energy has played a major role in our lives, from ensuring our national security, to furthering the frontiers of science, to providing us with a reliable source of electrical power. Nationwide, nuclear energy is the source of approximately twenty percent of the electricity generated in this country. Some states rely on nuclear power even more—in my home state of Virginia, 43 percent of the electrical power generated comes from four nuclear units at the North Anna and Surry power stations. Without a central repository for the permanent disposal of the radioactive materials from these facilities, we are forced to provide temporary onsite storage for these materials.

The debate over nuclear waste is not just about what to do with the products of past activities and operations—it is very much a debate about our future as well. Any significant reduction of our current nuclear generating capacity, either due to an unwieldy licensing procedure at the front end of the process or a bottleneck over the disposal of spent fuel at the tail end of the process, will require us to replace that existing generating capacity with some other source of power. It would be difficult to replace the 20 percent of generating capacity that comes from nuclear power. If we have to replace this power with fossil fuel sources, the result will be added emissions. For both economic and environmental reasons, it is vital that we take steps to preserve our existing nuclear generating capacity.

Yet, despite the clear benefits we all enjoy from nuclear power, a permanent solution for the spent reactor fuel and other high-level waste from nuclear activities continues to evade our grasp. In the early 1980s, Congress and the President made a commitment to the American people that the federal government would construct a permanent underground repository for the disposal of spent fuel and other high-level radioactive waste. The Department of Energy was directed to begin acceptance of spent fuel at the end of January last year. As we all know, the Department was unable to meet that 1998 deadline. While the Department is making commendable technical progress on the Yucca Mountain site, the current schedule would not allow for acceptance of spent fuel until—at the earliest—the year 2010. That is over 12 years behind schedule. It is not surprising that a number of utilities have brought suit over this failure of the federal government to live up to its obligation.

And that is really why we are here today, Mr. Chairman. We are here to make sure the federal government keeps the promise it made to the American people back in 1982. We have to make sure that the utility ratepayers who have deposited billions into the Nuclear Waste Fund get what they paid for—timely acceptance and disposal of the spent reactor fuel.

We should do nothing that will slow down the Department's progress on the permanent repository at Yucca Mountain. But if the permanent repository cannot be ready until the year 2010, we urgently need to find an interim solution that will allow DOE to begin acceptance of spent fuel at an earlier date. I believe that H.R. 45 will meet that objective.

Mr. Chairman and members of this Committee, let us build on the progress we made during the 105th Congress. H.R. 1270, a bill very similar to the one you are considering today, was passed by an overwhelming bipartisan majority of the House, and the Senate did likewise with a similar bill. Now that the Department of Energy has completed a positive viability assessment, we have all the more reason to move forward with this legislation as soon as possible.

Mr. Chairman, I appreciate your holding this hearing today and look forward to the testimony of our witnesses.

Prepared Statement of Hon. Cliff Stearns, a Representative in Congress from the State of Florida

Thank you, Mr. Chairman, I am pleased that we are holding this hearing today to obtain feedback on the Nuclear Waste Policy Act, sponsored by Chairman Barton. I am a cosponsor of this important legislation.

In Florida, we have five nuclear units which provide about 19 percent of the state's electricity generation. The benefits of this fuel source are clear: the use of nuclear energy has reduced Florida's carbon dioxide emissions by 96.7 million metric tons since 1973.

However, these benefits have not come without a price. Since 1983, consumers of Florida's nuclear-generated electricity have contributed over $649 million to the federal Nuclear Waste Fund, This fund was to finance nuclear waste management beginning in January 1998. However, the Department of Energy's failure to meet the January 1998 deadline to begin storing used nuclear fuel clearly violates the federal agency's contract with electric utilities operating Florida's nuclear power plants.

I understand that DOE has stated that the agency will not accept used fuel without a disposal or storage facility. This act will allow DOE to begin accepting used fuel assemblies by 2002. Almost all of the Florida Representatives voted for the NWPA when it passed the House in October 1997, Florida Senators Mack and Graham voted for similar legislation in the Senate. I support this legislation and I look forward to hearing from our panelists.

Prepared Statement of Hon. Michael Bilirakis, a Representative in Congress from the State of Florida

Mr. Chairman, I want to commend you for scheduling today's hearing on H.R. 45, the Nuclear Waste Policy Act of 1999. Unfortunately, a scheduling conflict with the Health and Environment Subcommittee, which I chair, will prevent me from attending this hearing. However, as an original cosponsor of H.R. 45, I believe Congress must act expeditiously on this important issue.

H.R. 45 will give us a viable system for managing the nation's spent nuclear fuel from the time it leaves the power plant until it reaches the repository. It is regrettable that our country's program to manage nuclear waste has come to this point. Seventeen years ago, Congress established a nuclear waste policy based upon the scientific consensus that the best way to dispose of high-level radioactive waste is to bury it deep underground.

The Nuclear Waste Policy Act of 1982 gave the Department of Energy responsibility for finding a suitable location to build and operate—at that time a disposal facility. The opening date for that facility was to be 1998.

To fund the program, nuclear utility customers were asked to pay a surcharge on their electricity bills and the money was to be placed in a nuclear waste fund administered by the Congress. To date, more than $15 billion has been committed to this fund. The ratepayers are keeping their part of the bargain.

However, the Federal Government's spent fuel management program is in serious trouble. The opening date for the repository has slipped to at least 2010, more than a decade after the target date specified by the Nuclear Waste Policy Act of 1982.

The consequences of continued inaction is severe. The nation's nuclear power plants were not designed to be permanent disposal facilities, and many are running out of storage capacity for spent fuel. By 1999, 29 reactor sites will have exhausted existing storage capacity. By 2010—the earliest date a repository could be operating—80 plants will no longer have enough on-site capacity—three of them in my state of Florida.

As a result of the delays, utilities are being forced to plan additional storage at their nuclear power plants at a cost of tens of millions of dollars per site. Consumers may be forced to pay twice for the same service—once for the Federal Government's sluggish repository program and again for additional storage space. Moreover, there is no assurance that a power plant will not become a permanent home for spent fuel.

Even worse, some utilities may be forced to prematurely shut down nuclear plants because there is simply no additional space to store the spent fuel. The Nuclear Regulatory Commission does not permit nuclear plants to operate unless they have storage for all of the fuel in their reactors. The cost to consumers for replacing electricity produced at these plants will be enormous—and even that would not solve the problem of how to dispose of the spent fuel already being stored at the plants.

Our nation's 103 nuclear power plants produce about 20 percent of our electricity—and through the interconnection of power lines, nearly all Americans get some of their electricity from nuclear energy. In Florida, nineteen percent of our electricity comes from nuclear power. We simply cannot afford to let shortcomings in DOE's program threaten this important source of electricity.

Electricity customers in Florida and every other state that has nuclear power plants have already paid for nuclear waste disposal. In fact, Floridians have paid more than $649 million. This Congress must ensure that these customers get what they have paid for.

H.R. 45 directs the Energy Department to develop the missing piece of an integrated nuclear waste management system—a temporary facility at the permanent storage site until the permanent repository is ready. This temporary facility will ensure that the Federal Government meets its commitment to begin taking spent fuel from nuclear power plants.

The ratepayers have kept their part of the bargain. Now, it is time for the Federal Government to fulfill its responsibility as well. We must act on H.R. 45.

Mr. Chairman, I look forward to working with you and my colleagues on this important issue. Although, I cannot attend today's hearing, I will be reviewing the testimony of our witnesses.

Mr. BARTON. The Chair would now like to call forward our first distinguished panel headed by the distinguished Governor of the great State of Nevada, the Honorable Kenny Guinn. We also have the senior Member of the House delegation, the honorable James Gibbons; the junior Member of the House delegation the Honorable Shelley Berkley; the distinguished mayor of the city of Caliente, the Honorable Kevin Phillips. Our two Senators were scheduled to be here, the two Senators from Nevada, but they have pending business in the Senate, and we will put their statements into the record in their entirety, and it is my understanding that the Congresswoman Berkley is going to put in one of the Senators' statements into the record.

Mr. Gibbons, we are going to recognize you to introduce to our subcommittee your Governor, and at the conclusion of your introductory remarks, we will let the Governor speak, and then we will start with you, then Congresswoman Berkley and then Mayor Phillips.

Mr. GIBBONS. Mr. Chairman and members of the committee, thank you very much for allowing us and the delegation of Nevada to have an opportunity to be here today to testify as a bipartisan group effort against this measure. As you can tell, the two United States Senators from Nevada are unable to be here as they are now presently addressing a rather radioactive measure themselves that is over in the Senate. I would like to ask unanimous consent of the committee to introduce for the record the complete written statement of Senator Harry Reid.

Mr. BARTON. Without objection, so ordered.

[The Prepared statement of Hon. Harry Reid follows:]

PREPARED STATEMENT OF HON. HARRY REID, A U.S. SENATOR FROM THE STATE OF NEVADA

It gives me the greatest pleasure to welcome Nevada's newly elected Governor Kenny Guinn to the Capitol. He has stepped into this job at a time of continued heed for leadership in Nevada's Capitol, and I am wholly confident in his capacity to meet the challenge. His priorities, and Nevada's priorities could not be more clear. It says a lot that Governor Guinn would fly all night from his state duties at a time when the State Legislature is in session to be here today.

Many attempts have been made in recent years to find legislative remedies to the overwhelming technical challenges of managing spent nuclear fuel and other high level radioactive waste. Failure after failure of these legislative initiatives is simple affirmation that science is immune to legislative overrides.

Permanent disposition of untreated spent nuclear fuel requires effective environmental isolation of this waste material for a period that far exceeds recorded human history. Present policy calls for licensing a repository that would meet this isolation requirement for a period of ten thousand years. That period of isolation serves only to reduce the intensity of short half-life waste, but it is totally inadequate to reduce the activity of many isotopes with half-lives ranging from several times the licensing period to several hundred thousand years.

The ultimate failure of any isolation material or strategy guarantees that, sooner or later, the environment will become contaminated by radioactive waste that will escape the repository and migrate through the ground water. That fact is a certainty. What is uncertain is when containment failure will occur, and the amount and speed of migration of waste beyond the repository boundaries. Reducing that uncertainty to acceptable levels, and demonstrating to everyone's satisfaction that those levels of uncertainty are indeed acceptable are the primary objectives of the scientific characterization effort. It is difficult, it takes time, and it requires a minimum of distraction from the primary scientific effort.

Legislative initiatives to resolve this difficult problem have failed time and again. S. 1271 in 1995, S. 1936 in 1996, S. 104 in 1997, and H.R. 1270 in 1998 all failed to become law. These efforts failed because they were misguided bills crafted to meet the nuclear industry's demands. They were not focused on the needs of the development program that must provide a safe and secure storage facility to contain the waste with high confidence for as long as necessary to protect the environment.

Sadly, H.R. 45, the Nuclear Waste Policy of 1999, is no better than the earlier failures. In fact, H.R. 45 goes awry at the very beginning. The Section dealing with "Findings and Purposes" says it all. According to H.R. 45, "The Congress finds that while spent nuclear fuel can be safely stored at reactor sites, the expeditious movement to . . . a centralized Federal facility will enhance the Nation's environmental protection".

I am encouraged that H.R. 45 is at least half right. Indeed, spent nuclear fuel can be safely stored on reactor sites. I have been saying that for years, and so has the independent Congressionally authorized Nuclear Waste Technical Review Board. Interim storage at reactor sites is a safe, secure, and economical way to manage spent nuclear fuel for as long as it takes to find a more permanent management option. On-site storage in the present configuration is safe for at least a generation, and modest investments will prolong that option for at least one hundred years. There is no technical or fiscal reason to move the waste until a permanent repository is prepared.

However, contrary to H.R. 45, there is no enhancement of environmental protection from moving the waste from its present temporary storage to yet another temporary storage site. That assertion by H.R. 45 is just plain nonsense. Developing a so-called "centralized" temporary storage facility will not reduce the number of interim storage sites. It will increase the number of sites to be developed and maintained. None of the present temporary sites will be closed before the present characterization effort at Yucca Mountain is scheduled for completion.

Moreover, the proposed interim storage facility referred to in H.R. 45 is sited in an area in Nevada that is subject to the third highest frequency of earthquakes in the country. Just 2 weeks ago, the Nevada Test Site was shaken by a series of 4 earthquakes on 2 separate faults over a period of 3 days. These were not negligible events, toppling the contents of a number of structures on the Site. It is nonsense to assert enhanced environmental protection by moving this dangerous material from its present safe storage at reactor sites to a much less safe, earthquake-prone region. This move is a recipe for disaster.

Current law prohibits an interim storage site in a state with a site being evaluated for a permanent repository. That feature of the Nuclear Waste Policy Act was provided to guarantee the unpressured, independent scientific work that is abso-

lutely necessary for public health and safety, and for protection of the environment. It is this aspect of current policy that H.R. 45 is trying to overturn. The nuclear industry wants to preempt the scientific work because they know that once the waste is moved to Nevada, it will never leave, regardless of the risks to public health and the environment.

There can be no doubt about it. H.R. 45 is all about interim storage. It is all about preempting high quality technical characterization of the proposed permanent repository. It is all about the nuclear industry trying to unload its waste, generated at a profit, on the American taxpayer without regard for the risks to the public and the Nevada environment. H.R. 45 is all about interim storage in Nevada, but interim storage anywhere but on reactor sites is nonsense.

Mr. GIBBONS. I will take a minute to introduce both Shelley Berkley, the newest member of our delegation from District 1 in Nevada, upstanding member of the community in the State who is a hard worker in this battle as well; and our present Governor, Mr. Kenny Guinn, who was elected in November to replace the current Governor, the past Governor, Governor Miller.

Let me begin, Mr. Chairman, to remind this committee. This is an issue of safety, safety for all Americans.

Mr. BARTON. Are you going to give a statement now or do an introduction, because you will have a chance to give a complete statement on your own. My understanding was that you would introduce the Governor, and as the leader of the State, we will let him speak, and then we will start with you and let you speak. But if you want to speak first and it is okay with your Governor, it is okay with me.

Mr. GIBBONS. Let me tell you that it is an issue of safety whether I go first or he goes first. It depends on the political safety in our State.

I do know that our Governor does want to make a statement and would certainly like to introduce him at this time with the committee and the chairman's approval. Governor Guinn was sworn into office last month, in the month of January. He has quickly joined the battle on behalf of Nevada against this issue in an attempt to help not only educate America with you, the leaders of Congress here, as to the dangers of this subject not with regard to just Nevada, but with regard to all of America. He has shown great leadership on this issue. He will be holding the first ever nuclear waste summit in Nevada next week where we will invite officials to come in and talk to us about this issue in the State of Nevada.

By way of background, Governor Guinn is the former president of the University of Nevada Las Vegas. He was the chief executive officer of Nevada Power, served on the board, and has been the president of several banks. He was also the superintendent of Clark County Public School System, one of the largest school systems in the United States. He serves on a number of committees, a number of boards from various private sector organizations. He is a leader in the State. I think he is a leader in America, and I look forward, as this committee should, to receiving the testimony of Governor Kenny Guinn.

Mr. BARTON. Thank you.

Governor Guinn, we are delighted to have you before the subcommittee. I think I speak for members on both sides of the aisle that we respect your leadership not only in your State, but in the country, as one of the 50 State leaders. We are going to give the others 5 minutes to summarize, but especially since our two Sen-

ators that tend to be long-winded are not here, we are going to give you as much time as you may consume, asking you to join in the spirit of this subcommittee, which is normally very conservative, and don't abuse that privilege in terms of time.

But we now recognize you. Your complete statement is in the record in its entirety, and the committee would like to hear your views on this very important subject to your State and the Nation.

STATEMENT OF HON. KENNY C. GUINN, GOVERNOR, STATE OF NEVADA

Mr. GUINN. Thank you, Mr. Chairman and also members of the committee. My name is Kenny Guinn, and I am the Governor of the State of Nevada, as you have already heard, and I appreciate this opportunity to be before you today to address a matter that is of extreme importance not only to the people of Nevada, but also to citizens throughout this great country.

I am new to the Governorship in Nevada, having been elected in November, and I must say I am the first Republican to hold the office since 1982. I am not a career politician, and this is my first run for elected office, but I am not new certainly to public service, as you have just heard from Congressman Gibbons.

I have been a resident of southern Nevada for 35 years, where my wife and I have raised our two sons and are now enjoying our grandchildren. We watched the Las Vegas Valley grow from a small city of a hundred thousand or so to a major metropolitan area, an international tourism center with almost 1.5 million citizens, and growing almost at the rate of 6- to 7,000 people a month. And we also have 30 million visitors a year plus from all over the United States and the world. Consequently, I have more than a passing familiarity with the problems facing us right now in the State of Nevada.

I believe that H.R. 45 is wrong for our country for several important reasons. It is scientifically unsound. It creates health and safety risks not only for the people of Nevada, but also for all those whose homes and businesses are in the transportation quarters and paths of the deadliest substance known to mankind. And it violates the spirit of the 10th amendment to the United States Constitution by targeting Nevada on a purely political basis.

H.R. 45 is the latest in a string of failed bills designed to fashion a quick and expedient fix for the high-level radioactive waste program that has been bungled over the years by the Department of Energy, but like its predecessor, this bill will not fix anything. Rather H.R. 45 will exacerbate the problems facing nuclear utility companies in the Nation. It will, if enacted into law, create a huge unfunded liability for the American taxpayers, as we have heard already today from testimony, undermining environmental, health and safety laws and regulations, and put millions of citizens in hundreds of cities in 43 States at substantial risk from the transportation of spent nuclear fuel and high-level waste throughout their communities.

And that doesn't begin to take into account what the legislation will do to Nevada where it will continue to flaunt a potential disastrous Yucca Mountain repository project by eliminating existing standards for determining site suitability, reducing regulatory re-

quirements, governing regulation exposure to the public and exempting DOE from Federal, State, and local environmental laws and regulations which we all must abide by.

As I point out in my written statement, the evidence is clear that Yucca Mountain should be disqualified as a repository location, and no amount of legislative gerrymandering will change this statement. DOE recently released a so-called viability assessment for Yucca Mountain. The report calls to mind a famous Harry Truman quote. If you can't convince them, confuse them. And if you look at the viability study, I think you will see that is exactly what it attempts to do. A study based on flawed, biased and incomplete science, the viability assessment may very well be remembered for what DOE doesn't want acknowledged about Yucca Mountain, namely that the waste isolation features of a mountain are, in fact, insufficient to assure that radioactive wastes do not escape into the environment.

One startling revelation emerges from this report. To make the Nevada site meet even minimal standards, standards, I would point out, that are far less stringent than for other nuclear facilities in the country, DOE's viability assessment must rely on a waste disposal container that will last for 750,000 years. What happened to requirement that the geologic environment itself must be able to contain the waste for the time required with so-called engineered barriers providing only enhancement and redundancy for the system? This requirement is the very basis for deep geologic disposal of spent fuel and high-level waste in the first place.

The area encompassing Yucca Mountain that we know and a Nevada test site lies within a region identified by the U.S. Geological Survey as one of the most seismologically active regions in the country. During the past 20 years, there have been over 621 earthquakes recorded with magnitudes of 2.5 or greater, including a 5.6 magnitude quake in 1992 that occurred just 12 miles from the proposed repository and even closer to the proposed interim storage site causing over $500,000 in damage to DOE's Yucca Mountain support facility. Just last month, two substantial earthquakes, one a 4.5 and the other 4.7, and a swarm of smaller quakes were recorded in the Frenchman Flat area of the test site very close to Yucca Mountain, in area 25, the proposed interim storage location.

The U.S. Immigration and Naturalization Service recently commissioned a study to screen possible locations for a new national data processing facility for immigration records and information. The INS specifically ruled out all of southern Nevada and southern California because this region is considered to be too prone to disruption by earthquakes. Isn't it ironic that it is acceptable to DOE to store extremely dangerous and long-life radioactive waste at Yucca Mountain, but it is too risky to use the same area for storing records on legal and illegal immigrants.

H.R. 45 also designates the Nevada test site as the location for a so-called interim storage facility for spent nuclear fuel. It does so without one bit of scientific or technical evidence suggesting that the site is safe and suitable for such storage, and without any justification whatsoever other than Nevada's perceived political vulnerability.

Many of the same factors that make Yucca Mountain unsuitable as a repository location also make the Nevada test site unsuitable for above-ground storage of spent fuel and high-level waste as proposed by H.R. 45. Such a facility cannot meet the Nuclear Regulatory Commission's licensing requirements governing seismic risk for nuclear facilities under current NRC regulations.

As a businessman, legislation like this makes no sense to me. As a father and grandfather, the unnecessary risk it poses not only to present and future generations of Nevadans, but also to families and children in communities throughout the country seems unconscionable to me. Not only does H.R. 45 put Nevada's people and environment at risk, but it would also expose thousands of communities and cities throughout the country to an unprecedented and potentially hazardous nuclear waste shipping campaign that will involve tens of thousands of truckloads and rail shipments over a sustained period of 30 years or more.

H.R. 45 would have thousands of shipments of dangerous nuclear waste rolling over the Nation's highways and railways within 4 years. It will result in massive unfunded costs to States and communities for emergency planning and preparedness. It will increase the risk of radiation exposure to people traveling on the country's interstate highways. It will dramatically increase the risk of radiation exposure due to accidents that will invariably occur in a shipping campaign of this magnitude. And it will significantly increase the risk of terrorism or sabotage against the inviting targets of nuclear waste trucks and trains.

The cost of this legislation poses another major problem. Our analysts with the oversight of a major national accounting firm recently estimated the total cost of a repository and interim storage system envisioned by H.R. 45 using procedures similar to those employed by DOE in its total system life cycle cost evaluations. They found that the total cost for development, operation and closure to be $54 billion in 1996. The nuclear waste fund at maximum will generate only about half of the necessary funds. It is unacceptable that the American taxpayer should have to bear the burden of paying billions of dollars for this misguided and risky program that was originally intended to be one of full cost recovery. And what will a Nation have gained by incurring this risk and enormous costs the program the program will entail?

If permitted to go forward, this legislation will result in the movement of spent fuel and high-level radioactive waste to a questionable and risky location in a facility that cannot meet NRC safety standards, next to a so-called repository site that is incapable of isolating radioactive materials as required and that will never be licensed or built.

At this point what does a Nation do? Will Congress pass legislation authorizing DOE to move all the waste back across the country where it came from? Will it attempt to find another actually suitable storage site with all the political baggage such an effort would imply?

Mr. Chairman, the direction of this legislation leaves Congress and the Nation in a—fraught with peril and a dangerous precedent. It will leave us in that position. As someone that strongly believes in the principles of federalism that governs State and Fed-

eral relationships in this country, I am very much disturbed by the damage H.R. 45 does to this essential principle that has characterized the American Republic for over 200 years.

Those who support this unfair legislation would have the American people believe there is no suitable alternative of shipping nuclear waste to Nevada. It should be known by everyone who follows this issue that science has created a process, dry cast storage, which enables high-level waste to be stored onsite at reactor locations for 100 years or more, sufficient time to explore more permanent and scientifically sound methods such as reprocessing and especially through our scientific methods. This legislation throws science out the window. It throws equity and fairness away. It places raw political expedience as the driving force for dealing with difficult problems involving technology in the environment.

Mr. Chairman, H.R. 45 to us is bad legislation and bad public policy. It will do great harm to Nevada, to many other States, and to the political fabric of this great Nation of ours, and I would ask you to give every due consideration in your deliberations to what is fair and to what is right for the people of America, and especially for those of us who live in the State of Nevada, and thank you for this opportunity. I will yield my remaining unlimited time to my two colleagues.

[The prepared statement of Hon. Kenny C. Guinn follows:]

PREPARED STATEMENT OF HON. KENNY C. GUINN, GOVERNOR OF NEVADA

Mr. Chairman, Members of the Subcommittee: I appreciate the opportunity to speak with you today on a subject that we in Nevada have been confronting for more than 20 years, and has held our full attention as a state since Congress acted in 1987 to single out Yucca Mountain, Nevada, as the only site to be studied as a candidate repository site for the nation's commercial and government-owned high-level nuclear waste.

We are all aware of the political nature of that 1987 decision. And we are all aware that no state would accept that decision with any less opposition than Nevada has shown during the past nearly 12 years. In 1989, the Nevada Legislature enacted a law making the storage of high-level nuclear waste illegal in the State. Some 14 other states had similarly intended legislation on their books at the time.

In a recent bi-annual poll conducted by the University of Nevada regarding major public issues in the State, 75% of Nevada citizens were opposed to Yucca Mountain becoming the final destination for the nation's high-level nuclear waste. Since 1992, this number has risen by 16 percentage points in the same poll. One must wonder why Nevadans, in impressive and increasing numbers oppose this imposition within our state.

The reasons are many, but they settle generally into two important categories—political fairness and equity, and safety. Nevada has no nuclear power reactors, and is far distant from most of the nation's reactors, which are east of the Mississippi River. The principle of regional equity that was intentionally embedded in the 1982 Nuclear Waste Policy Act as a fairness gesture for western states was essentially stripped from the Act in 1987. And now we see a further insult to fairness and equity in HR 45, which contains a provision to preempt any state laws, including federally delegated environmental protection authorities, that might interfere with the bill's purpose of storing nuclear waste in Nevada. Fairness is also at issue in the matter of HR 45's elimination of the Secretary of Energy's duty to determine, based on statutory criteria, the suitability of the site for development of a repository, and Nevada's ability to disapprove in a substantive manner before Congress, the Secretary's recommendation that the Yucca Mountain site be developed as a repository.

Both fairness and equity, and safety are at stake in the ongoing stream of actions to preserve the viability of the Yucca Mountain site through compromise of safety, suitability and licensing standards. The site should have been disqualified from further consideration in 1992 when it was clear to all parties that it did not meet the established safety standard for radionuclide releases from geologic repositories. Instead, Congress instructed the Environmental Protection Agency to write new, site

specific safety standards for a Yucca Mountain repository, and directed the Nuclear Regulatory Commission to conform its licensing regulations to that new standard. EPA has not yet acted, but the NRC has proposed a new standard for a Yucca Mountain repository that is less protective than that applied to the DOE's geologic repository for transuranic wastes at the Waste Isolation Pilot Plant, in New Mexico. The NRC also has ignored the Safe Drinking Water Act protection limit for radionuclides in drinking water, even though it is known that radionuclides released from a Yucca Mountain repository will contaminate the water supply aquifer used by local residents and farmers. Groundwater protection is afforded by law to all other people of the United States.

In December, 1998 former Governor Bob Miller and I, as Nevada Governor-elect, joined in a letter to Energy Secretary Richardson stating that the Yucca Mountain site should be disqualified from further consideration as a repository based on criteria established in the DOE's guidelines for repository site recommendation that were enacted pursuant to the Nuclear Waste Policy Act of 1982 and remain in effect today. The technical basis for disqualification was cited from DOE and other site data and analyses. Data and information presented in DOE's subsequently released Viability Assessment serves to confirm our finding that the site meets the guidelines' provision for disqualification due to rapid groundwater flow that would carry released radionuclides through Yucca Mountain and to the accessible environment. Despite clear information to the contrary in the Viability Assessment and in later DOE documents, Secretary Richardson responded that the disqualifying condition is not met. He said that average groundwater travel time from the repository to the accessible environment is greater than the required minimum 1,000 years. HR 45 would moot this critical safety criterion by eliminating the existing site recommendation guidelines and the required factors which are used to qualify or disqualify a candidate repository site.

With DOE's recent understanding that there are fast pathways for groundwater movement through Yucca Mountain, it revised its repository performance assessment code for use in the Viability Assessment and revised its safety strategy for a Yucca Mountain repository. The original notion of a geologic repository was that the natural features of the site, its geology and hydrology, would serve a significant role in assuring long-term isolation of the waste, and that engineered barriers would be employed to enhance the site's waste isolation capabilities. Now, the Yucca Mountain safety strategy relies nearly entirely on the predicted long lifetime of the metal waste containers in the repository, and then as the containers fail the released waste is intended to be diluted in the groundwater as it travels to locations where it can be pumped for human consumption and use. New information, presented last month to the U.S. Nuclear Waste Technical Review Board by DOE, indicates that the Yucca Mountain site's natural barriers to waste release only account for a fraction of a percent of the predicted repository performance, and the engineered waste container is the primary functional barrier. As the containers fail, mainly due to corrosion, increasing amounts of radionuclides will be released to the groundwater, and the predicted average peak dose to humans will be approximately 250 times the limit set by the Safe Drinking Water Act.

The Yucca Mountain site, according to all current data will not function as a geologic repository. Instead, if developed, it would be an Underground engineered repository until the engineered barriers fail. With failure, the resulting doses would be totally unacceptable, for health and safety reasons, if they were intended to be imposed on the public today. HR 45's provision for a maximum dose standard of 100 millirems per year to an average individual in the vicinity of the site represents a standard 25 times greater than the dose limit of the Safe Drinking Water Act. This too, in our view, is an unacceptable risk to the public coming from just one component of the nuclear fuel cycle. This is an especially important consideration in view of new information about plutonium and tritium migration at unexpectedly long distances from underground nuclear weapons test locations at the Nevada Test Site. Some of these contaminants, once they exit the Test Site boundary will add to the radionuclide concentration in the same aquifer affected by releases from a Yucca Mountain repository, further increasing the predicted doses to the public.

Broad ranges of uncertainty plague the calculated performance assessment for a Yucca Mountain repository. The Viability Assessment indicates that the uncertainty associated with the waste package lifetime projections is a factor of about 1,000 fold, and the uncertainty in the total performance assessment is on the order of a factor of 100,000 to 1 million. DOE's primary effort is to reduce uncertainty in the engineered system, since it does not believe it can further significantly reduce uncertainty in the performance predictions of the natural system. DOE continues to express the results of the performance calculations as mean values, without elaborating on the associated range of uncertainty, which means that a predicted dose

of 1 millirem to an individual per year could actually represent an expected range of dose spanning from .001 millirems to 1,000 millirems. The lower portion of the range might be an acceptable dose, while the upper range doses certainly are not acceptable. It does not appear that the uncertainties associated with the Yucca Mountain repository performance calculations will be reduced significantly at the time the Secretary's suitability determination and site recommendation is scheduled to be made. This casts serious doubt on the use of the Viability Assessment to support any decision to continue site characterization and expenditures of the Nuclear Waste Fund on the Yucca Mountain site.

Seismicity and earthquake impacts have been generally relegated by DOE to be design issues for a Yucca Mountain repository, including the surface facility during the operations phase. At issue is the credibility and feasibility of designs for both underground and surface facilities to withstand safely a possible Magnitude 7 earthquake in the vicinity of the site, and the strong ground shaking predicted to occur sometime in the next 10,000 years by the Viability Assessment technical bases information reports. As you may have heard, a swarm of earthquake activity has occurred during the past month on the Nevada Test Site, with the largest registering Magnitude 4.7, and eight events greater than Magnitude 3.0 in a four day period. These earthquakes have occurred on the eastern end of the Rock Valley Fault, one of the most active faults on the Test Site. Swarms of earthquakes on the western end of this fault, near Yucca Mountain are commonplace. I have attached recent press accounts of these earthquakes to my statement.

During the period 1976 to 1996, within a fifty mile radius of Yucca Mountain there have been over 620 recorded earthquakes with a magnitude greater than 2.5. The largest of these, with a magnitude of 5.6, occurred on June 29, 1992 at Little Skull Mountain, a few miles from the Yucca Mountain site. This earthquake, on a fault near the Rock Valley Fault, caused damage to the DOE's Yucca Mountain Field Operations Center at the Test Site.

Independent researchers from the California Institute of Technology and Harvard University recently reported that their investigations in the Yucca Mountain region indicate tectonic strain and earth crustal deformation is more than ten times greater than previously assessed by the Yucca Mountain Project. This could lead to more frequent and larger earthquakes than previously predicted for the Yucca Mountain area, and a greater probability of recurrence of volcanic activity that could impact the repository site. Further research is being carried out by these scientists and the Nevada Bureau of Mines and Geology under a cooperative agreement with DOE.

It is noteworthy that, under current Nuclear Regulatory Commission regulations regarding earthquake potential, a nuclear power reactor would not be licensable at the Yucca Mountain site, and an Interim Storage Facility as proposed by HR 45 would be subject to the same safety regulations. The apparent proposed location of the Interim Storage Facility on the Test Site lies between the Yucca Mountain site and the location of the 1992 earthquake and the Rock Valley Fault.

Aside from earthquake safety concerns associated with the Interim Storage Facility proposed by HR 45, operation of the facility would begin transportation of high-level nuclear waste from the nation's nuclear power reactors and DOE defense facility locations to Nevada, based on the apparent assumption that the Yucca Mountain repository site will be found suitable and receive a license for development and operation of a repository. Not only does this assumption incorrectly prejudge the technical suitability of the site, as discussed above, but it encourages approval to begin development of an unsafe repository. If the repository is not approved or developed, the waste would have to be moved again to some future disposal location, thus increasing transportation risks to the public. As it is, transportation of the thousands of shipments of waste to Nevada over a thirty year period will impact 43 states, and more than 50 million Americans within a one half mile of the highway and rail routes.

Transportation risks are exacerbated by the evolving threat from terrorist action or sabotage. Spent fuel and high-level nuclear waste trucks and trains will make for new and potentially attractive targets, especially in the many urban areas through which they must pass en route to a Nevada facility.

The cost of this legislation poses another major problem. An independent cost assessment, released in February 1998, was conducted by a team of experts with oversight by a major national accounting firm. The report estimates the total cost of the repository and interim storage system envisioned by HR 45, using procedures similar to those employed by DOE in its Total System Life Cycle Cost evaluations, and concludes that the total cost for development, operation, and closure to be $53.9 billion in 1996 dollars. The Nuclear Waste Fund, at maximum, will generate only about half of the necessary funds. It is unacceptable that the American taxpayer

should have to bear the burden of paying billions of dollars for this misguided and risky program that was originally intended to be one of full cost recovery.

The development and operation of interim storage and repository facilities in Nevada and the transportation of spent fuel and highly radioactive materials to such facilities will also result in significant socioeconomic impacts. These impacts will be felt most acutely by Nevada's tourism-based economy, but they will also affect cities and communities all across the country should there be accidents or incidents involving nuclear waste shipments, as there almost certainly will given the magnitude and duration of the shipping campaign.

In Nevada, the impacts from disruptions of the tourism economy due to real or perceived risks from repository or interim storage-related activities could run into the hundreds of millions of dollars depending on the nature of the precipitating event, its location (i.e., within the Las Vegas metropolitan area), the intensity of media attention given to it, and other variables.

Similar economic disruptions are clearly possible in any of the hundreds of major metropolitan areas through which waste shipments will pass and in rural areas that are especially vulnerable to radiation-driven impacts (i.e., such as agricultural or ranching areas that could be either contaminated or stigmatized as a result of an accident or incident).

HR 45 is an unacceptable bill for Nevadans because it promotes unprecedented health and safety risks to current and future Nevadans—at levels no other citizens of the nation are expected or required to endure. HR 45 is an unacceptable bill for the nation because it imposes unnecessary radiation risks from normal transportation operations and accidents on a significant portion of the population.

I urge rejection of HR 45 in the interest of protecting the health and safety of Nevadans and all Americans.

Thank you for the opportunity to present my views and those of my fellow Nevadans to this Subcommittee on a matter of critical importance to my state and the nation.

Mr. BARTON. That is out of order, Mr. Governor. Good try.

The Chair would thank the distinguished Governor for his statement, both written and verbal. We take what you have said very seriously.

Mr. GUINN. Mr. Chairman, in my anxiety I forgot one thing I must do quickly, if you would allow me. I did bring a signed resolution from our legislative body who is in session, both the senate and the house, where it passed against H.R. 45, 19 to 1 in the senate and 32 to 0 in the assembly, and I would like to provide you copies of that.

Mr. BARTON. Without objection. The chair would ask unanimous consent. I assume there is no objection. Without objection, so ordered.

The gentleman from Texas.

Mr. HALL. I was just going to say if you acceded to my request, we would have held this hearing in Las Vegas. The Governor would be making the terms about how long he could speak.

Mr. BARTON. I couldn't afford to hold this hearing in Las Vegas.

We are going to now recognize the senior Member of the House delegation for 5 minutes, and then Ms. Berkley for 5, and then Mayor Phillips for 5.

Congressman Gibbons, your written statement is in the record. We welcome you to summarize that for 5 minutes.

STATEMENT OF HON. JIM GIBBONS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEVADA

Mr. GIBBONS. Thank you, Mr. Chairman. I appreciate the opportunity, and I will try to summarize my testimony to be as brief as possible.

To begin with, Mr. Chairman, let me say that H.R. 45 is a death sentence on Nevada that we cannot live with. Nor is it a sentence that America should impose upon the people of this country, and especially the people of Nevada. It is a safety issue. And H.D. Wells once said, human history becomes more and more a race between education and catastrophe. Let me say that I dare anyone in this room to point to me any structure that this human race has ever built that has lasted 10,000 or more years.

What we engineered just 30 years ago has been proven today oftentimes to be unsafe and of poor technology, whether it is buildings that we design or airplanes, anything that has been engineered. Technology seems to change with time. I ask each of you here in this committee that if this nuclear waste were coming to your back yard, what concerns, what issues would you like to see ensured, recovered adequately with sound science to give you the comfort to know that it was coming to your back yard safely?

I dare say that those of you who are supporting this bill probably are supporting it because you do not want it in your back yard. No one wants this in their back yard. And this bill circumvents and shortchanges many environmental protections that this Congress and the American people decided were necessary to give the confidence of safety not just to the site itself, but to the transportation route along which this material will travel.

Mr. BARTON. Could the gentleman suspend for just a second? This is one 15-minute vote. I have sent a Member over to vote. We are going to try to continue the hearing, to let you all know that. We are not going to suspend. So continue, Mr. Gibbons.

Mr. GIBBONS. Let me add to this, if you look at the bill, if you look at the technology that has been the core basis of shipping this material from the current sites as proposed to Nevada, those casts have not been certified as being exposed to the complete degree and safety traumas that would—or may be exposed to those in any accident that may occur along the way, and we see a number of times railway accidents, highway accidents which are violent and high-temperature fires resulting which could breach one of these casts.

To that regard, let me just tell you that each one of these rail casts holds 24 nuclear fuel assemblies, and each fuel assembly contains 10 times the radioactivity of the Hiroshima bomb. If it were to have an accident, breach the cast, in your community, the catastrophe would be overwhelming in terms of human life, property damage and the cost of cleanup to this Nation.

It creates several environmental concerns that shortcut the ongoing studies of the current site characterization study taking place at Yucca Mountain. It revokes the regulations that establish scientific guidelines for determining site suitability such as ground water movement, lime stability, and geologic stability.

Beyond the circumvention of these national environmental laws, Yucca Mountain must be disqualified in itself scientifically on three very important reasons, one being that rainwater less than 50 years old has been detected in the underground site they are looking at. The Nuclear Waste Policy Act, part of this bill and the premise of this bill, states ground water travel time to the repository must take no less than 1,000 years. Here we have ground water reaching the site in 50 years. I am not a mathematician. My

colleague from Georgia mentioned that math is one of his expertises, but I can see 50 is far short of 1,000.

The second reason of disqualification, the geologic barriers of Yucca Mountain will not limit the radionuclide releases that allow for this material to pollute ground water supplies in the region. And again, this should be a show-stopper and disqualification scientifically.

And the last thing I want to bring up here today, since the beginning of the year, and you have heard the Governor of our State talk about this, there have been just in 1 month 13 earthquakes in this area. Seven of those have the magnitude of 3 on a Richter scale or higher. This shouldn't surprise anyone on this who happens to have any small degree of acumen for science, because when you talk about Yucca Mountain, Yucca Mountain is a mountain. It didn't get there some placid tectonic event. It got there because of faulting and other geologic tectonic movement which is currently ongoing and will continue to ongo this process over the next year, 10 years, thousand years, or a hundred thousand years. And let me say the DOE has a responsibility to pay close attention to this fact.

I only ask that this committee do what is right to provide for the safety of America, to provide for the safety of the people of Nevada in looking at this issue, in looking at the fact that Yucca Mountain is unsuitable as a site for storage, whether it is temporary or permanent.

Mr. Chairman, I will submit my complete testimony for the record. Thank you very much.

[The prepared statement of Hon. James A. Gibbons follows:]

PREPARED STATEMENT OF HON. JAMES A. GIBBONS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEVADA

Mr. Chairman: The issue is safety! H.G. Wells once said that human history becomes more and more a race between education and catastrophe. Nothing in the history of mankind has withstood the test of 10,000 years.

What was state of the art technology and engineered as safe even as late as 1970, has proven not to be a safe solution today. Let's not allow short term safety issues to become serious, long term problems hundreds of years from now.

Let me begin by saying, on behalf of myself and the constituents of Nevada, that I appreciate the opportunity to testify before your subcommittee this morning.

Few, if any problems have become more challenging in recent years than the disposal of nuclear waste.

I believe that certain standards based on *sound science* along with the protection and welfare of this nation's citizens, should be the fundamental threshold when we address nuclear waste storage.

H.R. 45, the Nuclear Waste Policy Act of 1999, will mandate upon the state of Nevada and this nation, the transportation of high level waste while failing to address the issues of safety and general well-being of its citizens.

H.R. 45 will open the door to nuclear waste transportation on a scale unprecedented in history.

The deadliest materials ever created would hit the nation's roads and rails, bringing with them the risks of transportation accidents of the most lethal proportions.

Cask safety standards fail to address the full range of trauma to which a cask may be exposed in an accident, and regulations do not even require testing of full-scale models to ensure compliance.

The bill only mandates that shipping begin no later than June 30, 2003 and that packages have been certified for such purposes by the Nuclear Regulatory Commission.

Nevada has long been targeted as the nation's nuclear testing and dumping ground, although it has no nuclear reactors of its own, and more than three quarters of the nation's reactors are east of the Mississippi River.

However, I don't believe that this is just a Nevada issue. Many states will be directly affected by the rail and trucking transportation routes.

A high speed accident, near any one of your districts' communities, could unseat a valve or damage a seal, releasing radioactive particulates into the environment. Each rail cask holds up to 24 fuel assemblies.

In terms of radioactivity, each fuel assembly contains 10 times the long-lived radioactivity released by the Hiroshima bomb.

H.R. 45 also creates several environmental concerns. First, it shortcuts the ongoing studies that are currently taking place at Yucca Mountain.

Specifically, by revoking regulations that establish sound scientific guidelines for determining site suitability, such as groundwater movement, climatic stability and geological stability.

Not to mention, H.R. 45 preempts the National Environmental Policy Act, the Safe Drinking Water Act and any federal, state, or local law that is currently inconsistent with the bill.

Beyond the circumvention of this nations environmental laws, Yucca Mountain must be disqualified for at least three other very important reasons.

One being that rainwater, less than 50 years old, has been detected in the underground site.

The Nuclear Waste Policy Act states that the groundwater travel time to the repository must take more than 1000 years, or the site will be disqualified. Now I'm not a mathematician but I think you can see my point.

The second reason for disqualification is the geologic barriers of Yucca Mountain will not limit radionuclide releases, thereby polluting groundwater supplies in the region.

This again meets the conditions for disqualification and is a true show stopper.

Lastly, since the beginning of this year, a little over one month ago, there have been 13 earthquakes, and seven of those earthquakes with a magnitude of 3 or higher, near Yucca Mountain.

This shouldn't be a surprise though, because Yucca Mountain, get it—MOUNTAIN—is not geologically sound. It's a MOUNTAIN and it's MOVING!

Realize that you don't store nuclear waste in a area that ranks third in the country for seismic activity; an area that has had over 621 earthquakes in the last 20 years; and an area that has had 13 earthquakes in less than 30 days!

It is important—in fact it is very important—to point out that the scientific merit of these facts are extremely credible.

Now it becomes my Congressional responsibility to ensure that Congress and the Department of Energy does not ignore these facts or attempt to alter their regulations.

This scientific approach dictates that DOE disqualify the site, *and not the regulations.*

I would ask this Committee and Congress to look past the emotional idea that, "We have to do something with nuclear waste," because as the bill states, spent fuel can be safely stored at reactor sites.

We must be united in this common sense fight, *We must demand sound, credible science!*

The art of political persuasion has no place in this fight. Members of Congress and the DOE must look at the hard, scientific evidence that proves the site is unsuitable.

H.R. 45 will also establish a single performance standard regarding the amount of annual radiation exposure the surrounding population can be exposed to.

It will also allow the general population in the vicinity of the Yucca Mountain site to be exposed to an annual dose of up to 100 millirems annually, a level four times the amount of exposure allowed at current storage facilities.

The International Commission on Radiological Protection and the Nuclear Regulatory Commission, stated that this exposure level is associated with a lifetime risk of one excess cancer death for every 286 exposed individuals.

As the Environmental Protection Agency Administrator Carol Browner wrote, an annual dose of 100 millirems would allow radiation "exposures of future generations of Nevadans which are much higher than those allowed for other Americans and citizens of other countries." *This is a death sentence that Nevada cannot live with.*

Lastly, as you may know, The Nuclear Waste Technical Review Board, an organization created *by Congress* to provide technical and scientific evaluation of nuclear waste storage concluded, in the March 1996 report, that *there is no compelling technical or safety reason to move spent fuel* to a central facility, and this holds true today.

If this nonpartisan Review Board, whose purpose was to look at irrefutable unbiased science, made this determination, then I believe there is no justifiable reason to move nuclear waste from onsite storage.

It becomes evident that several environmental and safety concerns must be addressed before we, as federal legislators, and many times the guardians of citizen safety and well-being, move forward and mandate an unsafe permanent or interim nuclear waste storage facility at Yucca Mountain.

Again, Mr. Chairman I would like to thank you for the opportunity to testify before the Energy and Power Subcommittee, and would request that you include some additional written information to be added in the record as part of my testimony.

If I can be of any assistance to you or any other member of the Subcommittee, please let me know.

Mr. BARTON. Thank you, Congressman. We appreciate your leadership on this issue. It is obvious that you care about it personally and have been a leader for your State on their position.

We would recognize our junior member Congresswoman Berkley for up to 5 minutes, reminding her that you also have to go vote if you wish.

STATEMENT OF HON. SHELLEY BERKLEY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEVADA

Ms. BERKLEY. I have the same clock that Congressman Gibbons has. I thank you, Mr. Chairman, members of the subcommittee, and thank you for allowing me the opportunity to address you.

Before I begin my testimony, I ask that Senator Richard Bryan's testimony be entered into the record.

Mr. BARTON. Without objection.

[The prepared statement of Hon. Richard Bryan follows:]

PREPARED STATEMENT OF HON. RICHARD BRYAN, A U.S. SENATOR FROM THE STATE OF NEVADA

Mr. Chairman, thank you for permitting me to testify before the Subcommittee today.

As you know, we in Nevada have a keen interest in the legislation before the Subcommittee today—for us, it is literally a life or death issue.

The legislation before the Subcommittee today shows a callous disregard for the health and safety of Nevadans, and millions of Americans across the nation.

Nevadans have been the unwilling victims of a nearly twenty year political campaign orchestrated by the nuclear power industry at the expense.of our, and future generations of Nevadans', health and safety. Today we are discussing yet another potential chapter in this long and disgraceful story.

The bill before the Subcommittee today is a response to the industry's high level of frustration with the federal high-level waste program—but it is a poorly conceived, selfserving, and irresponsible one.

Nevadans had no part in creating the commercial nuclear power industry's waste problem, but are nevertheless expected to bear the full burden of the industry's environmental legacy.

Now, as scientific data begins to bear out our long held position that the site cannot be found suitable, the industry has proposed yet another round of political gerrymandering to again rewrite the rules, and attempt to overcome the scientific and engineering obstacles to shipping its waste to Nevada.

The industry knows, however, that to overcoming the scientific obstacles to shipping its waste to Nevada is no small task—and that is why this legislation is such an environmental travesty.

In addition to siting an unnecessary and unsafe "interim storage" facility in Nevada, the legislation makes a mockery of decades of bipartisan environmental protection statutes.

It establishes a radiation release standard far less protective than any other federal, or international, standard. The legislation proposes to subject Nevadans to radiation releases 25 times that allowed under the Safe Drinking Water Act, and more than 6 times that allowed for the WIPP facility in New Mexico.

It guts NEPA, the primary federal statute designed to provide confidence to the public in federal environmental activities.

It places 50 million citizens in 43 states along transportation routes for the waste shipments in harm's way. The state of every member of this Committee is along these transportation routes.

It provides a multi-billion dollar windfall to nuclear utilities, who are attempting to dodge their financial responsibility for the storage and disposal of their waste.

Finally, the bill before the Subcommittee adds to the already dangerous and misguided nuclear repository program a new, even more irresponsible "interim" storage program.

Interim storage at the NTS is not only unnecessary, it seriously compromises the characterization of the Yucca Mountain site as a permanent repository. Siting centralized interim storage at the NTS prior to an objective, science based evaluation of Yucca Mountain prejudges the outcome of the characterization process, and will eliminate any hope of public confidence in the study the Yucca Mountain site.

The sole purpose of this legislation is to shift the burden of the nuclear power industry's waste problem to the people of Nevada and the American taxpayer. Under this legislation, the utilities are the winners, and Nevadans, and every other citizen with even a shred of respect for the environment, are the clear losers.

Despite the "rosy scenario" of the Department of Energy's "viability assessment," it would be difficult to find anyone today willing to wager that Yucca Mountain will ever be licensed. Despite the Department of Energy's best efforts to explain them all away, scientific data continue to build and cast doubt on the ability of the Department to ever demonstrate that the site can safely contain high level waste.

The geology underground has proven difficult to model; recent data at the adjoining NTS have demonstrated far faster migration of plutonium underground than DOE scientists have predicted.

The important question of water seepage through the site remains open; higher than expected levels of Chlorine 36 at the repository level can only be explained by water penetration from the surface in the last few decades.

Volcanic activity in the area appears to have been far more recent than previously estimated.

Seismic activity—a particularly important issue in relation to interim storage—continues to be very active. Yucca Mountain, and the NTS, lie within the second most active seismic area in the continental United States. Well over 600 earthquakes registering over 3.0 on the Richter scale have been recorded in the area in the past twenty years—including six last month, two of which registered over 4.5.

The area around Yucca Mountain and NTS is a constantly shifting, very active geological formation—hardly a suitable site for an underground repository, and even less suitable for an above ground "interim storage" facility.

The cost of the repository—without even including any new interim storage—has gone through the roof, and will outstrip the current projected revenue of the Nuclear Waste Fund by tens of billions of dollars. The DOE's current estimate of the cost to complete the repository—which does not include interim storage-is a staggering $36.6 billion.

The legislation before the Subcommittee today faces little or no chance of enactment. It is opposed by every major environmental group. Both the Department of Energy and the Nuclear Waste Technical Review Board oppose centralized interim storage, as well as the bill's necessary diversion of resources away from characterization of Yucca Mountain. The President will veto the bill, and we will have the votes in the Senate to sustain the President's veto.

I urge the Subcommittee to reject this misguided legislation.

Ms. BERKLEY. This hearing puts me in mind of that old saying everything has been said, but not everyone has said it. I come before you to give voice to the well-founded fears and concerns of the citizens of the Las Vegas Valley, which is my home district, and the citizens of the entire State of Nevada.

Over 1.5 million Nevadans live within an hour or so drive of the so-called temporary high-level nuclear dump proposed by H.R. 45. This bill would dump over 70,000 tons of incredibly lethal substance in one location in southern Nevada. Those Nevadans, mothers like me, fathers, sons, daughters, and grandparents, deserve the same health and safety protections as every other American. H.R. 45 would deny equal protection under the law to the citizens of Nevada and future generations of Nevadans. But I will also dis-

cuss how this bill places Americans in all parts of the country at risk.

When you live in a State that has been singled out as a target for a nuclear payload, you give close attention to this issue. Nevadans know just how toxic, how dangerous, how menacing high-level nuclear waste really is. To give you some idea, a person standing next to an unshielded spent nuclear fuel assembly would get a fatal dose of radiation within just 3 minutes. Under H.R. 45, the concentrated level of deadly radiation at one place in my home State staggers the imagination. H.R. 45 would force all of the nation's high-level waste on the people of one State, a State where there is not even one nuclear reactor.

For nearly two decades, the nuclear industry and the Department of Energy have tried to convince Nevadans that high-level nuclear waste transportation and storage is safe. Their argument basically is we will just stuff this high-level nuclear waste into metal cans, screw the lids on tight, and there is nothing to worry about. What is wrong with this picture?

Well, if those cans of nuclear waste are so safe, why do they have to be shipped from all over the United States and dumped in Nevada? That question has haunted Nevadans for years, and our concerns have again intensified with H.R. 45. This bill would unleash high-level nuclear waste onto the Nation's highways and rail lines. It is this issue, that transportation of high-level nuclear waste, that binds Nevadans and all Americans as potential victims of H.R. 45.

Americans from all parts of the country would be exposed to unacceptable and unnecessary risk because they live near highways and railways where the nuke trucks and trains would roll. Moving nuclear waste to Nevada would require well over 100,000 long-haul shipments. Nuclear waste would be speeding around the clock every day for 30 years over our roads and rails. This should sound a national alarm. The deadly cargo would intrude on 43 States and hundreds of cities and towns. Fifty million Americans live within just a half a mile of the shipping routes. The waste will rumble through Birmingham, Alabama; Laramie, Wyoming; Portland, Maine; and the suburbs of Los Angeles; Miami, Florida; Kansas City, and St. Louis, Missouri. In short, nuclear waste will be on the move all over the country for all time for 30 years.

The Department of Transportation counted more than 99,000 incidents in which hazardous materials were released from trucks and trains from 1987 to 1996 causing 356 injuries and 114 deaths.

The Department of Energy has described a plausible crash scenario involving high impact and fire that would contaminate an area of 42 square miles with radioactive debris. It is truly horrifying to picture this happening in a populated area.

We have been repeatedly told that shipping nuclear waste across the country and stashing it at a dump site is safe, but let's take a brief look at the history of how the Federal Government has handled nuclear projects. The lands around nuclear installations at Hanford, Washington; Rocky Flats, Colorado; Oak Ridge, Tennessee; Fernald, Ohio, are contaminated. The GAO concluded that 124 of our 127 nuclear sites has been mismanaged by the DOE.

Nevadans don't buy into the don't worry, be happy attitude toward radiation, and for good reason. I grew up in Nevada. Nevad-

ans are proud to volunteer for the patriotic chore of playing host to above- and below-ground nuclear weapons testing, but the Federal Government never leveled with us about the risks. In the 1950's, the government produced films advising if people just stayed indoors as clouds of fallout drifted through our communities, everyone would be safe. As a safety measure, the government suggested that a quick car wash would eliminate any pesky radioactive contamination. It seems harmless enough if it wasn't for the evidence of a disturbing increase in cancer that later traumatized these same communities; harmless, perhaps, if above-ground testing didn't spread radioactive elements across the country.

Supposedly safe above-ground nuclear tests were stopped when it was proved that radiation was winding up in the bodies of American children through the milk that they were drinking. Underground testing was supposed to be the safe answer, or so the government said. The radioactivity would be trapped underground, never to get out except when some of the underground shafts burst open spewing radiation into the air, and now scientists are finding that plutonium thought to be trapped in these test shafts is moving through the ground water at alarming speed. So I have a healthy skepticism about Federal nuclear programs. My healthy——

Mr. BARTON. Could you summarize? It is amazing in the short time you have been in the Congress you are already right at home in going beyond the time limit. You are doing very well.

Ms. BERKLEY. Yes, Mr. Chairman, I will be brief.

H.R. 45 would be a terrible and needless mistake. If passed, it would be fought in court by Americans across this country. I would stand with them in court or on the roads and the rails if necessary to stop this disastrous policy. Thank you very much for your attention.

Mr. BARTON. Thank you. Thank you, Congresswoman.

Ms. BERKLEY. May I submit my full remarks for the record.

Mr. BARTON. Your entire statement is in the record.

[The prepared statement of Hon. Shelley Berkley follows:]

PREPARED STATEMENT OF HON. SHELLEY BERKLEY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEVADA

Mr. Chairman, Members of the Subcommittee: Thank you for allowing me the opportunity to address you. This hearing puts me in mind of that old saying everything has been said but not everyone has said it.

Before I begin my testimony I ask that Senator Richard Bryan's testimony be entered into the record. I come before you to give voice to the well-founded fears and concerns of the citizens of the Las Vegas Valley—which is my home District—and the citizens of the entire state of Nevada.

Over one and a half million Nevadans live within an hour or so drive from the so-called temporary hi-level nuclear dump proposed by H.R. 45. This bill would dump over 70,000 tons of an incredibly lethal substance at one location . . . in southern Nevada. Those Nevadans—mothers, like me . . . fathers, sons, daughters, and grandparents deserve the same health and safety protections as every American. HR 45 would deny equal protection under the law to the citizens of Nevada and future generations.

But I will also discuss how this bill places Americans *in all parts of the country* at risk.

When you live in a state that has been singled out as the target for a nuclear payload, you give close attention to the issue. Nevadans know just how toxic, how dangerous, how menacing high level nuclear waste really is. To give you some idea, a person standing next to an unshielded spent nuclear fuel assembly would get a fatal dose of radiation in just three minutes.

Under H.R. 45, the concentrated level of deadly radiation at one place—in my home state—staggers the imagination. H.R. 45 would force all of the nation's high-level waste on the people of one state . . . a state where there is not even one nuclear reactor.

For nearly two decades the nuclear industry and the Department of Energy have tried to convince Nevadans that high level nuclear waste transportation and storage is safe. Their argument basically is, "We'll just stuff this high level nuclear waste into metal cans, screw the lids on tight, and there's nothing to worry about."

What's wrong with that picture? Well, if those cans of nuclear waste are so safe . . . WHY DO THEY HAVE TO BE SHIPPED FROM ALL OVER THE UNITED STATES AND DUMPED IN NEVADA?

That question has haunted Nevadans for years. And our concerns have again intensified with H.R. 45. This bill would unleash high level nuclear waste on to the nation's highways and rail lines. It is this issue—the *transportion* of high level nuclear waste—that binds Nevadans with *all* Americans as potential victims of HR 45. Americans from all parts of the country would be exposed to unacceptable and unnecessary risk . . . because they live near the highways and railroads where the nuke trucks and trains would roll.

Moving nuclear waste to Nevada will require well over 100,000 long-haul shipments. Nuclear waste will be speeding . . . around the clock, everyday, for 30 years . . . over our roads and rails. This should sound a national alarm.

The deadly cargo will intrude on 43 states and hundreds of cities and towns. 50 million Americans live within just a half mile of the shipping routes. The waste will rumble through Birmingham, Alabama and Laramie, Wyoming. Portland, Maine and the suburbs of Los Angeles. Miami, Florida and Kansas City and St. Louis, Missouri. In short, nuclear waste will be on the move all over the country . . . all the time . . . for 30 years.

The Dept. Of Transportation counted more than 99,000 incidents in which hazardous materials were released from trucks and trains, from 1987 to 1996 . . . causing 356 major injuries and 114 deaths.

The Dept. of Energy has described a plausible crash scenario involving high impact and fire that would contaminate an area of 42 square miles with radioactive debris. It is truly horrifying to picture this happening in a populated area.

We've been repeatedly told that shipping nuclear waste across the country and stashing it at a dumpsite is safe. But let's take a brief look at the history of how the federal government has handled nuclear projects. The lands around nuclear installations at Hanford, Washington . . . Rocky Flats, Colorado . . . Oakridge, Tennessee . . . Fernald, Ohio . . . are contaminated. The GAO concluded that 124 of our 127 nuclear sites had been mismanaged by the DOE.

Nevadans don't buy into the "don't worry, be happy" attitude toward radiation. And for good reason.

I grew up in Nevada. Nevadans were proud to volunteer for the patriotic chore of playing host to above and below ground nuclear weapons testing. But the federal government never leveled with us about the risks.

In the 1950's the government produced films advising if people just stayed indoors as clouds of fallout drifted through communities, everyone would be safe. As a safety measure, the government suggested that a quick car wash would eliminate any pesky radioactive contamination.

It seems harmless enough . . . if it weren't for the evidence of a disturbing increase in cancer that later traumatized these communities. Harmless, perhaps, if above ground testing didn't spread radioactive elements across the country. Supposedly "safe" above ground nuclear tests were stopped when it was proved that radiation was winding up in the bodies of American children through the milk they were drinking.

Underground testing was supposed to be the safe answer . . . or so the government said. The radioactivity would be trapped underground—never to get out . . . except that some of the underground shafts burst open, spewing radiation into the air.

And now, scientists are finding that plutonium, thought to be trapped in those test shafts—is moving through the ground water at alarming speed.

So I have a healthy skepticism about federal nuclear programs.

My healthy skepticism persuades me that H.R. 45 is in fact a Trojan Horse for permanently dumping high level waste in Nevada. Make no mistake, there is nothing "temporary" about HR 45. This bill is a political vehicle to get the waste to Nevada, to be conveniently parked next door to Yucca Mountain, the site of a failing effort to justify a permanent dump.

The past year has been marked by a quickening pace of scientific evidence that clearly eliminates Yucca Mountain as a safe place for nuclear waste. Water will

saturate the dump. Those who thought Yucca Mountain would be dry for 10,000 years are stunned to discover that water is filtering through at an alarming rate.

Yucca Mountain has been,...is,...and always will be jolted by earthquakes. In recent days, seismologists described swarms of earthquakes that rocked the area. To visit Yucca Mountain is to feel the earth move.

And, a growing number of scientists fear that a Yucca Mountain dump, intended to isolate deadly radioactivity forever, may well explode into an environmental apocalypse of *volcanic* eruptions.

It is not nice to try to fool Mother Nature. Where earthquakes, water, and volcanic activity are permanent dangers, we must not build a high level nuclear dump.

The nuclear power industry should immediately cancel the Yucca Mountain project. The billions of dollars coming from ratepayers would be better spent finding a sensible and safe solution to nuclear disposal. Instead, we have HR 45. This bill exists because the nuclear power industry sees that the only way to keep the Yucca Mountain Project alive is to build a temporary dump next door.

With the waste were stacked up at a temporary dump near Yucca Mountain, there would be a powerful motivation to make Yucca Mountain work out—somehow. Under those circumstances, I fear that the health and safety of current and future generations would be jeopardized for the sake of expediency. As the Nuclear Waste Technical Review Board has clearly stated, a temporary facility at the Nevada Test Site could prejudice the later decisions about the suitability of Yucca Mountain.

HR 45 has its roots in expediency over public health and welfare.

HR 45 throws out existing radiation safety standards...and replaces them with dangerous levels of radiation exposure that would be quote "acceptable." The temporary dump can not meet the current standards, so HR 45 permits Nevadans to be exposed to 4 to 6 times the amount of radiation allowed at other waste sites. HR 45 allows exposure 25 times the level set by the Safe Drinking Water Act.

EPA Administrator Carol Browner said HR 45 would authorize "exposures to future generations of Nevadans which are much higher than those allowed for other Americans and citizens of other countries."

Congress, in 1982, called for 9 potential nuclear storage sites to be assessed. By 1987, due to political considerations...not scientific findings...Yucca Mountain alone was targeted for site characterization.

As it became increasingly clear Yucca Mountain is not suitable under the stringent and responsible law Congress passed in 1982, the rules have repeatedly been relaxed in favor of Yucca Mountain and against health and safety.

And now comes HR 45, a bill which achieves nothing but risks the health and safety of current and future generations. The Nuclear Waste Technical Review Board advises that there are no compelling reasons to move the nuclear waste in the short term.

HR 45 would be a terrible and needless mistake. If passed, it will be fought in court by Americans across the country. I would stand with them in court—or on the roads and rails, if necessary to stop this disastrous policy.

Thank you.

Mr. BARTON. The Chair would recognize the honorable mayor of Caliente Kevin Phillips.

The Chair is going to give the gavel to the vice chairman Mr. Stearns, and I will return.

STATEMENT OF HON. KEVIN PHILLIPS, MAYOR, CITY OF CALIENTE, NEVADA

Mr. PHILLIPS. Mr. Chairman and members of the subcommittee, it is an honor for me to be here. My name is Kevin Phillips. I am the mayor of the city of Caliente, Nevada. May I comment that I would be the first to recognize at that table that I am the smallest of the smallest hubcaps surrounded by big wheels, but it is an honor for me to come and speak before you, and I consider myself somewhat uniquely qualified to address this body and let me say why.

First, I represent a very local government perspective relative to this issue, particularly out of rural Nevada. My colleagues and fel-

low Nevadans have amply expressed the position of the State relative to this issue, but mine is from a local government perspective.

We find today that that which was talked about in 1986 in the draft environmental assessment is still true, that the Union Pacific Railroad will in all likelihood be the main transportation corridor, if you will, for the transport of spent fuel to the Nevada test site in Yucca Mountain. My city sits at the very apex of that funnel.

The second reason is that we have independently become highly educated over this issue. The Congress has provided for us funding through the Nuclear Waste Policy Act because we are one of 10 units of local government to independently study all things related to this issue, and I have made that a serious quest over the past 5 years. We have examined all sides of the matter, all that is given from the State of Nevada Nuclear Waste Project Office, from the Department of Energy, and from our own analyses, and so we come to you, I do, as an independent person brought up to speed on this issue.

Third, I really am apolitical. Out where I live, we all take turns serving in various positions, and we consider ourselves public servants and not politicians. Meaning no disrespect, a politician is one who seeks to do whatever is necessary to become reelected. A public servant tries like crazy so that that does not happen again.

Our approach to this issue really is quite simple. We believe, and have for some time, that despite the best efforts of the State of Nevada, ultimately the will of the Nation will build a repository at Yucca Mountain, Nevada, and that will become the final resting place for spent fuel and high-level radioactive waste.

To us the situation is quite simple. If our delegation succeeds in its efforts to stop the construction of Yucca Mountain, we in Caliente and Lincoln County have nothing to worry about because we will not see the shipments. But if they do not, and to us the writing on the wall and, so to speak, the Indians on the horizons—I used to enjoy those old Western movies—looks quite ominous, and it appears that the odds are being stacked and are mounting in that effort. Therefore, we say to ourselves, what is the best thing that we can do to be prepared?

You see, if our delegation succeeds, we will merely sit back in sleepy Caliente and continue to watch the trains go through our town already carrying over 25,000 shipments per year of hazardous materials; that if one becomes absolutely honest and takes a look at that real risk, not the perceived risk, associated with that transport, the materials that already provide potential risk to us are exponentially greater than that which the transport of spent fuel would provide to us.

So again, our whole purpose here is to ensure that we as small communities, the little hubcaps that are the closest to the road that have to dodge the real rocks in the road, those who don't have the liberty to be 500 miles away in our State's capital, nor thousands of miles away in the Nation's capital, we are facing the real issues.

And so with that in mind, we have worked for 12 years to become prepared. Our committee has seen the preparation of over 50 technical reports, and we know from where we speak on this issue.

We were asked specifically to comment about the viability assessment. In our judgment, it is just one more indicator that the time

will come when Yucca Mountain becomes developed. Therefore we would hope and would wish that our State would prepare with at least a contingency plan.

It is interesting that Congresswoman Berkley, who resides in Las Vegas, is new, and she doesn't perhaps recognize or remember that in 1995 former Senator Bennett Johnston laid the first bill down in this whole series of things. That bill if successful would have actually brought material to the Las Vegas Valley. Now if we hadn't perhaps stepped forward and suggested some alternative solutions, namely to stop the train in Caliente and offload there and follow, frankly, Mr. Bob Loux's suggestion from the Nevada Nuclear Waste Project Office that from some corridor east of Nevada from the Union Pacific Railroad we go directly to Yucca Mountain, thus bypassing the Las Vegas Valley, now if we perhaps hadn't come forward or had been willing or made that suggestion, then maybe the legislation would still be sending the material to Las Vegas.

I hear the bell. I will conclude.

[The prepared statement of Hon. Kevin Phillips follows:]

PREPARED STATEMENT OF HON. KEVIN PHILLIPS, MAYOR, CITY OF CALIENTE, NEVADA

Mr. Chairman, my name is Kevin Phillips. I am mayor of the City of Caliente, Nevada. Thank you for inviting me to share a Nevada local government perspective on the Yucca mountain project and key aspects of HR 45. The positions, which have been adopted by Lincoln County and the City of Caliente, have not always appeared politically correct, especially in my home State of Nevada. My fellow local elected officials and I have for some time been convinced that despite the best efforts of the State of Nevada, Yucca Mountain would succumb to the will of the Nation and become the final resting-place for spent nuclear and high-level radioactive waste. Given this likelihood, the leadership of Lincoln County and the City of Caliente has sought for the past several years to understand and minimize waste management system risks and to understand and maximize potential waste management economic benefits. Lincoln County voters have, on two occasions now, confirmed to my fellow local elected officials and me that we are approaching the nuclear waste issues in a prudent and responsible manner.

Lincoln County is one of ten units of local government which have been designated by the Secretary of Energy as "affected" pursuant to the Nuclear Waste Policy Act, as amended. What was identified in the 1986 Yucca Mountain environmental assessment remains true today: Lincoln County and the City of Caliente are likely to serve as the gateway for most shipments of high-level radioactive waste entering Nevada which are destined for storage and disposal at the Nevada Test Site. More recently, it has become evident that mutual interests of the State of Nevada and DOE to minimize risks to a majority of Nevada's residents and the economy of southern Nevada will likely shift said risks to residents and businesses of Lincoln and other rural counties. These risk minimization objectives have been translated into proposed federal legislation now pending before Congress. HR 45 would result in construction and operation of a rail to truck intermodal transfer facility within the City of Caliente. The bill would also result in heavy-haul transport through the County until such time as a rail line across Lincoln County were constructed to provide direct rail access to the Yucca Mountain site.

For the past twelve years, Lincoln County and the City of Caliente have conducted a joint repository oversight and impact alleviation-planning program. During this period, the eight-member Joint City/County Impact Alleviation Committee has diligently sought to provide guidance to local repository programs. The Committee, representing both geographic and disciplinary diversity, has met no less than 70 times and has invested over 1,200 hours of largely volunteer labor to understand the implications of the Nation's nuclear waste management program to the County and City. Utilizing funding provided by DOE, the Committee has overseen the preparation of over 50 reports documenting repository system outcomes for Lincoln County and the City of Caliente. Topics addressed within these studies include emergency response, ethnography, transportation routing, economic/demographic impact assessment, media amplification of risks, community development, transportation risk assessment, risk communication, tourism impact assessment, fiscal impact assessment, and risk perception, among others. The numerous research activi-

ties sponsored by the County and City of Caliente have utilized teams of highly trained and competent researchers representing both academic and private entities. The results of these studies have been widely communicated to residents throughout Lincoln County and in other areas of Nevada. Lincoln County and the City of Caliente have utilized this extensive information base in formulating and defending positions taken with regard to the Yucca Mountain repository program to date.

With this thorough understanding of the Yucca Mountain project as background, Lincoln County and the City of Caliente have initiated a review of the Viability Assessment. In my opinion, the Assessment appears to assert the likely suitability of Yucca Mountain as a licensable repository site. The Viability Assessment confirms the County and City contention of the likelihood that Yucca Mountain will be developed and operated as a repository for nuclear waste. Our cursory review of the VA has reaffirmed the wisdom of the County and City focus upon risk minimization and benefit maximization activities.

With regard to nuclear waste legislation pending before this Committee, HR 45 will require that the City of Caliente serve as host to intermodal transfer and other spent nuclear fuel transport operations. The City has responded to requests by this Committee to ensure that HR 45 related risks are minimized and benefits maximized. Inclusion by this Committee of City suggested provisions would result in a radioactive waste management system which is sensitive to local issues. I regret however, that a comprehensive benefits package for the State of Nevada remains a missing element to the bill. When developed and fully operational, the Yucca Mountain project will afford this Nation with nearly immeasurable benefits. In my opinion, Nevada should be afforded a benefits package of extraordinary scale. Rather than being made to feel as though they have been "screwed", Nevada residents should be granted every sense that the Nation places great value on the service that the State and its populous will render in solving the pressing nuclear waste management issue. In addition to important and appropriate benefits included for certain local governments, HR 45 should be amended to include a bold program of benefits for the State of Nevada, perhaps focused at development of science and technology related industry on and around the Nevada Test Site.

I would encourage the Committee to add the following additional finding to Section 3 of the bill:

the State of Nevada, Lincoln County, the City of Caliente, and Nye County are each performing a significant service to the United States in resolving a critical national environmental problem for which the Nation is indebted and for which equitable and just compensation for said service is fully warranted;.

A new sub-section should be added to HR 45, Title I, Section 101 as follows:

OBLIGATIONS OF THE SECRETARY OF DEFENSE.

(a) The Secretary of Defense shall provide a safe secure corridor across the Nellis Range from Lincoln County through Gate 700 onto the Nevada Test Site, for the transportation by rail or truck of spent nuclear fuel and other high-level radioactive waste.

Section 201 of the bill should be amended to remove the requirement that the Secretary of Energy utilize only heavy-haul transportation. Such a requirement may pose unnecessary congestion and vehicular conflicts upon Nevada's highways. Because the State of Nevada might be compelled to permit each and every heavy-haul shipment, use of such vehicles might pose an unnecessary burden upon the State. Further, emphasis upon heavy-haul fails to recognize that innumerable shipments of spent nuclear fuel have been successfully completed using existing legal weight cask technology.

Section 201 (h) of the bill should be revised to include training and equipping of local emergency first responders and hospital staff in the City of Caliente.

Section 203 of the bill should be amended to include a requirement that the Secretary of Energy use results of the DOE's Motor Carrier Evaluation Program as one factor in selecting transporters of spent nuclear fuel and other high-level radioactive waste. Lincoln County and the City of Caliente believe that effective risk minimization is only possible when DOE utilizes the best of the best motor carriers. In addition, the Secretary should be required to ensure that selected motor carriers have in place effective driver and operations team training and quality assurance programs.

HR 45 should include an amendment to Section 114 of the Nuclear Waste Policy Act, which would require inclusion of the comments of affected units of local government, in any site recommendation report submitted by the Secretary to the President.

Let me close by encouraging the Committee to recall what I and my fellow local elected officials have been through these past few years. As a result of our belief

that the Nation was committed to disposal of spent nuclear in Nevada we adopted Joint Resolution 2-95 which provided specific recommendations to the Secretary of Energy. In response to our passage of the resolution, the Nevada Attorney General filed a lawsuit to remove the entire Caliente City Council and two Lincoln County Commissioners from office. After being censored by the Nevada Legislature and facing a stiff legal defense by the County and City, the Attorney General dropped her lawsuits. One of the Commissioners whom the Attorney General sought to remove from office subsequently survived a recall vote by an overwhelming margin.

My fellow local elected representatives and I have paid a heavy financial and emotional price to defend our fiduciary responsibility and right to work with the Secretary of Energy and the Congress to ensure that as legislation such as HR 45 is considered, the public health, safety, and welfare of our residents is protected and enhanced. I trust you will take seriously our recommendations for further amendment of HR 45.

Mr. STEARNS [presiding]. Well, Mr. Mayor, we thank you for your testimony. I think I am going to ask maybe just one question, sort of hypothetical for the delegation, and you really don't have to answer it because it is hypothetical. If, in fact, that all the scientific evidence comes out and it appears that it is a safe site, and I know we can't assume that everything is 100 percent with scientific evidence, but let's say there is a preponderance of evidence to show that from the scientific evidence, that indeed the repository at Yucca Mountain would be safe, would you still be objecting to this bill H.R. 45? Is your case basically on scientific evidence? Because the next case would be in terms of tourism, because the potential impact of having the site there affects the tourist economy is some of the arguments we hear. But we have had nuclear tests at the Nevada test site, and obviously it hasn't hurt tourism, and it hasn't hurt the population, and so whether it is scientific evidence or whether it is the perception to the tourist industry, both those arguments are being made.

So I guess the question, Governor, is hypothetically whether, you know, your case is still strong if the scientific evidence is overwhelming. And if you want to do this in a written statement, I can understand, because this is a hypothetical.

Mr. GUINN. Can I tell you one thing? I have been Governor now for something like 32 days. One thing I have learned is not to try to answer hypothetical questions.

I would say to you we are still looking for scientific data, and so far, after $6 billion and the fact that the Federal Government through the Department of Energy cutoff all of our funds over a year ago for us to even look at what they had in a scientific fashion has left us kind of standing on our own. So we would like to see scientific data that we could analyze, and we are not getting that opportunity at this time.

So I would be happy to answer for you in a written form with more details to how it would affect us, but certainly the people of Nevada, we are not convinced over the last 12 plus years of high-level, intensive work that has gone on. Plus, over the last 20 years since this bill has been discussed and talked about in the State of Nevada, we are not convinced that it is safe for us as Nevadans, and we don't think it is safe traveling through at the level we are talking about.

The mayor and I are certainly coming from two different angles here, there is no doubt about it, but in my position for the State of Nevada, we are not ready to accept anything we have seen so

far, and especially in light of the fact that it seems very suspicious that we had our funds cut off.

Mr. STEARNS. Mr. Mayor, I want to ask you, since you have sort of an opinion that is a little different than the Governor, do you think, in your opinion, and this, again, you might not have enough information, do the people in your town or the people that you are dealing with have more of a sympathy to your point of view? I guess what I am asking is what do you see the people of the State feeling? What is your sense?

Mr. PHILLIPS. With due respect, may I comment briefly and let the Governor know that I am with him in the comments he made here certainly. Nevada deserves very much to do oversight and have funding from the Federal Government for that to happen. It is our position and belief after observing this thing that that oversight cannot be politically based, and that which has happened in the past. I strongly suggest that Nevada be granted oversight funds, but that it come through the university system so we do get science and not politics involved with the issue.

In response now to your direct question to me, Mr. Chairman, we are fortunate in Lincoln County in that we have 4,000 people there. The task of educating those 4,000 is much simpler. Therefore, we have made great efforts to bring our people up to speed. A vote reflected in the last election on this issue, an advisory vote, was overwhelmingly in favor of us continuing the position which we take, which is to understand and minimize risk, understand and see that mitigation occurs, and understand and maximize benefits associated to that.

Mr. GUINN. And I would say, Mr. Chairman, that the mayor is talking about a specific location, local community, and in looking at the indication of all of our people, which is something like 78 percent are absolutely vehemently against storage at Yucca Mountain of high-level waste, 78 plus percent of our people overall, it has been very consistent, it is going up. It has gained about 12 or 15 points in the last few years, and I would say to you that that is not going to change.

We still believe very strongly that there are alternative methods. We think that when you can store something that is being produced at a specific location for a hundred years and that has been declared safe by the science that we have seen through methods that we already have, then we believe that additional research as to what to do with this material will be developed through this great country of ours in a shorter period of time than that.

Mr. STEARNS. Well, I am going to conclude and just make an observation. Mayor Phillips has pointed out, though, that the actual town where the depository will be transferred from the train to the trucks, these people seem to have an understanding that ultimately it is going to happen. Two, they are sort of sympathetic to what we are trying to do and seem to be fairly well-educated on the issue. Now, the 78 percent figure you used, I don't know whether these people have as much education, but the people who are directly impacted seem to have a sympathy.

So what I am saying is obviously we are going to try and work with you and others, but there seems to be a difference of opinion,

and it seems like the town is a lot closer to it. That is just an observation, and I am not challenging it.

Mr. GUINN. That case would be the case for the people in Caliente, but you must remember not all of this waste could be shipped to Yucca Mountain only through Caliente. All of California and the northern part of the area would come through the valley we are talking about. I would say there is certainly some difference there, but not for the majority of our people and the masses of our people.

We have been educated quite well. There are newspaper articles every day. There are statements every day by the various people, so our people are fairly well-educated in this area and know what they want.

Mr. STEARNS. Staff has asked me to do this, and I am very happy to do it, that the reason the money was cut off was because of abuses, perceived abuses, and we would like to make part of the record some of the Department of Energy statement of September 9, 1998, where it talks about why they froze the money and so forth, and it is presented here, and so without—and the GAO report on the Nevada's use of nuclear waste grant funds, and with unanimous consent I will make this part of the record, too.

[The information referred to follows:]

DEPARTMENT OF ENERGY
WASHINGTON, DC
September 9, 1998

Mr. ROBERT R. LOUX, Executive Director
Agency for Nuclear Projects
Nuclear Waste Project Office
Carson City, Nevada 89710

DEAR MR. LOUX: I am writing to you in response to your June 22, 1998 letter to Eric J. Fygi, then Acting General Counsel, transmitting the State of Nevada's comments addressing the findings contained in the KPMG Peat Marwick report "Nevada's Use of Nuclear Waste Funds Between May 1992 and September 1995."

In Mr. Fygi's June 11, 1998 letter to you transmitting the Peat Marwick report, he provided you with a final opportunity to provide any documentation you may have demonstrating that any portion of the challenged expenditures was for statutorily authorized purposes. While you have provided information regarding your interpretation of the legal authorities and principles involved, no further documentation has been provided. Furthermore, Peat Marwick has reviewed the State's comments and determined that no new information has been provided that would cause Peat Marwick to revise its report or any of its findings. (A copy of this Peat Marwick report is enclosed.) Therefore, as we have previously indicated, the Department will take steps to reallocate the $691,835 presently frozen in the account that the Department had maintained for the State as a means of recouping the funds Peat Marwick concluded were not shown to have been spent for statutorily authorized purposes.

In your June 22, 1998 letter, you comment on the Department's guidelines on spending restrictions that were prepared, consistent with the recommendation of the General Accounting Office in its 1996 report, for use in Peat Marwick's audit of Nevada's use of federal funds between May 1992 and September 1995. You state that much, if not all, of the confusion reflected in the 1996 General Accounting Office report and the 1998 Peat Marwick report could have been avoided if the Department had provided the State with its interpretation of the funding restrictions. You also state that the guidelines misinterpret the States's role and prerogatives under the Nuclear Waste Policy Act and seek to inappropriately constrain the State's use of federal funds. We believe the guidelines are simply a restatement of the statutory restrictions, consistent with the interpretation outlined in the 1996 GAO report and endorsed by Peat Marwick in its most recent report. We recognize. and endorse the important role the State is granted in the Nuclear Waste Policy Act to participate in the Civilian Radioactive Waste Program. However, use of federal funds to perform that role must be consistent with any applicable statutory restrictions. To

avoid any possible confusion in the future, we will provide such guidelines at the time Congress appropriates funds for the State oversight function.

Sincerely,

MARY ANNE SULLIVAN
General Counsel

Enclosure

[The GAO Report, GAO/RCED-96-72, is retained in subcommittee files.]

Mr. GUINN. That is true. I am a new Governor. We have new people, and what we need is we need to have rules set forth.

Mr. STEARNS. Have you seen this report?

Mr. GUINN. No, I haven't. I have been briefed on it. I would be happy to go back and read it in great detail. I assure you that the issue I am familiar with there is a rule was made after we had spent some money through the grant that indicated we were not supposed to use any expenditures for outside the State. And what happened is we were talking to people in Salt Lake and other places about transportation, and that was a new rule set forth, and I think that could be corrected if that is the specific rule, but we still need money for the scientific analysis. We are a small State, and we just cannot compete without that money to be able to look at the data, and so far we don't feel comfortable with the data we are looking at just from our own scientific people we have in State.

Mr. STEARNS. Thank you, Governor. I now turn over the microphone for questions to the ranking member Mr. Hall.

Mr. HALL. Thank you, Mr. Chairman.

And Governor, thank you and the mayor for your input. You are doing exactly what I would be doing if I were Governor and mayor of the area.

A lot of us find ourselves in the position of admiring very much the opposition, but needing the legislation. I am original cosponsor on 45 back in 1982, and I would say that we are here today because you have sent very able and very capable Members to the House and to the Senate that have represented you well. They have been men that we had and women that we had such high regard for. Mr. Gibbons, we have debated this with him before, and he is very knowledgeable. He is a gentleman. He is highly admired and respected here. That is probably one reason we are still here. We might well have already passed this thing through, and you would be more concerned about doing it safely, as the mayor has suggested here, than having it actually come to pass. So I respect you, and you have done a good job with your presentation here today.

You represent a beautiful city that I have visited many times. I have been going out there ever since an entrepreneur named his project The Flamingo. It was a long, long time. I heard the chant, "Nine's a line, a front's away and the back to pay," and sometimes didn't like it, but I thank you for your time here, and I thank these Members of the Congress who are representing you well.

I guess I have a question of Mr. Phillips, the mayor, who I think—I admire what you are trying to do for your people also and the way you are trying to do it. I guess we would be very interested in doing the repository properly in a way that safeguards folks along the line and those that live closer to the site than most of us ever will. So I guess it is only fair to those of us who are asking

your State to shoulder the burden to listen to your request and try to consider your concerns. So do you feel that the Energy Department is doing this? Are they listening to you? Do you get audience there?

We don't have the Chairman of Energy here today, but we are going to have him here a little bit later. It is my recollection that the President sometime back said as Secretary he would have full authority to carry out his mission in this area. Considering that fact, that Secretary Richardson has been given this authority, along with the fact that he is one of the former colleagues of this committee, I do look forward to hearing him testify here, and we don't really want to pass a bill that the President is just going to veto and then we have to go into the override procedure. We would really like to pass a bill, if it is going to be a bill and it is going to pass and it is a good bill, that perhaps, no pun intended, that you can live with. I don't—I wouldn't like to think that it was a sense of death. I wouldn't vote for it in a minute if I thought that.

So, Mayor, do you feel like your concerns are being considered, and those that aid you and advise you that are more technically inclined than you or me or the Governor might be, that they are being considered?

Mr. PHILLIPS. Secretary Richardson has been very gracious, come to Nevada two times recently, even held a meeting with some of us little local people and some county commissioners and myself, and we appreciate that we have a very good dialog with Mr. Barrett.

Our issue here is one of transportation. In our circumstance and situation, if there is a weakness in the Department of Energy's program from our perspective, it is that there is no work being done presently to prepare for the transportation issue. It took 20 years to develop the detailed transportation plans for the WIPP facility in New Mexico, and yet at the present time there is not any work being done on that transportation issue. That I see as a weakness that should be corrected.

Mr. HALL. Governor, do you have anything to add to that?

Mr. GUINN.No.

Mr. HALL. I will yield back my time, and we will get on to the other.

Mr. BARTON. The Chair would recognize the gentleman from Ohio Mr. Sawyer for 5 minutes.

Mr. SAWYER. Mr. Chairman, I am not going to take advantage of that opportunity to question. I simply want to thank both the Governor and the mayor. As a former mayor myself, I fully appreciate the central mission that you have and the discomfort that you express on behalf of the citizens both of your community and your State. I am grateful for your time here, and we will pay close attention to your thoughtful comments.

Mr. BARTON. The Chair then would recognize Mr. Wynn for 5 minutes for questions if he so wishes.

Mr. WYNN. Thank you, Mr. Chairman. I, too, would defer questions at this time, but I certainly would look forward to working with the Governor and the mayor because I realize this is a serious issue, and your point regarding transportation is certainly well taken. Hopefully we can work out a suitable resolution.

Mr. BARTON. The Chair would—has Mr. Shimkus been recognized for questions? The Chair would recognize Mr. Shimkus for 5 minutes.

Mr. SHIMKUS. I have no questions.

Mr. BARTON. The Chair would recognize himself for 5 minutes. I won't take the complete 5 minutes.

Governor, it is my understanding that while I was away voting, that you in either response to a question or statement you made, that you expressed some concern about being able to use the Federal resources that are available in the Nuclear Waste Policy Act in terms of monitoring the site development and the safety.

I can assure you that as the former subcommittee chairman of the Oversight and Investigation Subcommittee, I shared those concerns, and at my request we had several studies done and audits done by the Department and the General Accounting Office, and it was determined that the previous Governor and the executive director for the Agency of Nuclear Projects in Nevada, Mr. Robert Loux, were misallocating the vast majority of the funds that they had available, and that is the reason about $700,000 had to be frozen.

I can assure you that so long as under your leadership and the excellent work of the Congressmen and Senators you use those funds for what the law said they could be used for, there will be no problem.

Mr. GUINN.We have talked to Secretary Richardson, and he has indicated he does have it back in his budget, the $5.4 million or so, and we are now funding it ourselves, but, again, I think the indication that we have and the fact that we have had the audit gives us much more direction, and I assure you that that is exactly what would be followed.

Mr. BARTON. You are the Governor of the State, and this is an important issue in your State. And we understand, I think, from both sides of the aisle that no matter where the repository, the interim storage, is sited, the people near that are going to have legitimate concerns about the safety of it, and the transportation to and from it, and the operation of it, and the life cycle and all of the things that you raise in your testimony. And the Nuclear Waste Policy Act did provide some funds for the Federal Government to give to the State to address those concerns, and those funds will be available, and they will be under your leadership allowed to be used, and I think in a way that your citizens are going to feel very comfortable that their concerns are being addressed.

Mr. GUINN.Thank you very much, Mr. Chairman.

Mr. BARTON. Does Mr. Largent wish—the Chair would yield back the balance of his time. Does the gentleman from Oklahoma wish 5 minutes for questions?

Mr. LARGENT. No, sir.

Mr. BARTON. Does the gentleman from Mississippi Mr. Pickering wish 5 minutes for questioning?

Mr. PICKERING. No.

Mr. BARTON. Is Mr. Strickland, does he——

Mr. STRICKLAND. No, sir.

Mr. HALL. Hurry up before Markey gets here.

Mr. BARTON. We will take the wise counsel of the gentleman from Texas. We are going to excuse this panel. There will be written questions for the record, and we will also allow written questions for Mr. Gibbons, Ms. Berkley, and our two Senators who could not be here because of business in the Senate. Thank you, Governor, and thank you, Mayor.We would like to call forward our next panel. We have the distinguished pleasure to have the entire National Regulatory Commission with us today. We have the Honorable Shirley Ann Jackson, who is the Chairwoman of the Nuclear Regulatory Commission, and she is accompanied by Commissioner Greta Dicus, Commissioner Nils Diaz, Commissioner Edwin McGaffigan, and Commissioner Jeffrey Merrified. On behalf of the Department of Energy, we have Mr. Lake Barrett, who is the acting Director of the Office of Civilian Radioactive Waste. We have Mr. Jared Cohon, who is the Chairman of the Nuclear Waste Technical Review Board. We have the Honorable Robert Perciasepe, who is the Assistant Administrator for Air and Radiation of the Environmental Protection Agency, and we have Mr. Stuart Schiffer, who is the Deputy Assistant Attorney General for the Commercial Litigation Branch of the Civil Division of the U.S. Department of Justice. I hope we have enough chairs so we can get everybody at the witness table. We welcome each of you ladies and gentlemen to our hearing.

It is my understanding, Chairwoman Jackson, that you are going to speak for the Nuclear Regulatory Commission, and none of the other commissioners wish to give a statement. Is that correct? We will recognize you. Your entire statement is in the record in its entirety, and we will recognize you for 5 minutes to summarize it.

STATEMENTS OF HON. SHIRLEY ANN JACKSON, CHAIRMAN, NUCLEAR REGULATORY COMMISSION, ACCOMPANIED BY GRETA DICUS, COMMISSIONER; NILS DIAZ, COMMISSIONER; EDWARD McGAFFIGAN, COMMISSIONER; AND JEFFREY MERRIFIED, COMMISSIONER; LAKE H. BARRETT, ACTING DIRECTOR, OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT, DEPARTMENT OF ENERGY; JARED L. COHON, CHAIRMAN, NUCLEAR WASTE TECHNICAL REVIEW BOARD; ROBERT PERCIASEPE, ASSISTANT ADMINISTRATOR FOR AIR AND RADIATION, ENVIRONMENTAL PROTECTION AGENCY; AND STUART E. SCHIFFER, DEPUTY ASSISTANT ATTORNEY GENERAL, COMMERCIAL LITIGATION BRANCH, CIVIL DIVISION, DEPARTMENT OF JUSTICE

Ms. JACKSON. Mr. Chairman and members of the subcommittee, thank you for this opportunity to present the views of the U.S. Nuclear Regulatory Commission, the NRC, regarding the U.S. program for management and disposal of high-level radioactive waste and spent nuclear fuel. I will discuss briefly——

Mr. BARTON. Will the gentlelady suspend. We would like order in the hearing room so we can hear the distinguished Chairwoman. I know it is crowded, and with the lights on it is probably warmer than it should be, but we need to give her courtesy so that members of the subcommittee can hear her testimony.

Ms. JACKSON. I will discuss briefly our observations on the progress of the DOE program to characterize the Yucca Mountain

site of the potential geologic repository including the recently released viability assessment, our general views on the Yucca Mountain standards prepared by the Environmental Protection Agency, and our position on H.R. 45, the Nuclear Waste Policy Act of 1999.

We continue to progress in meeting NRC obligations that relate to licensing of a geologic repository under existing law. This includes developing the regulatory framework for licensing and the prelicensing consultation with the DOE and other stakeholders. The NRC staff has concentrated on a thorough review of key technical issues, preparing reports that ultimately will form the basis for our Yucca Mountain review plan.

Most recently the NRC staff has been reviewing the December 1998 DOE viability assessment with a focus on highlighting any major concerns with the DOE test plans, design concepts, or total system performance assessment, concerns that might result in an incomplete or unacceptable license application.

The NRC will receive the—the Commission will receive the NRC staff comments on the viability assessment in March. To date, the NRC staff has not identified any major concerns with many aspects of the viability assessment. However, we agree with the DOE that its quality assurance program needs to improve.

We have a chart, and as you can see on it, the NRC High-Level Waste Regulatory Program remains on schedule in preparing to review a license application from the DOE in 2002. The NRC has cooperated with the EPA in its development of Yucca Mountain standards. We understand that the EPA may soon move forward with interagency review of the draft standards. The NRC plans to review the draft standards when they become available to determine whether they raise any implementation issues.

In order to meet the time constraints and to provide the public early notice and opportunity for involvement, we developed our implementing regulations in parallel with the EPA efforts. The Commission recently approved publishing for public comment our proposed rule, 10 CFR Part 63, to implement the EPA Yucca Mountain standards. This proposed rule includes an individual dose limit of 25 millirem per year for the expected dose to the average member of the group that receives the greatest exposure, a standard that we believe would protect public health and safety and is consistent with national and international recommendations for radiation protection.

As our proposed rule makes clear, the NRC will amend these regulations, if needed, to conform to the final EPA standards or to any new legislation that may be enacted.

The Commission believes that the proposed legislation, H.R. 45, contains the basic elements of an effective framework for safe management and disposition of high-level radioactive waste providing an integrated spent fuel management system—onsite storage, centralized interim storage, and deep geologic disposal, with a transportation system to link these elements. In our written testimony, we have included several suggestions and comments that we believe would enhance the proposed legislation.

In summary, the Commission believes that, whether under existing law or in a revised legislative framework, the U.S. High-Level Radioactive Waste Program needs both statutory and institutional

stability in order to proceed in an orderly, efficient, timely, and effective fashion. We believe that H.R. 45, when coupled with sufficient resources to make progress in all phases, can provide this needed stability.

Thank you for this opportunity to present our views. We would be happy to answer any questions that you may have.

[The prepared statement of Hon. Shirley Ann Jackson follows:]

PREPARED STATEMENT OF HON. SHIRLEY ANN JACKSON, CHAIRMAN, NUCLEAR REGULATORY COMMISSION

OVERVIEW

Mr. Chairman, members of the Subcommittee, the Nuclear Regulatory Commission (NRC) is pleased to testify regarding the U.S. program for management and disposal of high-level radioactive waste and spent nuclear fuel. I also welcome the opportunity to discuss our observations on the progress of the Department of Energy (DOE) program to characterize the Yucca Mountain Site as a potential geological repository, including the recently-released viability assessment, and to present the Commission views on H.R. 45, the "Nuclear Waste Policy Act of 1999." I also will address the NRC efforts to establish site-specific licensing requirements for the proposed repository, and our general views on the Yucca Mountain standards prepared by the Environmental Protection Agency (EPA).

The NRC continues to make progress under the Nuclear Waste Policy Act (NWPA) and the Nuclear Waste Policy Amendments Act (NWPAA). We are meeting our current obligations to provide a regulatory framework for the licensing of a geologic repository and to consult with the DOE and other stakeholders in advance of the license application. As part of our overall pre-licensing strategy, we are concentrating our review on those key technical issues that are most important to repository performance and, therefore, to licensing. Since we refocused and streamlined our program in Fiscal Year 1996, I can report that the NRC staff has progressed, completing substantive reports on the status of resolution, at the staff level, of each of the key technical issues. These reports ultimately will form the basis for the Yucca Mountain review plan that will be used to guide our review of a license application.

VIABILITY ASSESSMENT

I will begin by discussing the status of the NRC review of the DOE December 1998 Viability Assessment (VA). We received the VA in late December, and review by the NRC staff is continuing. The Commission expects to receive the results of the NRC staff review in mid-March. The principal objectives of the NRC review are to assess the DOE program in preparing a high-quality license application, to highlight significant information deficiencies, and to identify any major concerns with the DOE test plans, design concepts, or total system performance assessment. We define "major concerns" as ones that might result in an incomplete or unacceptable license application.

These objectives are consistent with NRC responsibilities for preliminary consultation under the NWPA. I am pleased to report that the NRC staff has identified no major concerns with many important aspects of the VA. We believe this can be attributed, in part, to the frequent, open interactions the NRC staff has maintained with the DOE over the past year in preparing the VA. During these public interactions, the DOE has furnished substantial information to our staff in advance of the VA release, which has facilitated our review. We are confident that the DOE recognizes many of the areas where additional work is needed prior to licensing. However, the NRC staff is identifying some specific issues during its review, which the staff will present to the Commission in March 1999.

For example, we expect to highlight the increased attention the DOE must give to the implementation of its Quality Assurance (QA) program for Yucca Mountain. As part of our continuing pre-licensing interactions, the NRC staff has identified persistent QA deficiencies in the DOE program. While most of the issues were first brought to light by the DOE itself, the DOE needs to be more effective in preventing and resolving these problems in a timely manner. We understand that DOE management agrees with the need for improving the QA program and is moving aggressively to make the necessary upgrades prior to submitting its license application. The DOE recently briefed the NRC staff (December 9, 1998) on its plans for corrective action, and plans to meet with the NRC in April 1999 to present their results.

In response, the NRC has formed a team to determine whether the DOE has identified the problems adequately and implemented the needed corrective actions.

We are encouraged by the clear improvements in the overall DOE program, including planning, focusing on a "safety case" for licensing, and communicating with the NRC. However, it is important to emphasize that the ultimate responsibility rests with the DOE for demonstrating that licensing requirements are met to protect public health and safety and the environment. The Commission independently must assess and find "with reasonable assurance" that such demonstration has been made prior to licensing the repository. Among other things, the timely NRC review of a potential license application, consistent with the schedules laid out in the VA, depends on receipt of a high-quality license application from the DOE, a scientifically based and demonstrable standard on dose limits, and sufficient resources for the NRC to maintain its independent technical review capability.

The NRC HLW program remains on schedule consistent with our responsibilities under the Nuclear Waste Policy Act of 1982, as amended, and the Energy Policy Act of 1992. We are developing the regulatory framework and review criteria to prepare ourselves to review a repository license application from the DOE in 2002. We expect to comment on the DOE draft Environmental Impact Statement (EIS) for a proposed Yucca Mountain repository late this Fiscal Year, and to provide comments on the proposed EIS at the time of the site recommendation in Fiscal Year 2001. Through early NRC staff identification and resolution of key technical issues for repository licensing, we are preparing to complete our review of the DOE license application in three years. We also have recently completed rulemaking to establish a Licensing Support Network, using web-based technology, to facilitate access to supporting documents to expedite the review of the license application.

DRAFT PROPOSED EPA STANDARDS

Let me turn now to your second area of interest, the Environmental Protection Agency (EPA) efforts to develop radiation standards for the repository. The EPA is obligated, under the Energy Policy Act of 1992, to issue final health-based standards for Yucca Mountain that are based on, and consistent with, the recommendations and findings of the National Academy of Sciences (NAS). The NAS reported its findings to the EPA on August 1, 1995. The Commission, under the same Act, must modify, if needed, its technical criteria to be consistent with the final EPA standards within a year of their issuance.

The Commission is aware of continued efforts by the EPA over the last two years to develop radiation standards for Yucca Mountain. To facilitate this process, the NRC and EPA staffs have held several meetings for the exchange of information. The Commission also is aware of recent discussions between the EPA and the DOE, to which the NRC is not always privy, that may have resulted in revisions to the current EPA approach. The EPA and DOE staffs have advised the NRC staff that the EPA soon may move forward with interagency review of the draft standards. The NRC plans to review these draft standards when they become available to determine whether they raise any implementation issues.

Because we anticipate that we will have only a very short period in which to issue final implementing regulations once the final EPA standards are issued, the Commission initiated its own rulemaking in parallel with the development of the EPA standards. The NRC staff provided the Commission a draft proposed rule last October, which the Commission released to the public concurrent with the Commission review. The Commission recently approved publication of proposed regulations at 10 CFR Part 63 with some minor modifications. In fact, the proposed rule is expected to be published for public comments soon. We believe that we have an obligation to make public now our intended approach for implementing the health-based standards called for by the Congress, in order for the DOE to begin preparing a license application, and to allow for timely and meaningful public involvement in the development of our implementing regulations.

Our proposed regulations include an individual dose limit, which we believe is generally consistent with the requirements of Section 801 of the Energy Policy Act and with the recommendations of the National Academy of Sciences. We propose an all-pathways standard of 25 millirem per year expected dose to the average member of the group which receives the greatest exposure, the so called "critical group." We believe such a standard is protective of public health and safety and the environment. It also is consistent with standards for other waste management facilities licensed by the NRC, and with national and international recommendations for radiation protection. As our proposed rule makes clear, the NRC will amend its regulations in the proposed 10 CFR Part 63, if needed, to conform to the final EPA standards, or to any new legislation that may be enacted.

H.R. 45

Finally, I will offer our views on the proposed legislation, H.R. 45, the subject of the hearing this morning. In general, the Commission agrees with the fundamental approach taken in H.R. 45. This Bill contains the basic elements of an integrated system for the management and disposal of high-level radioactive waste that is necessary for the protection of the public health and safety, the environment, and the common defense and security. These elements include central interim storage and deep geologic disposal, together with a transportation program linking the elements together. Moreover, H.R. 45 recognizes that the overall, long-term success of the national program to manage spent fuel and other high-level radioactive waste requires a permanent disposal solution.

As an interim measure, the NRC considers available technologies for wet and dry storage of spent fuel at reactor sites to be safe, but we view dry storage as the preferred method for supplementary storage of spent fuel at operating plants. Continued at-reactor storage, for an interim period, will continue to protect public health and safety. However, we believe that centralized interim storage of spent fuel in dry cask storage systems offers several beneficial features. A centralized interim storage facility, when compared with dispersed storage at about 75 sites across the country, would allow for more focused inspection and surveillance by both the DOE and the NRC. In addition, such a facility would be more efficient (especially at permanently shut-down facilities), and would afford operational and programmatic benefits for the DOE program for accepting waste from utilities. However, as the regulator of such a facility, the NRC takes no position as to where a centralized facility should be located. For any proposed site, the Commission must make the appropriate safety, security and environmental findings before issuing the license.

Section 204 of H.R. 45 establishes a two-phased licensing process for an interim storage facility. In the first phase, the DOE is required to submit an application for a twenty-year license for a facility with a capacity of not more than 10,000 metric tons of uranium (MTU) within 12 months of enactment of the Act. The draft legislation provides that the Commission may accept or reject this application within 36 months. In the second phase, the DOE will submit an application for a license with an initial term of 100 years, which would be renewable for additional terms, and have a capacity of 40,000 MTU. The DOE would be allowed to commence construction as soon as it submits its first application; however, the NRC may suspend construction if it determines that there is unreasonable risk to the public health and safety.

If the initial license were granted, an effective way to implement the second phase would be to amend the original license to accommodate an increase in capacity. I hasten to add that the NRC regulations currently allow site-specific interim storage license terms for 20 years, which may be renewed for another 20 years. The NRC regulations would need to be revised to permit a 100-year license. The NRC staff has begun only recently to evaluate the technical considerations associated with licensing of dry cask storage systems and facilities for a period of 20 to 100 years. We have not identified any safety or environmental issues that would preclude issuance of a license for 100 years. However, given the information available at this time, we have not yet determined that 100 years should be established as the license term for an above-ground, centralized interim storage facility. Whatever the specified term for second phase, from an NRC perspective, an effective way to implement the second phase would be to amend the original license to accommodate an increase in capacity.

As you may know, the NRC currently is reviewing the DOE May 1997 topical report for a non-site-specific centralized interim storage facility. The NRC staff expects to complete its review by October 1999. The NRC Assessment Report will provide an early indication of the acceptability and feasibility of the DOE approach to centralized interim storage, which should be useful to the DOE prior to its submission of a license application.

H.R. 45 also recognizes the importance of the integrated transportation of spent fuel and high-level waste in the current regulatory system. The NRC supports the requirement that NRC-certified packages be used for these activities. To this end, we currently are reviewing six commercial designs for dual-purpose storage/transportation cask systems. By December 2000, we anticipate that all of the storage reviews and two of the transportation reviews should be completed.

We have identified three specific changes to the proposed legislation that should be considered. First, Section 202 would require that the Secretary of Energy use routes that minimize the transportation of spent fuel and high-level radioactive waste through populated areas to the maximum practicable extent, and consistent with Federal requirements governing transportation of hazardous materials. This

provision is not consistent with the route selection requirements for spent fuel shipments not subject to this Act. The U.S. Department of Transportation (DOT) currently has established highway routing rules that apply to spent fuel shipments, and they currently do not require avoidance of populated areas. The routing rules were developed by the DOT after extensive public involvement and have proven successful. In fact, the current DOT rules require the use of the interstate system, an implication that spent fuel shipments may transit populated areas. Further, the avoidance of such routes might increase shipment distance, time, and risk. Therefore, it is not clear that this provision enhances public health and safety.

Section 203 states that "acceptance by the Secretary of any spent nuclear fuel or high-level radioactive waste shall constitute a transfer of title to the Secretary." If the transfer were to take place at the utilities prior to shipment, the material would become DOE-titled material, not NRC-licensed material, at the time of shipment. Under current statute, shipment by the DOE of DOE-titled material is not currently subject to the NRC transportation safety or physical security requirements. Consequently, unless it is explicitly spelled out in H.R. 45, the NRC would have no oversight role of such shipments, including inspection of the shipments for radiological safety, or review and approval of shipment physical security plans. Although the shipments would be subject to the DOT Hazardous Material Regulations, many stakeholders expect that such shipments would be subject to regulation by the NRC. For the NRC to assume this role, H.R. 45 would need to be modified to require NRC oversight of the shipments.

With regard to transportation, we agree with the incorporation of emergency response training requirements in H.R. 45. We believe this mechanism would provide for a more coordinated review and would enhance consensus building. We would look forward to consulting with the DOT and others on the scope and elements for required training.

The Commission strongly supports including in H.R. 45 permanent, deep geologic disposal of spent fuel and high-level radioactive waste as an essential element of the integrated system, described in H.R. 45. The Commission continues to believe that deep underground disposal is a sound and technically feasible solution to the problem of final disposition of spent nuclear fuel and other high-level radioactive wastes. Because the Waste Confidence decision of the Commission is predicated on the eventual availability of disposal in a mined geologic repository, we strongly support the inclusion of Section 204(g). Such a provision would permit the Commission to base its waste confidence determinations not only on the DOE obligation to construct and operate an interim storage facility, but also on its obligation to develop and implement the integrated spent fuel management system, including permanent, deep geologic disposal.

With regard to licensing schedules in H.R. 45, the Commission supports the provision of 36 months for the NRC to review and complete licensing action on an application for an interim storage facility. The Commission also supports the approach taken in section 205(a)(1) to revoke the DOE repository siting guidelines to allow the DOE to focus on developing a high-quality repository license application.

The Commission also supports an effective and efficient public hearing process. The Commission currently is studying the NRC hearing process, including the process that would be used for repository licensing. If, on the basis of this study, the Commission concludes that changes to the hearing process are warranted, we will propose them for adoption in a separate notice and comment rulemaking. In the Part 63 rulemaking, the Commission is not seeking comment on potential changes to the hearing process. However, in the interest of openness, the Commission wishes to say that, at present, we are considering improvements to our hearing process to increase its efficiency and effectiveness.

We believe that the timetables established for licensing of both the interim storage facility and the repository will be adequate, provided:

(1) That the license applications and supporting documentation are submitted in a timely fashion and are of sufficient quality, and
(2) That sufficient resources are provided for the NRC programs to accommodate concurrent pre-licensing and licensing reviews for the two facilities. In order to meet the schedules and milestones described in H.R. 45, the legislation would need to be enacted by June 1999.

With respect to the proposed performance standard for the repository in H.R. 45, the Commission considers 10,000 years to be a sufficient length of time to assess the isolation capability of the system, including contributions from both engineered and natural barriers. The Commission believes that the standard in H.R. 45 of an annual effective dose of 100 mrem (1 mSv) to the average member of the general population in the vicinity of Yucca Mountain is consistent with the protection of public health and safety. The Commission believes that, within the context of imple-

menting the 100 mrem annual dose limit specified in H.R. 45, the NRC has the flexibility to implement the internationally accepted ''average member of the critical group'' approach, using a reference biosphere, as recommended by the National Academy of Sciences, for application to the Yucca Mountain repository. To provide reasonable assurance that the 100 mrem annual limit will be met, the Commission anticipates that the expected value for dose to the average member of the critical group would be restricted to 25 mrem per year (as specified in our proposed 10 CFR Part 63). We understand that H.R. 45 intends to give the Commission the flexibility to adopt this approach.

Further, we support provisions in H.R. 45 on the scope of the National Environmental Policy Act of 1969 (NEPA) responsibilities of the NRC for disposal that, consistent with existing law, direct the NRC to adopt the DOE EIS, to the extent practicable, in the repository licensing proceeding. The Commission also supports the provisions of the bill on specifying the scope of the NRC EIS, requiring the generic consideration of transportation impacts, and identifying the issues that should not be considered by the Commission under NEPA for interim storage. The Commission also recommends that H.R. 45 make clear that the NRC will not be required to prepare an EIS under section 102(2)(C) of NEPA, or any environmental review under subparagraph (E) or (F) of the Act, in connection with the issuance of disposal regulations in Section 205(b). This would be comparable to existing law contained in section 121(c) of the Nuclear Waste Policy Act of 1982.

CONCLUSION

The Commission agrees that H.R. 45 outlines an appropriate program for the permanent disposition of high-level radioactive waste, by providing an integrated spent fuel management system, on-site storage, centralized off-site storage, and deep geologic disposal, with a transportation system to link them. However, the Commission is meeting its obligations under existing law to prepare for licensing a geologic repository. The Commission believes that its proposed Part 63 regulation is an appropriate approach to ensure that the regulatory framework is sufficiently protective of public health and safety and the environment and developed in a timely manner. Whether under the existing law or a revised legislative framework, the U.S. high-level waste program needs both statutory and institutional stability in order to proceed in an orderly, efficient, timely, and effective fashion. The Commission believes that, when coupled with sufficient resources to maintain progress in all phases, H.R. 45 can supply this necessary stability. We appreciate the opportunity to provide our views.

Mr. BARTON. Thank you, Madam Chairwoman.

We would like to now recognize Mr. Lake Barrett, who is the Acting Director of the Office of Civilian and Radioactive Waste, and he is representing the Department of Energy today.

Mr. Barrett, you are recognized for 5 minutes.

STATEMENT OF LAKE H. BARRETT

Mr. BARRETT. Thank you very much, Mr. Chairman and members of the subcommittee. I am pleased to appear before you today to review the technical progress in the Department's civilian radioactive waste management program and to address the interim storage legislation, H.R. 45, introduced by Representatives Upton and Towns. I would like to request that my testimony be included in the record.

Mr. BARTON. Yes, without objection so ordered.

Mr. BARRETT. The administration continues to believe that the Federal Government's long-standing commitment to permanent geologic disposal should remain the basic goal of its high-level radioactive waste management policy. The repository effort is essential not only for the commercial spent fuel disposal, but also to facilitate the cleanup of the nuclear weapons complex, further our international nonproliferation goals, and to support our nuclear Navy's national defense mission.

The Department is committed to fulfill its responsibilities for the permanent disposal of the Nation's spent fuel and the by-products of the Department's post-cold war cleanup efforts in a manner that provides reasonable assurance that the public health and safety and the environment will be adequately protected.

Our policy of permanent geologic disposal of this Nation's waste is also the technical foundation for our international position on nuclear nonproliferation, our commitment to dispose of U.S. fuel being returned from other countries, and our advocacy for eliminating international trade in nuclear weapons materials. The Department has made substantial progress during the last 6 years in fulfilling these responsibilities.

The new interim storage legislation is essentially the same as H.R. 1270 previously passed by the House, which the administration made clear the President would have vetoed. The Secretary opposes H.R. 45 and would recommend to the President that he veto the legislation if Congress passes it in its current form.

I will address the legislation later in my testimony, but I first would like to provide a status report on the repository program.

In December 1998, Secretary Richardson submitted the Viability Assessment of a Repository at Yucca Mountain to the Congress, this committee, and to the President. The viability assessment revealed that no show-stoppers have been identified to date at Yucca Mountain and that the scientific and technical work should proceed at the site. It also identified issues that will need to be addressed before a decision can be made on whether or not Yucca Mountain should be recommended as a site for a national repository. These issues include key natural processes in Yucca Mountain, such as water movement, that would affect the long-term performance of a repository and the waste package designs.

We are preparing comprehensive technical documentation needed to complete the site characterization of Yucca Mountain to support the Secretary's decision whether to recommend the site to the President in 2001. The most challenging aspect of this effort is that we must provide scientific reasonable assurance that the repository at Yucca Mountain will adequately protect the public health and safety and the environment for thousands of years into the future.

Our studies have found that a repository at Yucca Mountain would need to exhibit four key attributes to protect public health and the environment for thousands of years, and the four attributes are limited water contact with waste packages, long waste package lifetime, low release of radionuclides from breached waste packages and the reduction in the concentration of radionuclides as they are transported from breached waste packages.

A reference design was developed for the viability assessment to provide a consistent basis for making and comparing our evaluations. Our design process has and will continue to evolve and consider potential advantages of alternate design features, concepts and options. For example, as we move forward in the licensing process, we are including additional factors into the design selection process.

Now I would like to address waste acceptance litigation issues. As you know, the Department is in litigation over our inability to meet our contractual obligation to accept spent fuel from nuclear

utility companies by January 1998. The Court of Appeals for the District of Columbia Circuit found that the Department has an obligation to commence spent fuel disposal by January 31, 1998. The court denied the utilities' and States' request for a move-fuel order, finding that the standard disposal contract provides a potentially adequate remedy. The court stated the Department may not rely on the unavoidable delays clause to excuse its delay in performance and suggested the avoidable delay clause of the standard contract as a potentially adequate remedy. This clause provides for equitable adjustment of schedules and contract charges to reflect any additional estimated actual cost incurred by the contract holder by our delay.

Also to date, 10 utilities have filed claims for monetary damages in the U.S. Court of Federal Claims. In the first three cases decided by the court, the Department was found to have breached its contract with three utilities, each with only one shutdown reactor, and the Department is now engaged in the discovery process to determine the amount of damages the government must pay to these utilities. Other cases mostly involving utilities with operating reactors are paying ongoing fees to the Department and are currently pending before the court.

Now I would like to turn to H.R. 45. The enactment of H.R. 45 could force the focus of our waste management policy from geologic disposal to a short-term solution by requiring the Department to develop and commence operation of an interim storage facility at the Nevada test site. The bill requires the Department to begin accepting waste no later than June 30, 2003, and provides a defined acceptance schedule for the interim storage of spent fuel in Nevada.

Also the bill would undermine our ability to open a repository as scheduled in 2010 by potentially shifting budget priorities and work effort to the interim storage facility. For example, it implies a delay of our proposed repository construction authorization license application to the Nuclear Regulatory Commission by over a year, with a target date of December 2003.

Based on historical appropriations patterns, the proposed bill's funding provisions do not provide sufficient funding resources to support the simultaneous construction and operation of an interim storage facility and/or a repository program, for which cost estimates have been provided in the viability assessment and its accompanying total system life cycle cost report. If the Department has responsibilities to comply with the interim storage facility and the repository funding provisions and schedules, enactment of the bill could result in a funding gap of substantially over $1 billion.

The program is reaching conclusion of our Yucca Mountain site characterization——

Mr. BARTON. We wish you to reach conclusion also fairly quickly here.

Mr. BARRETT. The viability assessment clarified the remaining work required and illuminated those technical issues that should be addressed prior to determining if the site is suitable for recommendation to the President. We are addressing these issues and commenced work on assembling the information required to support a national decision on geologic disposal at Yucca Mountain.

Let us finish this important task. We are on schedule to complete the draft repository environmental impact statement this summer, a final repository impact statement in 2000, and Yucca Mountain suitability in 2001. With sufficient appropriations, and if the site is suitable, we are also on schedule to submit a license application to the Nuclear Regulatory Commission in 2002 and emplacement of waste in a repository in 2010 if the site is licensed.

We believe H.R. 45 could undermine this progress toward permanent geologic disposal and could weaken the credibility of the regulatory and institutional activities required to ensure adequate protection of the public health, safety, and the environment, thus jeopardizing the Nation's ability to have any solution to our nuclear waste challenge. For these reasons, the administration opposes H.R. 45.

I would be happy to address questions the committee would have.

[The prepared statement of Lake H. Barrett follows:]

PREPARED STATEMENT OF LAKE H. BARRETT, ACTING DIRECTOR, OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT, DEPARTMENT OF ENERGY

INTRODUCTION

Mr. Chairman and members of the Subcommittee, I am pleased to appear before you today to review technical progress in the Department's civilian radioactive waste management program and address the interim storage legislation, H.R. 45, introduced by Representative Upton.

The Administration is committed to resolving the complex and important issue of nuclear waste disposal in a manner consistent with sound science and protection of the public health and safety, and the environment. The Administration continues to believe that the Federal government's longstanding commitment to permanent, geologic disposal should remain the basic goal of its high-level radioactive waste management policy.

The repository effort is essential not only for commercial spent fuel disposal but also to facilitate the cleanup of the nuclear weapons complex, further our nuclear nonproliferation goals, and support our nuclear Navy's national defense mission. The Department is committed to fulfill its responsibilities for the permanent disposal of the Nation's spent fuel and the by-products of the Department's post-Cold War cleanup efforts in a manner that provides reasonable assurance that the public and the environment will be adequately protected. Our policy of permanent geologic disposal of this Nation's waste is also the technical foundation of our international position on nuclear nonproliferation, our commitment to dispose of U.S. fuel being returned from other countries, and our advocacy of limiting the international trade in weapons materials. The Department has made substantial progress during the last six years in fulfilling these responsibilities.

The pending legislation, H.R. 45, is very similar to legislation considered in the last session of Congress, which the President stated he would veto. I will address that legislation later in my testimony, but would first like to provide a status report on the repository program.

STATUS REPORT ON THE YUCCA MOUNTAIN PROGRAM

In December 1998, Secretary Richardson submitted the *Viability Assessment of a Repository at Yucca Mountain* to the Congress and the President.

The Viability Assessment provides policy makers such as this Subcommittee a technical status report on work carried out to date at Yucca Mountain. The Viability Assessment compiled a comprehensive description of the current design and operational concept for a repository based on data and work over the last decade. It assessed the potential performance of a repository concept in the Yucca Mountain geologic setting and contained a cost estimate and a plan for completing the license application.

The Viability Assessment revealed that no "show stoppers" have been identified to date at Yucca Mountain and the Secretary has concluded that scientific and technical work should proceed at the site. It also identified issues that will need to be

addressed before a decision can be made on whether or not Yucca Mountain should be recommended as a site for a repository. These issues include the key natural processes in Yucca Mountain, such as water movement, that would affect the long-term performance of the repository and waste package designs.

We recognize that our assumptions and analyses have yet to be challenged in a rigorous licensing proceeding before the Nuclear Regulatory Commission, and that additional work will need to be done in order to assure success in order to meet the rigorous requirement of such a proceeding.

We are preparing the comprehensive technical documentation needed to complete the site characterization of Yucca Mountain and to support the Secretary's decision whether to recommend the site to the President in 2001.

The most challenging aspect of this effort is that we must provide scientific reasonable assurance that a repository at Yucca Mountain will adequately protect public health and safety and the environment for thousands of years after the repository is closed.

This will be accomplished through a scientific, probabilistic performance assessment that evaluates how a repository system is likely to work over very long time periods. From the results of scientific studies, analysts build detailed mathematical models of the features, events, and processes that could affect the performance of the repository design. They then incorporate the results into an overall model to assess how the natural environment and engineered repository system are likely to work together over the long period required to contain and minimize the release of wastes into the environment.

Our studies have found that a repository at Yucca Mountain would need to exhibit four key attributes to protect public health and the environment for thousands of years. The four attributes are limited water contact with waste packages, long waste package lifetime, low rate of release of radionuclides from breached waste packages, and reduction in the concentration of radionuclides as they are transported from breached waste packages.

A reference design was developed for the viability assessment to provide a consistent basis for making and comparing our evaluations. Our design process has, and will continue, to evolve and consider the potential advantages of alternative design features, concepts, and options. For example, as we move towards the Secretary's site recommendation, we are including additional factors in the design selection process. First, we want to determine whether there are fundamentally different repository design concepts that could meet performance standards more effectively and efficiently than the reference design. Second, we will evaluate whether there are design features that could be added or incorporated into either the reference design or any alternative design with significant benefit. Lastly, we will consider whether there are alternative concepts or features that, in addition to meeting performance standards, could provide advantages with regard to operational, budgetary and regulatory issues.

WASTE ACCEPTANCE LITIGATION

As you know, the Department is in litigation over our inability to meet our contractual obligation to accept spent fuel from the nuclear utility companies by January 31, 1998. The Court of Appeals for the District of Columbia Circuit found that the Department has an obligation to commence spent fuel disposal by January 31, 1998. The Court denied the utilities' and States' request for a move-fuel order, finding that the Standard Disposal Contract provides a potentially adequate remedy. The Court stated that the Department may not rely on the "unavoidable delays" clause to excuse its delay in performance and suggested the "avoidable delays" clause of the Standard Contract as the potentially adequate remedy. This clause provides for an equitable adjustment of schedules and contract charges to reflect any estimated additional costs incurred by the contract holder.

Pursuant to the ruling of the Court of Appeals for the District of Columbia Circuit, the Department will process claims presented to it under the standard disposal contract. Although we have held settlement discussions with several utilities, only one utility has proposed a bilateral modification and request for equitable adjustment of the contract, and no formal claims have been filed.

To date, ten utilities have filed claims for monetary damages in the U.S. Court of Federal Claims. In the first three cases decided by the Court, the Department was found to have breached its contracts with three utilities, each with only one shutdown reactor, and the Department is now engaged in discovery to determine the amount of damages the Government must pay these utilities. Other cases, most involving utilities with operating reactors paying ongoing fees to the Department, are currently pending.

THE ADMINISTRATION'S POSITION REGARDING H.R. 45

The enactment of H.R. 45 could force the focus of our waste management policy from geologic disposal to a short term solution by requiring the Department to develop and commence operation of an interim storage facility at the Nevada Test Site. The bill requires the Department to begin accepting waste no later than June 30, 2003, and provides a defined acceptance schedule for the interim storage of spent fuel in Nevada.

The bill would undermine our ability to open the repository as scheduled in 2010 by shifting budget priorities and work effort to an interim storage facility. For example, it implies a delay of our proposed repository construction authorization license application by over a year, with a target date of December 2003.

Based on historical appropriations patterns, the proposed bill's funding provisions do not provide sufficient funding resources to support the simultaneous construction and operation of an interim storage facility and the repository program, for which cost estimates have been provided in the Viability Assessment and the recently issued Total System Life Cycle Cost report. If the Department has responsibilities to comply with the interim storage facility and repository funding provisions and schedules, enactment of the bill could result in a funding gap of substantially over one billion dollars.

The Department also believes that a waste acceptance deadline of June 2003 is very optimistic, given the licensing and transportation activities that would have to be completed prior to that date.

The new interim storage legislation is essentially the same as H.R. 1270, previously passed by the House, which the Administration made clear the President would have vetoed. The Secretary opposes H.R. 45 and would recommend to the President that he veto the legislation if Congress passes it in its current form.

Specifically, the Administration opposes this legislation because it would jeopardize the existing geologic disposal policy by forcing resources to be redirected to interim storage development,rather than completion by 2001 of the site characterization work needed to make a decision on the suitability of the Yucca Mountain site. The Federal government's longstanding commitment to permanent geologic disposal should remain the basic goal of its high level radioactive waste management policy. Permanent geologic disposal is also the approach preferred by the international community for nuclear waste.

In addition, it would authorize the Secretary to immediately begin site preparation for the construction of a centralized interim storage facility within Area 25 of the Nevada Test Site regardless of whether Yucca Mountain is found to be suitable for a permanent repository. By doing so, H.R. 45 would undermine public confidence that a repository evaluation will be objective and technically sound, and jeopardize the credibility of any future decision on the suitability of the Yucca Mountain site.

CONCLUDING REMARKS

The Program is reaching the conclusion of our site characterization effort. Let us finish. The Viability Assessment clarified the remaining work required and illuminated those technical issues that should be addressed prior to determining if the site is suitable for recommendation to the President. We are addressing these issues and have commenced work on assembling the information required to support national decisions on geologic disposal at Yucca Mountain.

We are on schedule to complete a draft repository environmental impact statement in July 1999; a final repository environmental impact statement in 2000; and the Yucca Mountain site suitability in 2001. With sufficient appropriations, and if the site is suitable, we are also on schedule to submit the license application for repository construction to the Nuclear Regulatory Commission in 2002 and begin emplacement of waste in the repository in 2010, if the site is licensed.

We believe that H.R. 45 could undermine this progress toward permanent geologic disposal, and could weaken the credibility of the regulatory and institutional activities required to ensure adequate protection of health, safety, and the environment—jeopardizing the Nation's ability to have any solution to our nuclear waste challenge. For these reasons, the Administration opposes H.R. 45.

I would be happy to address any questions that you may have.

Mr. BARTON. Thank you, Mr. Barrett.

We now recognize Dr. Jared Cohon, who is the Chairman of the Nuclear Waste Technical Review Board, for 5 minutes, and of course your complete statement is in the record in its entirety. Dr. Cohon.

STATEMENT OF JARED L. COHON

Mr. COHON. Thank you, Mr. Chairman. Good morning to you and to the other members of the subcommittee.

As you heard, my name is Jared L. Cohon. I am Chairman of the Nuclear Waste Technical Review Board, which was created by Congress in the Nuclear Waste Policy Act amendments in 1987.

Eleven members of the Board are selected on the basis of their expertise and represent a range of disciplines related to the technical and scientific evaluation of a site for a permanent repository at Yucca Mountain, Nevada. In accordance with the 1987 act, the Board members are appointed by the President on the recommendation of the National Academy of Sciences. All of us have full-time jobs outside of the Board. In my case, I am president of Carnegie Mellon University in Pittsburgh.

The Board, Mr. Chairman takes very seriously its role as the main source of ongoing technical and scientific review of the DOE civilian radioactive waste management program.

I have been asked to comment today on the viability assessment and on H.R. 45. I will make some brief summarizing remarks, and as you already indicated, Mr. Chairman, I appreciate the fact that my remarks in their entirety will be submitted into the record.

With respect to H.R. 45, let me emphasize that most of the issues raised in the bill are policy matters that are outside the technical and scientific purview of the Board. I will therefore not comment on the specific provisions of H.R. 45 except to urge that if phased development of an interim storage facility is authorized, that sufficient sources be allocated so that the DOE scientific testing to support decisions about the suitability and possible licensing of a permanent repository at the Yucca Mountain site can continue.

The rest of my remarks will be with regard to the viability assessment, which, as you know, and you just heard again, was recently completed and issued by the DOE. The VA for short is a significant accomplishment that enables the DOE to identify and set priorities among key areas of research that could improve the technical basis for making decisions about site suitability, about a site recommendation, and for licensing.

The Board concurs with the DOE that the VA was not meant to be and should not be viewed as a decision about the suitability of the Yucca Mountain site. The Board believes that in general the studies summarized in the viability assessment were carried out in a manner that produced good scientific information. It is very hard to judge, however, at this point how realistic the bottom-line estimates of a repository performance may be in the viability assessment.

Those specific points, Mr. Chairman, for the Board's focus is the use of expert judgment which we commend DOE on using extensively in the viability assessment. We would just like to point out, as the DOE knows, that expert judgment should not be used as a substitute for data that can be obtained directly from site, laboratory and other investigations.

The Board is pleased to note that the research priorities presented in the viability assessment are consistent with those that the Board identified in its report published in November 1998. One important line of work is to evaluate alternative and potentially

more robust repository and waste package designs. It is likely that improving these designs could increase confidence in predictions about the performance of a repository.

Other key areas of research include work to obtain a better understanding and estimation of seepage of water into repository tunnels and potential transport of radionuclides through the saturated zone under the repository. The Board notes that DOE has undertaken work in all of these areas, and we look forward to the results of these scientific studies and engineering analyses.

In conclusion, Mr. Chairman, the Board believes that the Yucca Mountain site continues to merit study as the candidate site for a permanent high-level radioactive waste repository, and that work should proceed to support a decision by the Secretary on whether this site is suitable. However, significant uncertainties remain about the performance of both the natural and engineered barriers in a repository system. Results of scientific tests and engineering analyses already under way could help address the uncertainties about the performance of the repository system.

Thank you very much, Mr. Chairman.

[The prepared statement of Jared L. Cohon follows:]

PREPARED STATEMENT OF JARED L. COHON, CHAIRMAN, U.S. NUCLEAR WASTE TECHNICAL REVIEW BOARD

Mr. Chairman, and members of the Subcommittee, good afternoon. My name is Jared L. Cohon. My full-time job is President of Carnegie Mellon University. I am here today in my capacity as Chairman of the Nuclear Waste Technical Review Board. It is my pleasure to represent the other members of the Board at this hearing.

As you know, Mr. Chairman, Congress created the Board in the 1987 amendments to the Nuclear Waste Policy Act to review the technical and scientific validity of activities undertaken by the Secretary of Energy, including the characterization of the Yucca Mountain site and the packaging and transportation of spent nuclear fuel and high-level radioactive waste. The Board takes very seriously its role as the main source of *ongoing* technical and scientific review of the Department of Energy's (DOE) civilian radioactive waste management program.

The Board has been asked to comment today on the DOE's recently issued viability assessment (VA) of the Yucca Mountain site and on H.R. 45, legislation amending the Nuclear Waste Policy Act of 1982. I will make some very brief remarks, and I ask that the full text of my statement be entered in the hearing record.

Comments on H.R. 45

Mr. Chairman, many of the issues raised in H.R. 45 are policy matters that are outside the technical and scientific purview of the Board. I will therefore not comment on the specific provisions of H.R. 45, except to urge that if phased development of an interim storage facility is authorized, sufficient resources are allocated so that scientific testing to support decisions about the suitability and possible licensing of the Yucca Mountain site can continue. I will be pleased to respond at the end of my statement to specific technical questions about the legislation from Subcommittee members.

During the last year, the Board has devoted the majority of its efforts to (1) identifying the key areas of research whose results would improve the technical basis for making decisions about site recommendation and licensing, if the site is determined to be suitable, and (2) evaluating the technical and scientific work that supports the viability assessment of the Yucca Mountain site. I will now briefly discuss some of the Board's conclusions and comments related to these activities.

Some Conclusions from the Board's November 1998 Report

In November 1998, the Board issued a report outlining its views about future research needed for addressing uncertainties about the performance of the repository system, including both the engineered and the natural barriers. The Board concluded in the report that although there are economic and technical limits to reducing uncertainties about the performance of the proposed repository system, the Board believes that some key uncertainties could be reduced further over the next

few years through a focused research effort. One important line of work is to evaluate alternative and potentially more robust repository and waste-package designs. It is likely that improving these designs could increase confidence in predictions about the performance of the repository. Other key areas of research include work to obtain a better understanding and estimation of seepage of water into repository tunnels and transport of radionuclides through the saturated zone under the repository. The Board notes that the DOE has undertaken work in all these areas, and we look forward to the results of these scientific studies and engineering analyses.

The Board's conclusions from its November 1998 report served as a technical basis for its review of the DOE's viability assessment.

Preliminary Comments on the VA

The Board's November report, along with the access to information provided by the DOE throughout the development of the viability assessment, make it possible for the Board to provide these *preliminary* comments on this immense and detailed document. The Board's evaluation of the VA will be completed in the next month or two.

I will begin with three general comments.

- First, the DOE deserves congratulations for completing the VA, which is the most significant landmark thus far in the characterization and evaluation of the Yucca Mountain site. The viability assessment is a solid accomplishment that has enabled the DOE to integrate large amounts of data and analyses, to establish a preliminary repository design, and to set priorities for work that needs to be completed before making decisions about site recommendation and licensing, if the site proves suitable. However, the Board concurs with the DOE that the VA is simply a snapshot of the current state of knowledge about the site; it was *not* intended to be and is *not* a suitability determination.
- Second, the Board's preliminary comments on the VA reflect its views that (1) all uncertainty about the performance of a repository at *any* candidate site cannot, and need not, be eliminated and (2) a "defense-in-depth" repository design that includes both engineered and natural barriers is appropriate in light of uncertainties about the projected performance of any repository system over many thousands of years.
- Third, because the Board did not have the expertise and resources needed to review the cost estimates included in the VA, it has no comment on their accuracy.

Now, more specifically:

- The Board believes that, in general, the scientific studies summarized in the VA were carried out in a manner that produced good scientific information. The reports included in the VA are well written and clearly presented.
- It is very hard to judge at this point how realistic the "bottom-line" estimates of repository performance may be in the VA. In fact, DOE representatives have stated that the VA's total system performance assessment (TSPA-VA) cannot be used to assess compliance with the regulatory standard. Because of a general lack of data supporting some critical assumptions in the mathematical models, some of the assumptions in the TSPA-VA are likely to be overly conservative, while others may be nonconservative.
- The VA relies quite heavily in some cases on the formal elicitation of expert judgment. This was necessary and extremely useful, given the lack of field and laboratory data in certain areas and the equivocal nature of some of the data in other areas. As the experts, themselves, pointed out, however, expert judgment should not be used as a substitute for data that can be obtained directly from site, laboratory, and other investigations.
- The VA helps illuminate the state of knowledge about the three major barriers that will be necessary to achieve a defense-in-depth approach to repository performance: the unsaturated zone, the engineered barrier system, and the saturated zone. However, it is clear from the information in the VA that there are significant and substantial uncertainties about the performance of each of these barriers and about how they would work together to provide defense-in-depth. As pointed out by the DOE, the TSPA-VA explicitly acknowledges the need for defense-in-depth analysis but does not provide such an analysis.

Closing

In conclusion, Mr. Chairman, the Board believes that the Yucca Mountain site continues to merit study as the candidate site for a permanent high-level radioactive waste repository and that work should proceed to support a decision by the Secretary of Energy on whether the site is suitable. However, significant uncertainties

remain about the performance of both the natural and the engineered barriers in a repository system.

The VA is a significant accomplishment that enables the DOE to identify and set priorities among key areas of research that could improve the technical basis for making decisions about site suitability, site recommendation, and licensing. However, the Board concurs with the DOE that the VA was not meant to be, and should not be, viewed as a decision about the suitability of the Yucca Mountain site.

The Board is pleased to note that the research priorities presented in the VA are consistent with those identified in the Board's November 1998 report and that much of this work is already under way. Results of these scientific tests and engineering analyses could help address the uncertainties about the performance of the repository system.

Thank you for the opportunity to provide these *preliminary* comments about the VA on behalf of the Board. I will be pleased to respond to questions.

Mr. BARTON. Thank you, Doctor.

We now recognize the Honorable Robert Perciasepe, who is the Assistant Administrator for Air and Aviation at the Environmental Protection Agency.

Your statement is in its entirety in the record, and we would ask you to summarize in 5 minutes.

STATEMENT OF ROBERT PERCIASEPE

Mr. PERCIASEPE. Thank you, Mr. Chairman and members of the committee, for the invitation today to present EPA's views on H.R. 45, Nuclear Waste Policy Act of 1999. EPA—I will try to summarize here. EPA has already licensed the waste isolation plant, or so-called WIPP plant, as a geologic repository for highly radioactive waste, and that licensing was done in an open regulatory process, a process that I think would be a good model for us to follow for Yucca Mountain.

We have been working pretty hard at EPA, and I am sure you have heard this before, to put the standards together as directed by Congress for the Yucca Mountain site. This is a tremendously complex technical issue covering a number of scientific and technical disciplines, as we have already heard from some of the other testifiers this morning. But I think it is important to note that these standards when they are promulgated, they must be credible to protect the public health and the environment while at the same time being feasible to implement, and I think these are two important policies that we are trying to follow.

We have been working with the Department of Energy, the Nuclear Regulatory Commission, other members of the—in the offices in the government, like the Office of Science and Technology Policy, to ensure that these standards that we are working on will meet both of these criteria, and we have been ongoing with this work for quite sometime. We are in the final stages of doing this. I plan to personally visit this site this month, and we hope to very shortly conclude our work, and I think the Chairwoman mentioned that as well. We hope to then finalize those standards, and within a year after we would promulgate the drafts and take public comment on it.

I would like to defer detailed discussion of that since we are in the final stages of putting that regulation together, and there will be a public comment period on it, and turn my attention now in summary to talk about some of our concerns with H.R. 45. I think I can summarize them in several different areas.

First, the level of health protection in the bill is inadequate. It inappropriately eliminates an analysis of human intrusion, and it overrides all other local, State, and Federal laws. Let me expand on these a little bit.

The 100-millirem-per-year release standard that is embodied in the act has a number of concerns for us, and let me mention several of them. First, it is based on an average—and I will talk about that in a minute—average member of the population in the vicinity of Yucca Mountain and the actual dose level itself. Let me give you some comparison. A 100-millirem standard represents a risk of about 1 in 500 fatal cancers. This level of risk is seven times higher than EPA's existing standard for geologic disposal of spent nuclear fuel. It is four times higher than the Nuclear Regulatory Commission standard for low-level nuclear waste. It is 3 to 20 times higher than the international standard for high-level waste disposal, and is 6 to 600 times higher than the risk level that EPA allows for other regulated facilities. Not only is that standard too high, but it is based on an average of a person in the general vicinity.

I am not going to get into the mathematics. I think somebody said earlier they are into mathematics, but as everybody knows, the simple concept of an average is some people will be exposed higher, and some people will be exposed lower, therefore the average is 100. I just told you 100, even if it was the cap, is much higher risk than any other standards we use almost in the whole world for facilities, and obviously if you do it as an average, there are going to be people either closer to the facility or someplace that are going to be exposed to even higher levels of that. Not knowing what the cap would be, one could run a scenario given the existing population in a 20-mile area that some people could be exposed to 40 times the 100-millirem standard, and still we could be meeting a 100-millirem standard for an average. That is a cancer risk of 2 in 25. I don't think anybody in the room will decide that 2 in 25 is an acceptable risk level.

I am going to talk very briefly about the postclosure oversight that is envisioned in the bill. It seems to envision some kind of institutional control of monitoring by the Department of Energy for 10,000 years. That is twice the time of recorded human history. While I have great faith that the Department of Energy will go on for a while, I am not sure about 10,000 years.

Human intrusion. I don't want to say too much about this. We think it ought to be looked at as something that could happen, and that the National Academy of Sciences has recommended this, and doing this at the WIPP site went a long way to help ensure the public acceptance of that site.

Ground water is an important component that needs to be looked at in the standard. There is a sole source aquifer here that could supply water for 250,000 people.

We don't think NEPA should be—I am really summarizing here—NEPA should be limited. We don't think that—the EPA standards should not be applied here. I think the process of proposing rules, holding public hearings, soliciting public comment by an independent Environmental Protection Agency will increase the level of credibility here.

The preemption of State and local governments, I think you have heard about that already. We have done this in the Federal Government. Congress has done this from time to time. But here the preemption is extreme and unprecedented, and we would say that the people of Nevada would object, and I think we have heard that.

So let me say in summary I think that the idea that we need to move ahead here and that some of the Members who are talking about and supporting this bill, I think they feel it is necessary because it is going to lead to development of Yucca Mountain as a safe place to dispose of spent nuclear fuel. I am concerned that this could have the exact opposite effect, that it effectively weakens every safeguard, dilutes by averaging, assumes compliance. This is not a way to build public confidence. It is a very difficult and important decision we need to make as a country.

So I will just stop there, Mr. Chairman, but we owe it to the future generations to try to make the right decision based on the best process we can put forward. Thank you.

[The prepared statement of Robert Perciasepe follows:]

PREPARED STATEMENT OF ROBERT PERCIASEPE, ASSISTANT ADMINISTRATOR FOR AIR AND RADIATION, ENVIRONMENTAL PROTECTION AGENCY

Mr. Chairman and Members of the Subcommittee, good morning. I am Robert Perciasepe, the Assistant Administrator for Air and Radiation at the U.S. Environmental Protection Agency (EPA). I am pleased to be here today to present and discuss the EPA's views regarding H.R. 45, the "Nuclear Waste Policy Act of 1999." Thank you for the opportunity to testify before the Subcommittee regarding this legislation. EPA appreciates the Subcommittee's interest in the important issues surrounding the development of environmental protection standards for the Yucca Mountain repository for spent nuclear fuel and high-level radioactive waste.

INTRODUCTION

Decades-long use of electricity from nuclear power plants has left the United States with a significant problem: how to dispose safely of the tons of highly radioactive spent nuclear fuel and other wastes created as a result of this power production. Over the years, an international consensus has developed that the safest, most appropriate means of disposing of these highly radioactive materials is emplacement in a deep geologic repository. Since the 1940's, the federal government has assumed the ultimate responsibility for the care and disposal of high-level radioactive waste and spent nuclear fuel generated by either commercial or government and military activities.

HISTORY OF ACTIVITIES TO DEVELOP A GEOLOGIC REPOSITORY

As the Subcommittee knows, efforts to address the disposal of spent nuclear fuel and high-level nuclear waste have been under way for many years. Various government agencies all have worked diligently to site and develop a deep geologic repository.

In the Nuclear Waste Policy Act of 1982 (Pub. L. No. 97-425), Congress took significant concrete legislative steps toward the development of a geologic repository for the disposal of spent nuclear fuel and high-level radioactive waste. The 1982 Act gave the Department of Energy (DOE) the responsibility for siting, building, and operating a geologic repository. The 1982 Act also directed EPA to set generally applicable environmental radiation protection standards based on our authority under other laws, including the Atomic Energy Act (AEA) (42 U.S.C. §§2014 et seq.). Finally, the 1982 Act required the Nuclear Regulatory Commission (NRC) to implement EPA's standards by incorporating them into its licensing requirements for spent nuclear fuel and high-level radioactive waste repositories. This regulatory scheme, though modified, has survived for nearly 20 years.

EPA's General Standards for Disposal of Radioactive Wastes

In 1985, EPA promulgated standards, found at 40 C.F.R. part 191, generally applicable to the disposal of high-level waste and spent nuclear fuel which is the waste disposed at Yucca Mountain and transuranic wastes which is the waste disposed at

the Waste Isolation Pilot Plant (WIPP). Though Yucca Mountain and the WIPP are the only sites currently being considered, the EPA standards (40 CFR 191) are generic and are designed to apply to any future sites. In 1987, the U.S. Court of Appeals for the First Circuit invalidated the individual and ground water protection standards of the disposal standards and remanded the standard. (*Natural Resources Defense Council v. EPA*, 824 F.2d 1258 (1st Cir. 1987)). The 40 C.F.R. 191 standard was overturned largely, in part, over concerns that it was not consistent with the Safe Drinking Water Act.

Nuclear Waste Policy Amendments Act of 1987

In 1987, Congress amended the 1982 Act. Among other things, the Nuclear Waste Policy Amendments Act of 1987 (Pub. L. No. 100-203) selected Yucca Mountain, Nevada, as the only potential repository site at which DOE was to conduct site characterization activities.

WIPP Land Withdrawal Act

On October 30, 1992, President Bush signed into law the Waste Isolation Pilot Plant Land Withdrawal Act (WIPP LWA) (Pub. L. No. 102-579). The WIPP LWA reinstated the provisions of 40 C.F.R. part 191, except for those invalidated by the First Circuit in *NRDC v. EPA*. It also required EPA to issue standards to repromulgate the individual and ground water protection standards that the court remanded. Finally, the WIPP LWA specifically exempted Yucca Mountain from the 40 C.F.R. part 191 disposal standards, though the standards would continue to apply to WIPP and to any other geologic repository for high level waste, spent nuclear fuel, or transuranic waste. The Agency promulgated the revised standards on December 20, 1993 (58 Fed. Reg. 66,398). On May 18, 1998, EPA certified that the WIPP facility will comply with the standards. The Agency is now in the process of inspecting the waste generators to ensure that certain waste shipped to the WIPP will be suitable for disposal at that facility. We expect these shipments to commence later in the spring.

Energy Policy Act of 1992

The Energy Policy Act of 1992 (Pub. L. No. 102-486) contained several provisions relating to the development of a deep geologic repository for the disposal of spent nuclear fuel and high-level radioactive waste. Section 801 of the Energy Policy Act of 1992 mandated that EPA promulgate "generally applicable standards . . . for protection of the public from releases from radioactive materials stored or disposed of in the repository at the Yucca Mountain site." Section 801 also directed EPA to commission the National Academy of Sciences (NAS) to "conduct a study to provide . . . findings and recommendations on reasonable standards for protection of the public health and safety." Congress directed that EPA's standards be "based on and consistent with" the NAS's findings and recommendations.

You asked for the Agency's position on, and concerns with, H.R. 45. You also asked EPA to provide the Subcommittee with information regarding the Agency's current activities relating to the development of generally applicable standards for Yucca Mountain. H.R. 45, the new interim storage legislation, is essentially the same as H.R. 1270 previously passed by the House, which the Administration made clear the President would have vetoed. EPA opposes H.R. 45 and the Administrator would recommend to the President that he veto the legislation if Congress passes it in its current form. EPA feels that the legislation is not needed. Further, the Agency has substantial concerns with a number of the bill's provisions. I will address these questions and concerns in the remainder of my testimony.

EPA'S DRAFT PROPOSED PART 197

EPA is in the final stages of developing a proposed rule establishing environmental protection standards for a repository at Yucca Mountain. This draft proposed rule is based on and consistent with the NAS's findings. Because the proposed rule is still under development, it is premature for me to discuss the rule's specific provisions in detail today.

In an effort to develop workable standards for Yucca Mountain, EPA has worked closely with DOE and NRC under the auspices of the Office of Science and Technology Policy on numerous technical issues underlying the development and implementation of our draft proposed rule. EPA's goal is to ensure that the standards adequately protect public health and the environment, that the standards are implementable, and that the standards provide a fair test of the safety of the Yucca Mountain repository. I believe that this interagency cooperation has made our draft proposal better.

PROBLEMATIC PROVISIONS OF H.R. 45

100 millirem/year release standard

H.R. 45 would establish a release standard intended to "prohibit release of radioactive material or radioactivity from the repository [that will] expose an average member of the general population in the vicinity of the Yucca Mountain site to an annual dose in excess of 100 millirem." EPA believes that this standard does not sufficiently protect public health and the environment. The numeric standard not only is too high in comparison to other environmental standards, it is too high in comparison to the risk allowed in other environmental standards, both domestic and international. In addition, by protecting the "average" person in the general vicinity of Yucca Mountain at that numeric level, it potentially leaves those closest to the site exposed to much higher risks. Finally, the bill as written appears to ensure that Yucca Mountain will pass the standard regardless of its actual performance. I will go into each of these of these problem areas in greater detail.

First, the lifetime risk of a person developing a fatal cancer as a result of exposure to 100 millirem/year is about 2 chances in 1,000, or 1 chance in 500. EPA typically establishes public health and safety standards that limit risks to members of the public to between approximately 1 in 10,000 and 1 in 1,000,000. EPA's existing generic standards for disposal of spent nuclear fuel and high-level waste set the limit at 15 millirem/year. The lifetime cancer risk associated with this dose is approximately 3 chances in 10,000. Thus, the risk from exposure to 100 millirem/year exceeds the levels the Agency has already established for the types of waste that the Yucca Mountain repository is proposed to contain. This is the standard that EPA applied to WIPP and I can think of no reason why the people in Nevada should be exposed to higher risks than the people of New Mexico or other states.

Second, the NAS, in its Congressionally mandated report on its findings and recommendations for technical standards at Yucca Mountain, suggested that the starting point for standard setting is consistent with a standard of 2 to 20 millirem/year. The NAS noted that this range is consistent with other U.S. nuclear regulations, and is therefore appropriate as a "reasonable starting point" for use in this instance (NAS Report, at 49). The other regulations considered by NAS include the WIPP site's regulations (40 C.F.R. part 191); the National Emission Standard for Hazardous Air Pollutants (NESHAP) promulgated at 40 C.F.R. part 61 pursuant to the Clean Air Act (42 U.S.C. §7412); regulations promulgated at 40 C.F.R. part 300 under the Comprehensive Environmental Response, Cleanup, and Liability Act (CERCLA) (42 U.S.C. §§9601-9675); and EPA's ground water protection standards (see 40 C.F.R. §191.16) (NAS Report, at 49-50).

Third, while the International Commission on Radiological Protection (ICRP) has suggested the 100 millirem/year level as a guidance, it is important to note that the 100 millirem/year level in H.R. 45 has a different basis than the ICRP recommendation. The ICRP recommends a 100 millirem/year level based on exposures from *all* sources of radiation, including future sources, except for medical and background sources. Therefore, this dose level is not an accepted limit for radiation exposure from one particular facility. Yucca Mountain is in a region with several other significant sources of radiation exposure, including the nuclear test cavities and the low-level and transuranic waste facilities on the Nevada Test Site and the commercial low-level waste disposal system in Beatty, Nevada. Thus, the Agency believes that H.R. 45 misuses the international level of 100 millirem/year by allowing just one source to contribute the entirety of a dose that is meant to be an upper bound of exposure from all sources.

H.R. 45 is also inconsistent with international high level waste disposal standards which range from 5 to 30 millirem/year. H.R. 45 would provide less protection to Americans than that afforded to citizens of other industrialized nations.

Not only is 100 millirem/year too high, by applying the standard to the "average" person in the general vicinity, the standard potentially allows those people closest to the facility to receive much greater risks. By definition, if you average risks to a group of people there will be some with above average risks. The potential for some people to suffer exposure and endure risks that are much higher than average is especially great at Yucca Mountain. The best scientific information to date indicates that releases from the site will travel south of the facility with the prevailing ground water flow paths. People in other directions from the site will probably not be exposed to ground water releases. Each person included in the "average dose" calculation who receives no exposure means that someone else can receive a much greater exposure.

Among how many people would this averaging occur? It is impossible to tell, as H.R. 45 says only those people in the general vicinity but does not define what the general vicinity is. While some have expressed the concern that the term can be con-

strued to include people currently living 75 miles away in the outer Las Vegas suburbs, I am willing to assume that it is intended to be interpreted more reasonably, for example, to include everyone living within 20 miles of the repository. (Although 20 miles is very far from the facility for normal standard setting purposes, it must be remembered that at this time no one lives within 12 miles of the facility.) Even using a 20 mile radius, over 75% of these "averaged people" live west, north and east of the site in directions where they may receive no exposure to ground water contamination from the site at all. The remaining 25% of the people are spread out over a distance of more than 8 miles and their doses can easily differ by an order of magnitude. Accordingly, the people living south of the site who receive the highest dose may receive as much as 40 times the 100 millirem standard. This amount, 4 rem/year, would impose a fatal cancer risk of 2 in 25. I hope we could all agree that any standard that allows anyone to endure risks as high as 2 in 25 is not adequately protective.

Instead of this averaging approach, typical radiation standards use either the "critical group" or "Reasonably Maximally Exposed Individual" approach. The NAS proposed using the ICRP's critical group concept as a means of providing a more accurate basis for an individual exposure standard, and for preventing unnecessary and excessive dilution of releases from the repository. One of the most important elements of this approach is that it limits the size of the assumed exposed population to prevent misleading dilution of the contamination. Only those people who receive roughly similar doses can be considered. Traditionally, in standard setting, the Agency has used a "Reasonably Maximally Exposed Individual" (RMEI) approach which closely approximates the critical group approach. In either approach, the applicable standard is more protective of the population as a whole because it applies to those individuals identified to have the highest level of risk. These approaches ensure that all people receive at least the protection that is promised by a given standard.

Finally, section 205(d)(2) requires the NRC to assume that, after DOE closes the Yucca Mountain repository, "the inclusion of engineered barriers and [DOE's] post-closure actions" at the repository will suffice to: (1) prevent human activity that poses an unreasonable risk of breaching any of the repository's barriers, and (2) *prevent any increase in exposure to radiation above the 100 millirem/year level specified in section 205(d)(1).* Our legal interpretation of this second provision is that no matter how the repository performs in modeling to assess performance it simply cannot fail to pass the standards. When NRC reviews DOE's application for a license, the NRC must assume either that the canisters containing the spent fuel will not leak or that DOE will carefully watch the site for the next 10,000 years and somehow prevent any violation of the 100 millirem/year average dose level. This provision makes the actual performance of the repository irrelevant to licensing. In effect, H.R. 45 provides that even if Yucca Mountain releases high levels of radioactive contaminants, it should be licensed because DOE will always be there to fix whatever problems may arise. I believe that the assumption that we will be able to monitor the site actively for 10,000 years, twice the length of recorded human history, is at best flawed, and at worst, renders any serious effort to determine the safety of the site meaningless.

Even if this problem is corrected, the basic premise of the section is faulty. H.R. 45 totally ignores the NAS recommendation that DOE perform an analysis of the effect of human intrusion on the repository's performance. Instead, H.R. 45 relies on DOE's institutional oversight to ensure that human intrusion does not occur. Even though the NAS acknowledged that accurately predicting the exact nature of future human intrusion is difficult, it recommended the inclusion of such an analysis in EPA's standards. The NAS made this recommendation because it believed that, despite the difficulty of accurately predicting future human intrusion, it is important for DOE to analyze the possible impacts of such intrusion on the repository's ability to contain the radioactive materials. Although the NAS found it unreasonable to assume that a system for post-closure oversight, based on active institutional controls, will prevent intrusions or releases in excess of allowable radiation release limits, H.R. 45 makes this very assumption. The NAS recommended use of a single, stylized scenario in which a drill penetrates a waste canister sometime in the future when some of the canisters have failed, and continues into the aquifer beneath the repository. Similarly, during the licensing of the WIPP, EPA's regulations required DOE to demonstrate the ability of the repository to protect future generations from the impact of intrusion into the repository. DOE's analysis went a long way toward assuring the public that the WIPP repository was safe.

Ground water protection

H.R. 45 contains no provision for the protection of ground water for the Yucca Mountain repository. As a result, H.R. 45 as drafted would potentially permit an exposure limit of 100 millirems through the ground water pathway. Ground water is one of our most precious resources. Once it is contaminated, ground water is extremely difficult and expensive to clean. The protection of the Nation's ground water is one of the Administration's most critical environmental objectives.

The need for ground water protection in this instance is especially compelling. It appears that the most likely path for radiation to escape from the repository is through the ground water pathway. As the NAS stated in its report, "[n]ear Yucca Mountain, there is no flowing surface water that might serve as a source in preference to ground water." The nearby human population relies, and presumably will continue to rely, on the area's ground water for drinking, irrigation, and domestic use. Let me assure you that the ground water in question is not a minor amount. If there are releases from Yucca Mountain, they will ultimately contaminate a sole source aquifer capable of supplying drinking water for over 250,000 people. This is a significant resource that deserves protection. Therefore, adequate protection of the ground water around and underneath Yucca Mountain is crucial to the effectiveness of any applicable standards for protection of public health and safety. The waste proposed for disposal in Yucca Mountain will remain radioactive for many thousands of years and we must think of the water needs and health and safety of many future generations.

Limitations on the Applicability of NEPA to Yucca Mountain

H.R. 45 limits the applicability of the National Environmental Policy Act (NEPA) (42 U.S.C. §§4321-4370d) to DOE's activities at Yucca Mountain. Section 102 of NEPA (42 U.S.C. §4332) requires the preparation of an Environmental Impact Statement (EIS) for federal actions that significantly affect the quality of the human environment. One of the key features of the EIS is that the agency planning to undertake the major federal action in question must consider alternatives to the planned action. It is from a serious analysis of alternatives that good public policy is created. As written, H.R. 45 precludes the incorporation of NEPA's core values in any assessment of the environmental impacts of either the interim storage facility or the repository. While there may be some justification in some minor limiting of NEPA analyses of issues already decided by Congress, H.R. 45 prevents DOE from considering alternative sites, or alternative designs, for both an interim storage facility and a permanent repository, in any EIS it prepares pursuant to NEPA. A critical effect of these provisions is that, by limiting the alternatives that DOE may consider, they effectively will deny the public's right to comment on critical health and safety issues. Also, the provisions may lead to ill-informed decision-making on DOE's part because DOE will not receive input from the public on these various aspects of the facilities" development.

Preclusion of Application of EPA Standards

Section 205(d) specifically prohibits the EPA from "promulgat[ing], by rule or otherwise, standards for the protection of the public from releases of radioactive materials or radioactivity from the repository." It also precludes the NRC from incorporating in its licensing regulations for Yucca Mountain any such EPA standards existing on the date of the bill's enactment.

The Energy Policy Act mandated that EPA, through a public process, develop standards for protection of the public for Yucca Mountain, consistent with the NAS's findings and recommendations. Section 205(d) short-circuits ongoing efforts at the Agency to develop public health standards for the permanent repository through a public rulemaking process, as the Energy Policy Act mandated. That process of proposed rule, hearings, and public comment serves to assure development of the most appropriate standards and to strengthen public confidence in the result.

Preemption of all other federal, state, and local laws

EPA strongly objects to section 501, which contains an unprecedented preclusion of the application of any environmental laws that are inconsistent with, or duplicative of, the Atomic Energy Act and the Nuclear Waste Policy Act of 1999, to DOE's activities at Yucca Mountain. This provision makes unavailable the full panoply of environmental laws available to protect public health and the environment from potential releases from the repository. Further, section 501 preempts all state and local laws that are "an obstacle" to accomplishing or carrying out the Nuclear Waste Policy Act of 1999 or a regulation promulgated thereunder. Since "obstacle" is not defined, it logically could apply to any requirement which increases the cost of DOE's operation of the site. In other words, Yucca Mountain becomes the only facil-

ity in the Nation where local, state and federal statutes and regulations do not apply.

It is possible to envision several serious deleterious effects this section may have. For example, section 501 will preclude application of the Safe Drinking Water Act to ground water affected by releases from Yucca Mountain. Protection of ground water resources is one of EPA's most important environmental objectives. It is extremely troublesome that, if section 501 as introduced becomes law, persons residing in the region surrounding Yucca Mountain will have less protection of their drinking water supply than persons living elsewhere in the country.

Moreover, section 501 raises significant federalism concerns. It is not uncommon for the federal government to preempt state laws in some regulatory areas, especially where state and local laws may conflict with a national regulatory scheme established in a federal statute. Here, however, the preemption is extreme and unprecedented. It applies to one facility. It denies the State of Nevada, its affected local governments, and its citizens any legal avenues for remedying public health and safety problems that arise because of the location or operation of the repository at Yucca Mountain.

CONCLUSION

In conclusion, EPA opposes H.R. 45 in its current form. EPA believes the legislation is not needed. I know that many of you believe that this bill is necessary because it will lead to the development of Yucca Mountain as a safe place to dispose of spent nuclear fuel in particular and to nuclear waste disposal in general. I fear that it will have exactly the opposite effect. H.R. 45, no matter how well intentioned, effectively weakens every safeguard of public health and safety. It sets weak standards, then further dilutes them by averaging over large numbers of unaffected people. In key areas, the bill directs NRC to assume compliance rather than to evaluate the performance. Other state or federal laws are simply overridden if they present an obstacle to operating the site. This is not the way to build public confidence in, and acceptance of, a controversial public project. I believe that the regulatory process can work, that the combination of EPA standards and NRC implementation will, using good science, demonstrate in an open and fair public process the true performance capabilities of Yucca Mountain. If the site is safe, it will pass the standards and waste will be emplaced, if not, then the site will be rejected. This is as it should be. In deciding whether or not to place the Nation's spent nuclear fuel in Yucca Mountain, we are making a decision that will affect future generations for thousands of years. We owe it to the future to spend time now making sure we make the right decision.

Thank you again for the opportunity to appear today before the Subcommittee to present the EPA's views regarding H.R. 45, the "Nuclear Waste Policy Act of 1999." This concludes my prepared statement. I would be happy to answer any questions that you may have.

Mr. BARTON. Thank you, sir.

We now welcome the Deputy Assistant Attorney General from the U.S. Department of Justice, Mr. Stuart Schiffer, for 5 minutes, and of course your written statement is in the record in its entirety.

STATEMENT OF STUART E. SCHIFFER

Mr. SCHIFFER. Thank you, Mr. Chairman, members of the committee. I am dismayed how quickly you got to me. I saw the size of this panel and thought I had hours to think of something to say.

We have a brief written statement which we have submitted, and I think I can be even more brief in summarizing because Mr. Barrett has already ably summarized the litigation.

In particular I don't want to take your time to outline the things I believe I am precluded from discussing. I simply note that our involvement in the Department has been from the standpoint of litigation. Most of it is still pending. Over and above any other concerns about the pending litigation, most of it is at a fairly early stage, so anything I speculated about probably wouldn't be worth its content anyway.

Mr. Barrett noted we had essentially two groups of cases. The second group effectively has two subsets. The first cases were filed in the Court of Appeals for the District of Columbia Circuit under the review provisions of the Nuclear Waste Policy Act. In those cases utilities sought to require the government to perform specifically the contract; in other words, to honor the terms of the contract that would have required the Department of Energy to begin accepting spent nuclear fuel beginning on January 31, 1998.

The court of appeals declined to order specific performance, noting that the contract contained its own remedial scheme, disputes clause, providing for claims to be submitted to the Department of Energy in the first instance and then to be appealed to a Board of Contract Appeals, and that this disputes clause could provide a remedy that was adequate without the specific performance remedy.

At the same time, the court noted, as Mr. Barrett already mentioned—the court ruled, I should say, that the Department of Energy could not invoke the unavoidable delays provision of the standard contract. This was something that was—review was sought in the Supreme Court, and the Supreme Court recently denied review of that ruling.

At the same time in the second set, we have to date 10 cases pending in the United States Court of Federal Claims filed by utilities, and they seek amounts at least in their terms ranging from $70 million anywhere up to in excess of $1 billion. If you add up the amounts sought in the 10 cases filed to date, they exceed $8 billion.

When I mentioned two subsets, we moved to dismiss a large number of those cases, again arguing that the contract itself contained the remedial scheme that utilities needed to follow in the first instance. As Mr. Barrett noted, in the first three of those, which involved utilities that were no longer generating nuclear electric power, the court read the contract to say there was no real refund provision and there was no ongoing payment of rates into the fund; therefore, there couldn't be an offset. The court found that a breach of contract remedy was available, and we are in the early stages of discovery on what the damages might prove to be in those cases.

The second group of cases involve utilities that are still generating electricity. We at least believe the disputes clause is more clearly applicable. The court has not yet ruled on our motion there.

To end with what I began with, things that I am unable to discuss at any length, the committee did ask in its invitation to have us testify that we address the source of any funds for any judgments or settlements which result from these cases. That is an issue that is more difficult than appears on the surface. It is currently being examined with recognition of the importance of the issue by our Office of Legal Counsel in the Department, which prepares formal opinions on issues such as this.

In brief, just to capsulize the issue, there is an indefinite appropriation contained in title 31 of the United States Code to pay judgments and settlements. The provision is section 1304 of title 31. There are several qualifications on when that indefinite appropriation may be utilized, the most relevant of which is that it can be

utilized only when there is no other appropriate source of funds. That is the issue that is currently being examined. As we go along, we will be pleased to work with this committee on this legislation and any other legislation.

I know one issue that the committee is undoubtedly concerned about is the extent to which legislative changes that in turn alter existing contracts can create liability. We know that they can certainly create claims. It is something we would be pleased to work with you on. Thank you very much.

[The prepared statement of Stuart E. Schiffer follows:]

PREPARED STATEMENT OF STUART E. SCHIFFER, DEPUTY ASSISTANT ATTORNEY GENERAL, DEPARTMENT OF JUSTICE

Mr. Chairman, and members of the subcommittee, I am Stuart E. Schiffer, and I am a Deputy Assistant Attorney General of the Department of Justice. I am pleased to testify today regarding the implications of recent litigation concerning the Department of Energy's obligations under the Nuclear Waste Policy Act of 1982.

Let me note at the outset that much of the litigation about which you have asked the Department of Justice to provide testimony is still pending in the Federal courts. As a result, the Department's pending matter policy applies to any discussion of those cases. Pursuant to that policy, I will be happy to discuss matters that are in the public record.

The Nuclear Waste Policy Act of 1982 authorized the Secretary of Energy to enter into contracts with generators of high-level radioactive waste and spent nuclear fuel—mostly nuclear power utilities—through which, in return for the utilities' payment of fees into the Nuclear Waste Fund, the Department of Energy agreed to start disposing of spent nuclear fuel created by the utilities' production of nuclear power beginning not later than January 31, 1998. The Department of Energy then promulgated standard contracts through notice and comment which contain the terms used in the utilities' contracts. In 1987, Congress designated Yucca Mountain in Nevada as the sole site for which the Department of Energy is to perform a permanent repository feasibility determination. While site testing continues at Yucca Mountain, construction of the repository cannot begin. The Department of Energy has publicly represented that, at the present time, it anticipates that the federal repository will not be ready for use until 2010.

The Department of Energy's inability to begin acceptance of the spent nuclear waste by January 31, 1998 has resulted in two different tracks of litigation. The first set of cases were filed by utilities who had paid fees to the Secretary of Energy under the NWPA and by state commissions. These cases were filed in the United States Court of Appeals for the District of Columbia Circuit, as permitted by chapter 108 of the NWPA, seeking to require specific performance of the terms of the standard contracts providing that disposal of spent nuclear fuel would begin by January 31, 1998. The D.C. Circuit denied the utilities' demand for specific performance, finding that the remedial scheme of the standard contracts offers a potentially adequate remedy to the utilities. That remedial scheme, which is set forth in the disputes clause in the standard contracts, requires the utilities to submit their claims for monetary damages to the Department of Energy contracting officer for decision, followed by an appeal by the utilities to the Energy Board of Contract Appeals of any claims that the contracting officer denies.

Although the D.C. Circuit denied the utilities' requests for specific performance, that court also issued a writ of mandamus precluding DOE from excusing its delay in beginning disposal efforts by arguing on the grounds that it has not yet prepared a permanent repository or interim storage facility. Although we filed a petition for a writ of *certiorari* with the United States Supreme Court to challenge the writ of mandamus, the Supreme Court denied our petition. At the present time, several utilities are continuing to seek specific performance in the D.C. Circuit and to seek to compel the Department of Energy to reduce the fee payments for utilities still paying into the Nuclear Waste Fund.

A second set of lawsuits is currently pending before the United States Court of Federal Claims. To date, ten utilities have filed complaints in that court, seeking damages ranging from $70 million to $1.5 billion, and totalling approximately $8.5 billion, for alleged breaches of contract and takings under the fifth amendment of the United States Constitution. We filed motions to dismiss in several of the cases, upon the ground that the utilities had failed to exhaust the administrative remedies which the standard contracts require, through submission of a request for an equi-

table adjustment to the Department of Energy contracting officer followed by an appeal to the Energy Board of Contract Appeals. With regard to utilities that have ceased producing nuclear power, the Court of Federal Claims, on October 29, 1998, rejected that argument. The court determined that, because the utilities pay fees only during the period of time during which they are generating electricity, and because, according to the court, the standard contract contains no provision for a refund of previously paid fees, the contractual remedy of an equitable adjustment was unavailable to utilities that no longer generate electricity because they could not offset future fee payments by the damages that they were allegedly incurring as a result of the delayed spent nuclear fuel disposal. The court also found that DOE's failure to begin disposing of the closed utilities' spent nuclear fuel by January 31, 1998 constituted a breach of the standard contract, entitling those utilities to damages. Discovery related to damages in three cases involving utilities that no longer generated electricity has recently commenced. We are currently awaiting decisions upon our motions to dismiss in cases involving utilities that are currently generating electricity.

This committee has requested that we address several points regarding these cases, including the issue of whether payments of judgments arising out of the pending cases would come out of the Nuclear Waste Fund. We are presently awaiting an opinion from the Office of Legal Counsel regarding this matter.

The committee has also requested that we address the impact that any such payments may have upon program funding. The Department of Justice has no specific expertise relating to this issue. We believe that the Department of Energy is a better source of information regarding this particular matter.

In light of the fact that the cases that I have described are currently pending in Federal court and the short time that we have had to review H.R. 45, we must reserve any specific comments regarding that legislation. However, we note that, to the extent that Congress, through H.R. 45, determines that the Secretary must increase quarterly fees or must change the timing of the collection of the one-time fee set forth in Article VIII of the standard contracts, which the utilities have the option of paying at any time prior to the first delivery of spent nuclear fuel under the current standard contracts, there is a likelihood that the plaintiff utilities will claim that this change would constitute another breach of contract for which they are entitled to damages.

Finally, the Department of Justice joins EPA in its concerns that H.R. 45 would preclude application of EPA standards, limit the applicability of the National Environmental Policy Act, and preempt other federal, state and local environment, safety and health laws.

This concludes my testimony. I would be pleased to answer any questions that the committee may have.

Mr. BARTON. Thank you.

All members of the panel that wish to make an opening statement I believe have done so; is that correct? So we are going to start questioning. It is my understanding that members have indicated they want at least two rounds of questioning, and that is certainly acceptable to the Chair.

The Chair is going to recognize himself for the first 5 minutes. I will ask the gentleman from the Department of Justice, I was trying to listen carefully to what you said, but I missed it. Is the Department of Justice's position that any payments that have to be paid to the utilities that have successfully sued the Department of Energy are going to come from within the waste fund or from without?

Mr. SCHIFFER. I think what I was saying is what I say to a lot of questions, that it was not at all yet clear. It is a question that is being examined elsewhere in the Department.

Mr. BARTON. There is still not a definitive position.

Mr. SCHIFFER. That is correct, Mr. Chairman.

Mr. BARTON. I want to ask the gentleman from the Department of Energy, is it the current policy of your Department that you should be in continual violation of Federal law and not do anything about it?

Mr. BARRETT. No. We do—we would like to be able to discharge our obligation, but under the existing statutes, we have no facility where we can take this material to.

Mr. BARTON. So what is the Department's position, No. 1, on accelerating the acceptance, or, No. 2, on coming up with a payment plan to pay the damages for not complying with the law?

Mr. BARRETT. The central focus of the administration's solution to this is for the long-term permanent solution. That is to see if we could have a permanent geologic repository at Yucca Mountain.

Mr. BARTON. Say it again, sir. I was listening to my staff.

Mr. BARRETT. The central administration focus is to determine if we have a suitable repository site at the Yucca Mountain site, and that is where the focus of our work is.

Mr. BARTON. So you are focusing on a permanent repository?

Mr. BARRETT. Yes, sir.

Mr. BARTON. Now, the gentleman from the EPA indicated that the WIPP facility in New Mexico has been licensed. There has been no material transported to that. It is for a different type of material. It is a transuranic waste. Is there any support in the Department of Energy to use the WIPP facility for the type of waste that the commercial reactors are generating on an interim basis?

Mr. BARRETT. There is a completely different statute for the WIPP site versus the——

Mr. BARTON. I understand that. I am asking—you just said that you want to get a permanent repository. I don't have a problem with that. I have talked to the Secretary of Energy about that. But we have got a problem right now, and this bill sets up an interim facility out at Yucca Mountain which is the leading candidate for the permanent repository. Now, if the Department of Energy doesn't like that, logically you are going to look around for other facilities, and there is one that has been licensed for a different type of material. Is that under consideration, or is that not under consideration?

Mr. BARRETT. That is not under consideration. The statutes are very clear. We are to evaluate only one site for a commercial high-level waste repository, and that is the Yucca Mountain site.

Mr. BARTON. So you are obeying the law on that particular point.

I want to ask the gentleman from the EPA, you talked about the concerns that your agency has with the 100-millirem standard, and I think that is legitimate to have a concern like that. I know you are working with the—with the NRC to come to a consensus on what an alternative standard should be. There is a study that was done back in 1986 by a gentleman named Carson Mark, who at that time was a member of the NRC Advisory Committee on Reactor Safeguards, and he and his staff did estimates here in the capital area back in May-July 1996. They found out that if you stood in the doorway of the Library of Congress all year, you would be exposed to 440 millirems. Are you aware of that?

Mr. PERCIASEPE. There is a difference between background exposure and any additional exposure. I think that may—I am not familiar with that study, but that may——

Mr. BARTON. I could go through steps of the Capitol, inside the Capitol, inside the Russell Office Building, the Dirksen Office

Building, but most of those measurements were over 100. And that is right here.

Mr. PERCIASEPE. I am assuming it is related to background radiation versus additional exposure.

I would also point out that the National Academy of Sciences, when they looked at this site, they recommended something between 2 and 20 millirems, and again, you see Madam Chairman mentioning 25, and they are talking about—I think we are zeroing in somewhere in that zone.

Mr. BARTON. If I understood your testimony, your written testimony, you had a concern that a 100-millirem standard, an average standard for the average citizen in the Las Vegas Valley, they would have a 1 in 500 chance of developing cancer. I am not sure you said it exactly that way. If that is literally true, somebody who worked in the Library of Congress and actually came to work every day, they ought to be falling like flies over there.

Mr. PERCIASEPE. Well, I am not familiar with that study, so I can't——

Mr. BARTON. A millirem is a millirem; isn't that correct?

Mr. PERCIASEPE. That is correct.

Mr. BARTON. Regardless if it comes from background radiation or—a millirem is a millirem. There is not—I mean, that is a unit of measure——

Mr. PERCIASEPE. There has been some change over some time on how we look at it, but you are correct.

Mr. BARTON. You are not advocating that we tear down the Library of Congress or the Capitol?

Mr. PERCIASEPE. I could go a lot of places with that, Mr. Chairman, but I would say no.

Mr. BARTON. Let me ask the distinguished Chairwoman what work is being done with EPA to come up with a standard, and the committee is very willing to—if 100 millirems is not the appropriate standard, we would certainly yield to the expertise of the NRC if your agency and the EPA can agree on a standard. So could you elaborate on that please, ma'am?

Ms. JACKSON. Yes, Mr. Chairman. I would say that if one looks at the pathways standard, and we have a place holder in our implementing regulation for Yucca Mountain of 25 millirem total effective dose equivalent from all pathways, the last understanding we have of the EPA standard is 15 millirem. I would say to you that our point of view is that the differences between those two things are negligible relative to uncertainties and risk coefficients.

Mr. BARTON. I want to make sure I understand that. The difference between what two things?

Ms. JACKSON. Fifteen millirem all pathways and a 25 millirem all pathways.

Mr. BARTON. What is the difference between an all pathway standard and this 100-millirem average annual standard?

Ms. JACKSON. Well, our average, which is 100 millirem, is from all sources, all sources of radiation above background. The 25 millirem is from all sources at Yucca Mountain, so it would be all sources above background. The EPA's proposal is 15 millirem.

What I am saying is that there is what is known as a risk coefficient which translates a dose, a radiation dose, into a risk of latent

cancer, of latent cancer fatalities. That risk coefficient is based on an extrapolation, actually, from Hiroshima and Nagasaki. There is enough indeterminancy in it that one essentially cannot make a definitive statement as to whether a 15 millirem standard gives more protection than a 25 millirem standard.

Mr. BARTON. I understand that.

Ms. JACKSON. The fundamental differences between the EPA and the NRC relate to ground water, the fact that they would like to impose a separate ground water protection standard. We feel that that is not necessary.

Mr. BARTON. In addition to this other standard?

Ms. JACKSON. In addition to the 15 millirem all pathways. They basically want to lift out of that standard a different, separate standard for ground water protection.

It is not that the NRC is not equally interested in ground water protection. We feel that the 25-millirem standard is a fraction of our overall 100-millirem standard that we feel is protective for public health and safety, but to take a count of uncertainties projected over a long time periods and to ensure that there is no exceedence, we would implement the rule with a 25-millirem standard. And since the greatest exposure pathway at Yucca Mountain is ground water, we feel that that standard is equally—is adequately protective, so there is no need to have an additional ground water standard.

I could go on and talk about calculational methodologies and the like, but where I think the discussion is settling on is this issue of the ground water.

Mr. BARTON. My time has expired. I wonder if the other Commissioners wish to elaborate on Chairwoman Jackson. I will give that opportunity, and I will give the gentleman from EPA time for rebuttal if he so wishes.

Mr. MCGAFFIGAN. Mr. Chairman, just to be absolutely clear, and I know you don't deal with millirems every day, 100 millirems per year——

Mr. BARTON. We go the other way. We deal with billions and trillions.

Mr. MCGAFFIGAN. A hundred millirems per year is the current public dose limit for all sources of radiation other than background radiation. The average individual annual exposure is 300 millirems. You are in a very high-threat occupation working at the Capitol, given the figures you cited earlier.

Mr. BARTON. They indicate the level of our judgment around here.

Mr. MCGAFFIGAN. You also travel a great deal. A transcontinental airline flight will typically give you about 5 millirems each time you crisscross the Nation. We have chosen 25 millirems as a subset of the hundred for this particular activity, and that approach is consistent with what various international bodies have suggested, including the National Academy of Sciences. So, the Chairman's detailed statement supports the 25 millirem standard, and we assume your legislation permits us to take a fraction of the hundred and apply it to Yucca Mountain.

Our rule also, I believe, fixes many of the other concerns that the EPA representative has raised about your bill, if our rule is indeed

consistent with your bill. We do look at the intrusion scenario as was suggested. We do use an average member of the critical group approach as opposed to the average member of the population approach, which is, again, an international standard, and so I believe that if our rule is indeed consistent with your bill, most of the EPA concerns other than, as the Chairman said, the ground water concern are addressed bt NRC's rule.

Our fundamental concern with the ground water, the additional ground water standard, is that if you apply it straightforwardly, you can convert a 15-millirem standard that EPA is advocating into a submillirem standard. The EPA standard for iodine 129, which is one of the isotopes you will find potentially getting into the ground water, equates to .2 millirems, which is approximately one one-hundredth of 15. So you get an extremely conservative standard at that point well beyond what we believe is necessary for public health and safety and almost mindless.

Ms. JACKSON. Mr. Chairman, I know we exceeded our time, but let me just elaborate on the last comment Commissioner McGaffigan just made. The point is if the EPA has one standard, whatever it is, 15 millirem from all sources, separately applies a 4-millirem ground water—I mean a separate ground water standard, and they actually do it in terms of concentration limits in the water, that if you actually convert that to a radiological dose, it actually is a tiny fraction; it is one one-hundredth of what they say is the overall standard. So they de facto are creating not a 15-millirem standard, but a .2-millirem standard, and that is the basis——

Mr. DIAZ. Mr. Chairman, if I may just add one quick thing. Regarding the difference between 15 and 25, I mean, somebody can say the 15 is more protective—what the Commission is saying is that, really, there is no significant difference between 15 and 25 because it will get lost in the background where you are—you just mentioned in the Capitol—nor is the certainty on the effects, something that we can pinpoint. The bottom line is: what is the cost to the American people of actually reducing the standard further and further, when there is no significant health benefit to be derived from it?

Mr. BARTON. The Chair would recognize Mr. Hall for at least 5 minutes and perhaps more.

Mr. HALL. I will take less.

Mr. MARKEY. Can I ask, Mr. Chairman, what is the procedure under which we are going to operate?

Mr. BARTON. I am going to attempt to continue the hearing.

Mr. MARKEY. I am going to go over and vote. I would like to ask——

Mr. BARTON. We will guarantee you will be given at least 5 minutes to ask questions of this panel, and I bet you are going to be given more than that.

Mr. MARKEY. Thank you, Mr. Chairman.

Mr. HALL. Mr. Schiffer, just to tie up the questions that the chairman has asked and to go back——

Mr. BARTON. Would the gentleman suspend. I have just been told, Congressman Hall, we have got two votes in a row, not just

one, so we are actually going to take a little break. Do you want to ask now or after the break?

Mr. HALL. Well, I will ask now.

Mr. BARTON. The gentleman is recognized for 5 minutes.

Mr. HALL. I won't take 5 minutes. I realize that you were given a short time to look at the H.R. 45, and you reserved a lot of your comments regarding that legislation. Let me ask you about the scenario that is placed here where we are concerned about a congressional breach of contract. And just to get the record and lay the record clear and straight on that, DOE's breach comes from the nuclear waste fund. They are compensated out of that; is that right? It is correct, isn't it?

As a matter of fact, DOE has already been held in breach, and the next breach could be even greater, but under the Winstar case that you have alluded to, that is still an open case only in the amount of damages. Is that the only thing? There is not anything up on appeal or request for rehearing or anything? They have alluded to the Court of Claims for the damages in that, have they not, in the Winstar case?

Mr. SCHIFFER. Are you asking me, sir, if the Winstar case is final, or if these cases are——

Mr. HALL. No, the Winstar case that you referred to here in your testimony.

Mr. SCHIFFER. Winstar was a case arising out of——

Mr. HALL. It is not connected here, but you referred to it. In this case it is final except in the amount of damages, and that is up to the Court of Claims. There is nothing pending on that that will change your testimony?

Mr. SCHIFFER. That case was final with respect to the three thrifts before it where the court found there was liability—there was liability for breach of what the Supreme Court ultimately found to be contracts. We are litigating a number of other cases arising from the thrift crisis and your legislation.

Mr. HALL. But the hard cold facts are that if we have a congressional breach of contract, then taxpayers pay? There is no other place to go forward.

Mr. SCHIFFER. The Winstar cases teach us that congressional legislation, however well intended and for the public good, can indeed be liability-creating for breach of contract purposes.

Mr. HALL. I think that that establishes that. I want to ask more questions, but I think we better go.

Mr. BARTON. Since we have two votes, we are going to recess until 1:30. That gives about 45 minutes for Members' personal convenience and to have a little lunch. But we want our distinguished panelists back here at 1:30. That is eastern time.

Mr. PERCIASEPE. Mr. Chairman, not to interfere with getting to the votes and the food, will I have a chance to respond to some of the comments?

Mr. BARTON. Yes.

[Whereupon, at 12:50 p.m., the subcommittee recessed to reconvene at 1:30 p.m.]

AFTERNOON SESSION

Mr. BARTON. If we could come to order. I want to commend our panel for being on time. That is exemplary, given how many of you there are.

Ms. JACKSON. We aim to please.

Mr. BARTON. I appreciate that, Madam Chairwoman. The Chair is going to recognize Congressman Hall for 5 minutes and then we will, as other members show, either I will fill in, but I know Congressmen Markey and Pallone have told me personally they wanted to ask this panel some questions. So we will recognize Chairman Hall, and then if there are no other members, I will resume some of my questions. Mr. Hall for 5 minutes.

Mr. HALL. I told Markey we would adjourned till next week.

Mr. BARTON. That is definitely a plan.

Mr. HALL. Mr. Barrett, let me ask you a question. I am glad to see on page 7 of your testimony you think the Department is more or less on schedule. That is a pretty brave statement to make, I think, based on history in the past. But they are pretty much on schedule with the environmental impact statements and plans to apply for the license for the repository, I think in the year 2002, and that you could begin accepting waste for disposal by 2010.

Mr. BARRETT. That is correct, sir.

Mr. HALL. Though that is a lot later than we would like it to be, at least the date had not slipped since the last subcommittee hearing. Normally it slips and jumps every time we meet. You know, one of these days if we can figure out how to do it, we are going to hold all you folks to a projection and to a date. We are not smart enough to do that. I am not sure I know why you didn't meet the dates. Ms. Jackson has been there and given me the time to explain those things and to say from this point forward they were in better shape to make these projections. Do you think that is a realistic timeline? Can you meet that, and who is to keep you from it?

Mr. BARRETT. If we complete the environmental impact statements, the draft and the final, if we recommend the site to the President, should the site be suitable, and most importantly if we get the needed appropriations that we have requested, I believe that 2010 is very doable. The license application date in 2002 will be doable, given needed appropriations, and a site that is found to be suitable through the evaluation process. And regarding the licensing schedule, which the Chairman mentioned that they are prepared to do, if the License review stays on schedule, I have confidence in the 2010 date.

Mr. HALL. A lot of people who are picking up the bill for it and, granted, will benefit from it if and when it ever happens are going to make a lot of tough decisions based on your projection. You understand that, surely, don't you?

Mr. BARRETT. Yes, sir. We understand this is very serious and very important.

Mr. HALL. I guess, Dr. Cohon, your testimony was complimentary about DOE's recent report on the viability of Yucca Mountain for a repository. And we appreciate that assurance that DOE and their work seems to be on the mark or done in a professional manner, which I don't question. I just have a real problem with the time, from 1982 when we started and we thought we could see the

end somewhere down there, and every time we met we were told that it couldn't be met and we would have to go out and come in again, start all over.

Can you tell us what are the biggest questions that you think that DOE—remaining questions that face you, and what do you have from here on out to make those projections work, and what are you doing to resolve and move the program forward? That is an easy one. You ought to knock that one right out of the park.

Mr. COHON. Thank you for that softball, Mr. Congressman. As I said in my testimony, the DOE in fact is pursuing work in all the areas that we identified and the DOE also identified as the critical ones for further research before making the suitability determination currently scheduled for 2001—major areas. And it is well outlined in the viability assessment, so I won't go through it in detail. But they include the so-called unsaturated zone; that is, the area in which the repository itself would be located; and in particular how water moves through that; and in particular, seepage into the tunnels in which the waste would be placed, trying to predict that; the effect of that on waste packages and the performance of the materials in those packages, especially understanding more about the corrosion properties of the materials that DOE is studying, that is a key. And then finally, understanding if these packages are breached, and surely they will be eventually, given enough time, how the materials would be picked up by water and moved through the rest of the unsaturated zone to the saturated zone and eventually to the accessible environment. Here where special interest is, as is DOE, in retardation of the unsaturated zone for the movement of radionuclides through it, as well as retardation in the saturated zone, the water table after the material reaches the water table, these are big areas of uncertainty, and these are the things that we think the DOE should be focusing on, and they are.

Mr. HALL. And if they focus on them, there is something they can do about it to keep us on target for the projections that have been made?

Mr. COHON. The time projections, you mean. The Board feels that the current schedule, which has been the schedule in place for some years actually, of a suitable determination in 2001 is very ambitious. That is not to say it is not doable but there is considerable work yet to be done.

I want to emphasize very strongly that the viability assessment was an extremely important milestone. Even though it does not establish suitability, nor was intended to, it allowed the DOE to bring together and integrate all the information that it had collected to date and make sense out of it, make a whole picture out of it, and to identify very clearly the remaining information that they need to get.

That could not have been said even 1 year ago, Mr. Congressman, and certainly not 5 years ago or 10 years ago. That is real progress by the DOE.

That is not to say we don't have work ahead of us. As I said, we do. It is a very ambitious schedule to get all the work done before 2001 when the suitability determination is scheduled to be made. We will see if they can make it.

Mr. HALL. Anybody else? Chairman Jackson, would you like to comment on that?

Ms. JACKSON. To this point, I think the schedule has been proceeding according to what you have heard in the past. I think that we do have some concern relative to having adequate resources if this bill passes. Because it also requires activity on an interim storage facility, we need to have the resources to allow us to be able to move along in a dual way on both the central interim storage facility and the repository. But as things stand in terms of satisfying the requirements of the existing law with the schedule that has been laid out for some time now, things seem to be moving along in that way.

Mr. HALL. I thank you and I yield back my time.

Mr. BARTON. Thank you, Congressman Hall. The Chair is going to recognize the gentleman from Massachusetts. Would it help the gentleman if we recognize you for 10 minutes?

Mr. MARKEY. That would be so great.

Mr. BARTON. Because I am going to ask some more questions, but if you can do it in 10 minutes, you indicated you had some other activities.

Mr. MARKEY. Excellent.

Mr. HALL. Eight minutes have already gone.

Mr. BARTON. We are on a logarithmic scale. We would recognize the gentleman from Massachusetts for 10 minutes.

Mr. MARKEY. Thank you, Mr. Chairman. That will help me to recap just how we got here today. It all begins in the early 1980's on this committee when the nuclear industry comes in lobbying us passionately for the passage of the Nuclear Waste Act. They just push us toward passing this legislation, demanding it, insisting upon the bill passing to solve the nuclear waste issue.

In effect, they testified at this very panel, telling us that it is not that hard to solve the nuclear waste problem and that they will cooperate with our government in helping to get this problem solved, working closely with the Reagan administration in order to accomplish the goal; the Reagan administration agreeing it is a problem that can be solved but consulting with the private sector all the way, who is demanding that the legislation pass.

People like me, I oppose the bill because there are NEPA exceptions built into it, and they are not going to build a repository big enough for defense waste as well.

If there is a nuclear waste problem, why don't we build a facility big enough for the military nuclear waste as well, which they don't want to do because they just have their own little public relations problem.

But the bill passed, and what it set up was a process whereby several different potential waste sites around the country would be studied, including sites in New Hampshire, Maine, North Carolina, Tennessee, Louisiana, Texas, Washington, Nevada. The plan was to eventually site one dump east of the Mississippi and one west of the Mississippi. That is where we were in 1982.

And then the sites started dropping off as the Reagan administration was looking at these different possibilities. Jim Baker did not want New Hampshire on the list. I don't know why. I forget what the exact reason was why New Hampshire shouldn't have a

nuclear waste site, but they took New Hampshire off of the list. And Maine dropped off because of the objections of Senators Mitchell and Cohen, two significant players in the Senate at that time. North Carolina, because Jim Broyhill was the ranking member on this committee at the time. He didn't think North Carolina would be a good site for nuclear waste. And Louisiana was well represented by Bennett Johnson over in the Senate at the time, and he felt that the salt mines in Louisiana weren't the kind of place you should look to characterize for——

Mr. BARTON. Is there a question?

Mr. MARKEY. Like most Congressmen, most of my questions come in the form of answers.

So then you have Washington State. You have the Hanford Reservation up there. Tom Foley, at the time Majority Leader, didn't think the Hanford site would be good, so that was taken off as well. And Jim Wright came from Texas, which was very helpful in making sure the Texas sites would also be removed.

Mr. HALL. We don't need it in Texas.

Mr. MARKEY. We don't need it in Texas. Then it came to: where can we put it now after we have gone through this very detailed scientific study about where it should go? Let's see, which State only has two Congressmen and two Senators? Let's pick the smallest State we can find and stick it with the "nuclear queen of spades."

And this committee as a result comes back in 1988, and we pass a new law based upon our own very detailed scientific study, and we pick Nevada. We pick it, the committee. And it is under pressure from the nuclear lobbyists who are sitting out in the audience at that time, who are saying, pick Nevada. They lobby each one of us. They come into our offices. They demand, they beg, they cajole. And so we passed the bill saying it is Nevada, based upon the nuclear industry's demands that we do so.

Now, what does the industry do now? Well, when DOE can't meet the ridiculous deadlines that were set by the nuclear lobbyists demanding the Congress pass laws toward that goal, and hasn't satisfied the political problems that the industries have back in their own home States, they sued the Department of Energy for breach of contract. They sued them after representing to the industry, to the Congress, and to the administration, that the problem was solvable. Never mind that the contract contained provisions allowing for unavoidable delays. They sue.

Now, this is after the Reagan and Bush administrations can't get it done, the two most pro-nuclear administrations in the history of the United States. It is not as though the Department of Energy during those 12 years wasn't completely and totally committed to trying to solve the problem. It was only that it was unvoidable. So they sue and they convince the courts to buy their dubious breach-of-contract arguments.

Now, the Justice Department testimony tells us that the industry is now asking for over $8 billion in damages for those breach of contracts. If the courts were to award them, that would empty the nuclear waste fund. Moreover, more and more utilities reach the point in time when they come to the head of the line of companies who would have been eligible to get rid of their waste, had DOE

been able to meet the January 1998 waste acceptance deadline, and more and more lawsuits will be launched.

What remedy will be available to them if the nuclear waste fund is empty? Presumably it would be deferral of further payment of fees into the fund. And so what I can very easily see happening here is a feedback loop of litigation, resulting in further delays, resulting in yet further litigation. Essentially, the industry will be transforming the nuclear waste fund into a giant nuclear Ponzi scheme in which early winning litigants are compensated out of the fees paid by other utilities, until the whole radioactive house of cards ultimately collapses.

What happens at that point? The utilities force the taxpayers to move in and pay for cleaning up the mess made by the industry in demanding to the Congress that we pass an unachievable goal and then sueing to deplete the fund that was going to be used to accomplish that goal. And then they turn to the taxpayers who had nothing to do with this debate from the get-go and ask them to pick up the costs for eternity of solving the problem. And at the same time they pocket the judgments in the cases, in the settlements that they reach with Uncle Sam.

So my concern here is that as we get deeper and deeper into this story, more and more people forget how it all started, how we got to this point, how all of the original assumptions were completely unrealistic; and that we, the Congress, and the American people are now suffering from our detrimental reliance upon the holding out by the nuclear industry that this was an eminently solvable problem; and that they should be ashamed of themselves for then suing our government to deplete the funds that were put into this kitty in order to solve the very problem that they wanted us to work on.

And the people who were down here, who were doing their best to deal with this issue scientifically, should be praised because they are doing their absolute best. But they didn't pick a site near an earthquake fault; we did. And as we ask them to reconcile this decision with the assignment which we have given them, it is natural that it is going to cause a lot of problems.

So make no mistake about it: The industry has no intention of ever seeing a permanent repository opened. Ever. They have no concern about it at all. Never have, never will. They will be content to leave the problem festering out in a warehouse in Nevada in the hope that some future generation will find a way to deal with it.

We are engaged here in an intergenerational punting of this environmental issue. Hopefully two and three generations from now, they can figure it out. That is what this generation of nuclear executives say. Someday they may come back and even convince us to spend tens of billions of dollars on this issue. Who knows?

But I think we have a responsibility to make sure that this problem is solved in our generation. We consume this nuclear electricity. We get the benefits of it. We should solve the problem, and we should not allow the nuclear industry to allow for this highest environmental goal which our society has, that is, the siting of a permanent nuclear waste repository, to be lost because it no longer squares with their short-term political agenda.

So my question is to you from the Environmental Protection Agency——

Mr. BARTON. You have got about 45 seconds.

Mr. MARKEY. [continuing] How bad would it be if these environmental standards were compromised? Is it a really dangerous environmental condition that will be created if this law is passed? How dangerous is it?

Mr. PERCIASEPE. Well, I don't think that we have progressed far enough from all the work that is being done to know exactly what could happen. That is part of the licensing process. The key to the licensing process and the point that I was trying to make in my testimony is that you want to have protective standards that provide the public confidence that the work that will be done to design and implement this project will be protective and they should be equivalent or very similar to what we would do anywhere else in the country. And I pointed out that we have already done this at the waste—the WIPP site. We do this for every hazardous waste site around the country.

And the question is, the point I was trying to make, Congressman, is that the standards, if appropriately set in a way that is protective as we have been in all areas of these kind of—whether they be hazardous waste disposal or repositories, geologic sites, whatever—that that bill is public confidence and that—so I can't predict nor have I predicted——

Mr. MARKEY. Would EPA recommend a veto in its present form?

Mr. PERCIASEPE. Yes, they would recommend to the President that the bill in its present form be vetoed. That is in my written statement.

Mr. BARTON. The gentleman's time has expired. The Chair is not going to go vote. So I am going to miss this vote honoring King Hussein. It is going to be a unanimous vote with the Members present, so I am going to stay and continue the hearing. Obviously if members wish to go express themselves on that, they should.

I am going to recognize the gentleman from Michigan for 10 minutes. If other members are not present when he concludes, I will resume questioning this panel but I want to finish this panel.

Mr. DINGELL. I am very anxious to not miss this vote. Let me first of all ask this question quickly. We spent now about $9 or $10 billion on characterizing this site, have we not? What is the number?

Mr. BARRETT. We have spent a total of about $3 billion on the Yucca Mountain site, including payments to States and oversight at Yucca Mountain.

Mr. DINGELL. And we have collected $9 or $10 billon and we are going to have to spend the whole $9 or $10 billon to characterize it at the present rate of expenditure before we complete this site, are we not?

Mr. BARRETT. We have looked at the total system.

Mr. DINGELL. Yes or no?

Mr. BARRETT. Yes.

Mr. DINGELL. So we have got to do something to solve the problem; right?

Mr. BARRETT. Yes.

Mr. DINGELL. Let's talk about the Tucker Act. U.S. versus Winstar sounds a very important cautionary note when congressional legislation could be construed as affecting later contracts between private parties and Federal Government. Is that not so? This goes to Mr. Schiffer. Mr. Schiffer?

Mr. SCHIFFER. Yes, sir, that is one way broadly to read Winstar.

Mr. DINGELL. I went through this with regard to the Penn Central business and I remember it cost us about $7 billion because the Congress was not careful in that particular matter. On the basis of the holding in U.S. v. Winstar, it very simply is that Congress should avoid drafting legislation that arguably affects pre-existing governmental contracts. Is that not so.

Mr. SCHIFFER. I think that is also broadly so.

Mr. DINGELL. Is it possible that this legislation does affect pre-existing government contracts?

Mr. SCHIFFER. Without suggesting that I have really been through the legislation enough to comment in detail, there are questions raised.

Mr. DINGELL. But it is a matter of concern, is it not?

Mr. SCHIFFER. That is correct, sir.

Mr. DINGELL. Now, the amount of Winstar damages, the "Washington Post" pegs it at $32 billion. I understand about $8 billion in potential claims are lying under that particular case; is that right?

Mr. SCHIFFER. In the Winstar line of cases themselves?

Mr. DINGELL. Yes.

Mr. SCHIFFER. It is hard to know exactly because many of the complaints do not state dollar amounts. We obviously think the claims are highly inflated and we think they are going to come in significantly below. But any way you look at it, there are substantial sums at stake.

Mr. DINGELL. You might get a surprise the other way, might you not?

Mr. SCHIFFER. We are completely confident, as we always are.

Mr. DINGELL. The courts are notoriously spending taxpayers' money in lawsuits of this kind, are they not?

Mr. SCHIFFER. I am sorry?

Mr. DINGELL. The courts are notoriously generous with the taxpayers' money in cases of this kind, are they not?

Mr. SCHIFFER. Since we tend to believe in stinginess in that regard, I would sometimes characterize it that way.

Mr. DINGELL. The courts have a different view, do they not?

Mr. SCHIFFER. That can be true.

Mr. DINGELL. From what source would the damage claims be funded?

Mr. SCHIFFER. That is an issue that is being looked at by our Office of Legal Counsel.

Mr. DINGELL. If the fund is exhausted, they then come out of general revenues, however, is that not so?

Mr. SCHIFFER. They could either come out of the appropriation for the payment of judgments or settlements, or if our Office of Legal Counsel determines that some other fund is available, that would be the source. I am just not in a position to speak to that now.

Mr. DINGELL. Now, Mr. Schiffer, you believe the plaintiffs would accept to construe the funding provisions of H.R. 45 as amounting to a congressionally induced breach of contract, do you not?

Mr. SCHIFFER. I always assume the plaintiffs are ready to do that type of thing.

Mr. DINGELL. I recognize you do not speak to the merits of such arguments, but I do appreciate your raising this concern. Now, we are speaking in theoretical terms, but do you expect the plaintiffs asserting such arguments to cite the holding in U.S. v. Winstar as the basis for the claims?

Mr. SCHIFFER. I think the plaintiffs in these cases have been doing that in articles I have read and in pleadings they have filed.

Mr. DINGELL. If such breach of contract claims succeeded and damages were awarded, where would the court get the money from? I am assuming it would either be the judgment fund or the nuclear waste fund; is that right?

Mr. SCHIFFER. That is essentially the case. That is what is being studied now.

Mr. DINGELL. How do we avoid these potential Winstar problems? What drafting has to be done to avoid that?

Mr. SCHIFFER. I don't think, Congressman, I am in a position to speak with any precision other than to offer our assistance in working with the staffs.

Mr. BARTON. Would the gentleman suspend? Simply, if you wish to make the vote, Congressman Dingell, you have got 3 minutes in the vote and 5 minutes in the questioning time.

Mr. DINGELL. Mr. Chairman, your wise counsel is accepted. With your permission I will leave the room.

Mr. BARTON. I will keep this panel busy until you or another member comes back.

Mr. DINGELL. Thank you, Mr. Chairman. I will return promptly.

Mr. BARTON. You have 5 minutes remaining when you do return. In the absence of any other member, the Chair is going to recognize himself for such time as he may consume until other members return to ask questions. I wanted to ask the distinguished Chairwoman of the NRC and the gentleman from the Waste Transportation Board—he may have expertise on this. The Governor and the Congressman from Nevada talked about the disadvantage of this site because of earthquakes, and mentioned that there had been some earthquakes approximately 3.0 on the Richter scale and one as large as 4.0 within the last several months or at least several years. My understanding of the Richter scale is that if you go from a 3 to 4, that is a factor of 10 in the increase. My understanding is also that while the site design has not been finalized, preliminarily they are looking at a standard that would withstand an earthquake over 6.5 and maybe as high as 7.0. So what is the difference in the degree of power between a 3.0 earthquake and a 7.0 earthquake?

Ms. JACKSON. Factor of 10,000.

Mr. BARTON. So although we have had some earthquakes in the region that have obviously been measurable, there has been no earthquake that would exceed what we expect to be the design capacity of the facility, is that correct?

Ms. JACKSON. As far as we understand from what DOE has represented in terms of the design of the waste packages, that is correct.

Mr. BARTON. Dr. Cohon, do you wish to comment on that?

Mr. COHON. Yes, I do. I don't want to preempt a line of questions that you are going along. Shall I wait till you have more earthquake questions?

Mr. BARTON. Will you answer that one and my fertile mind will come up—unlike Congressman Markey, I like to ask questions and not assume I know the answers.

Mr. COHON. The DOE has found, or the DOE's position is that seismic hazard, earthquake hazard, should not be viewed as a disqualifying condition for the site. The Nuclear Waste Technical Review Board agrees with that. We think they are correct in that assessment.

Just to add a little more detail to Chairman Jackson's commentary with you and your own point, the location of this most recent swarm of earthquakes, a fault called the Rock Valley Fault, is not a surprise to DOE or to anybody else who studied the site. Indeed, it was anticipated that there would be earthquakes there. And furthermore as you pointed out, Mr. Congressman, the intention for the design—and we are confident that DOE can achieve this—is to have a design for the facility which would not be affected by earthquakes as large as the magnitude you mentioned in that location, some 25 to 45 kilometers away from the Yucca Mountain site.

So to summarize the key point, we do not believe it is a disqualifying condition.

Mr. BARTON. Let's assume the worst case. Let's assume that we had a massive earthquake, 7.0, perhaps even larger, and we actually had the interim facility licensed and in operation, which I understand is going to be an above-ground facility probably, with some coverage from the elements in terms of rain and wind.

These canisters—what is the worst thing that could happen to one of these canisters in the interim facility, not down in the mountain in the permanent, but upstairs if we had a massive earthquake?

Mr. COHON. Everything I just said pertained to the repository, the underground permanent facility. None of it pertained to the surface. I would have to defer to someone else on the surface. We have not studied that.

Mr. BARTON. I have been told, and obviously am willing to be corrected, with these canisters the worst thing that would happen is they would dump over on their sides.

Ms. JACKSON. The standards we apply today for dry cask storage canisters would allow them to withstand an earthquake of the magnitude that you describe.

Mr. BARTON. Obviously we would rather there be no earthquakes or fewer earthquakes or smaller earthquakes, but this concern—and from a political standpoint it is obvious that people are going to be concerned if the thing is located where there have been some earthquakes. But from an engineering standpoint and a design standpoint, as Dr. Cohon said, in the Department of Energy's view

and the Regulatory Commission's view, that is not something that hasn't been accounted for.

Mr. COHON. Right.

Mr. BARTON. Is there anybody that wants to dispute that? Madam Chairwoman, I would like for you to directly comment on the bill that is before us. In your view or the Commission's view, do you believe that if it were to pass and become law, that it would give the NRC the flexibility to properly manage and regulate this site or make sure that it was in a safe fashion put into operation?

Ms. JACKSON. Thank you, Mr. Chairman. If the understanding were that the 100-millirem standard embodied in the bill is meant to be an upper limit within which the NRC were able to implement a regulation, with a 25-millirem standard as a fraction of that; further, if the NRC were allowed to, our anticipation would be to, in fact, have an analysis done of an intrusion scenario having to do with a bore hole kind of analysis. If those kinds of understandings were there, we feel that H.R. 45 allows us the flexibility that we need to implement our rule.

Mr. BARTON. Mr.—I am going to say Perciasepe—am I close?

Mr. PERCIASEPE. That is perfect.

Mr. BARTON. You indicated before the break that you wanted an opportunity to respond to some of the comments on the differences of opinion about the radiation standard that is currently under review in your organization as opposed to the NRC. I have got some other questions on that, but I want to give you an opportunity to respond before I ask them.

Mr. PERCIASEPE. I won't go into great detail because I don't think it will serve the committee for us to debate it in great detail here, but I did want to say one thing about it. Our general policy in the administration and certainly at EPA is that potential sources of drinking water, and you can say in particular in an arid part of a country, ought to be protected, and no one here is saying that shouldn't happen.

Our general policy also follows that the protection should be such that some future generation isn't going to have to treat it in some way to be able to utilize it. I think what we end up discussing here is how much contamination might occur before that would become a problem.

Mr. BARTON. You are focusing just on your concern about the groundwater.

Mr. PERCIASEPE. That is correct, sir, and its utility in the future. And I guess I would say if this site is good and, you know, a lot of—you are already questioning the people who are working on that aspect of it—really this should not be an issue and we certainly don't, I believe, want to set up a system, as I mentioned earlier, a system where for some reason we decide that the area around here should have less protection or standards that are not as protective as we would have any other place in the United States. It seems like we would want just the opposite.

We want to make sure that given the responsibility that the State of Nevada would be taking on here, that we would want to make sure that the protection is equivalent to what other people have. That being said, we continue to look pretty hard at how you would apply these standards, and I think that within that frame-

work continues to be part of EPA's work on what its standards package would be. So I would just leave you with that and some of the philosophical reasons why I think we are very interested in groundwater protection.

Mr. BARTON. Now, we have got some other members here, so I am going to let—I have filibustered long enough, I guess, but I do have a few questions on this standard. The EPA was directed in 1982 on the Nuclear Waste Policy Act to develop the standard. They actually, to their credit or your credit—your agency actually did but the courts threw it out. We came out in the Energy Policy Act in 1992 and said you ought to issue—again asked, directed that you should issue the standard. That hasn't happened yet.

In preparation for this hearing, we were told at the staff level that Moses has come down from the mountains with the Ten Commandments and you are getting ready to issue the final rule, or at least it is on somebody's desk at the EPA, who is probably on vacation somewhere. When do you expect to actually have this final rule released? Is that subject to negotiations within the NRC? Are you all ready to go? Give us some guidance on timing.

Mr. PERCIASEPE. I appreciate the question. I think it is appropriate. First, we also are trying to work with the National Academy of Sciences recommendations that we got in 1996, and of course it is now 1999, and I think we need to get on with it. And I would agree with that statement. I think we are talking about weeks to maybe months, but I mean very soon we plan to—I want to personally visit the site. I think it is important for me to get a sense of what is going on out there. I am planning to go out there with the Department of Energy in a couple of weeks.

The schedule that was up here which is missing now, that is related to the schedule that everybody else has been talking about, I think is totally doable from our perspective. There it is. It has the EPA standards sometime this year, with it being available next year. And the time for that process I think is showing with a question mark in the middle of the year. I am sure we can beat that.

And I would also want to add, Mr. Chairman, we are not really negotiating with folks on this site. I do believe we are having, I think, constructive discussions with our colleagues that relate to how we should approach the standard-setting process within the confines of the law that you guys have provided to us. And I think that that has been a helpful thing to improve it.

Mr. BARTON. As the subcommittee chairman, let me give you some advice.

Mr. PERCIASEPE. Yes, sir, I am ready.

Mr. BARTON. It is only advice. It is not a mandate. I don't believe in too many mandates. Based on this hearing record, we are going to try to develop a consensus, at least on the subcommittee, about what changes need to be made in the pending bill and incorporate those on a bipartisan basis and have a subcommittee markup in the very near future, certainly within a month, a month and a half.

The Secretary of Energy has asked for a little time and we will try to honor that request. But this isn't something that we plan to be holding in abeyance for the next 6 months. So I would strongly encourage you to get with your people and Administrator Browner and whoever else is involved in these constructive discussions and

be constructive as expeditiously as possible, because we would like for you to—not you personally, but the agency to have its rule available to us before we go to markup.

Mr. PERCIASEPE. I appreciate that.

Mr. BARTON. The Chair will recognize the gentleman from Illinois, Mr. Shimkus, for 5 minutes.

Mr. SHIMKUS. Thank you, Mr. Chairman.

Mr. BARTON. Actually, Mr. Dingell is back and he had suspended.

Mr. DINGELL. I will defer, Mr. Chairman.

Mr. BARTON. I didn't realize that Mr. Dingell had come back. We will go ahead with Mr. Shimkus for 5, and then Mr. Dingell has 5 minutes remaining on his.

Mr. DINGELL. That is fine, Mr. Chairman. I thank you.

Mr. SHIMKUS. I thank the chairman. I thank the ranking member. It is good to see familiar faces.

In my second term now, I can start figuring out some folks who testified before the committee before. So welcome. And I apologize. This is one of the craziest schedules I have seen for a long time, and I have been up on the floor three times but haven't made it back into the room because of guests pushing me away to other areas. And I apologize for that. I would like to thank the DOE for the interim report. I think it is telling.

An initial comment I would like to make is that we also lose sight that we already have 78 temporary storage sites across the Nation. There are some benefits to locating them into one site, and I would encourage that we do that.

Also before I left, and this may have been addressed earlier and I apologize, I would like to know, Mr. Barrett, first can you define for me the difference between ''viability'' and ''suitability''? Was that asked earlier?

Mr. BARRETT. The viability is basically a status report of what we know about Yucca Mountain today as of 1998, the end of 1998. It lays out the work that we intend to do to get to the suitability, which is a higher decision.

The suitability is where the Secretary under the 1982 statute does the following; we have to complete the environmental impact statements, draft and final, have public hearings, receive comments from the public hearings in the State of Nevada, and receive a letter from the Chairman of the Nuclear Regulatory Commission. Then we would assemble all that information to see if the site meets the criteria necessary to be designated the Nation's geological repository. That statutory requirement is a much higher decision.

The viability is a status report to stop or to continue.

Mr. SHIMKUS. The viability assessment is going relatively well, we would think. There would be some disagreements, I guess. But if it is declared viable, do you know—with the viability indicating that it is a suitable site, but I can't use that word because of ''suitability,'' the administration, will they make the determination based upon viability or will they make it based upon suitability?

Mr. BARRETT. Well, the Secretary must determine that the site is viable, to continue to see if it could be suitable. This is higher level. So it is worthy—let me avoid the word ''suitable.'' It is worthy of continuing the scientific work to see if this site is scientifically

suitable to be the Nation's repository. If we can make the demonstrations on science that the site meets the suitability criteria, then the site would be recommended after we complete the administrative processes that are involved.

Mr. SHIMKUS. Will the political determinations be made in the suitability equation? Will political considerations be made in suitability determinations?

Mr. BARRETT. The process for the site to be designated the Nation's Geologic Repository Site has a political component to it. However, first there is the scientific component. That is what we are focused on now, the scientific suitability of the site. This is job one that we are focusing on. Once that is done, we have the chance for many public hearings throughout the Nation on this decision through the environmental processes.

Afterwards, the Governor of the State of Nevada as well as the legislature of the State of Nevada under the NWPA has the authority, if they wish, to disapprove the site. The site would remain disapproved unless there is a ruling by the Congress to override their disapproval. So there is a political component as well as a scientific. But we are continuing to focus now on the scientific suitability of the mountain.

Mr. SHIMKUS. Based upon listening to the Governor's testimony, I have great respect for him, but there was nothing positive about the site, the facility, and anything that we are planning on doing. He also brought up the groundwater issue.

So I would like to ask you and Mr. Cohon: Does recent evidence suggest that rapid groundwater transport affects your assessment of the Yucca Mountain site? Do you adhere to his position, the Governor's position on the groundwater issue?

Mr. BARRETT. Water is the predominant mechanism that can transport radioactivity from the repository site. So water is the central focus, and the central issue of the scientific suitability considerations, as well. As we go through a licensing process, would have to demonstrate the performance of the site for many thousands of years. So water is critical and water is key. This is where a majority of our work is focused. Dr. Cohon mentioned, the unsaturated zone, the interactions of the water with the waste package and the design of the repository, and also in the layers below the repository in the saturated zone. Water is key.

Regarding the standard. The standards will be set under law by the EPA and by the NRC. We will have to scientifically demonstrate we meet those standards, whatever they are. And if we can scientifically demonstrate this in a rigorous NRC hearing process, then I believe the site would go forward.

Mr. SHIMKUS. Could Mr. Cohon respond?

Mr. BARTON. Sure.

Mr. COHON. Thank you for asking. Let me add to that. Mr. Barrett said water is the key mechanism or the key part of the mountain that will affect the waste. It is also a key source of uncertainty. "Uncertainty" is a very important word when we are talking about Yucca Mountain and this repository and ultimately the decision as to whether or not it is suitable and whether one should go ahead.

To elaborate a little bit on Mr. Barrett's comment with regard to suitability, the Board believes that how uncertainty is treated is a key dimension of a suitability determination. And the decision that will have to be made in 2001 or whenever the Secretary gets to that point will be whether the amount of remaining uncertainty about DOE's projections is acceptable; that is, are we confident enough that the mountain will work or not? And that is a key dimension of suitability.

The work that DOE is involved in now and until it gets to the suitability determination is all about trying to reduce that range of uncertainty so we can try to learn more and more about groundwater, about the materials that they would use in the canisters so that we can narrow that range of uncertainty.

Groundwater, the very issue you raised, Mr. Congressman, groundwater travel time is one of the largest sources of uncertainty. We just don't know. Furthermore, we will never know exactly how fast water will move through this mountain. That is just not within the realm of today's science.

Just one additional point. You didn't say it and the Governor didn't in his verbal comments, but I think it is probably in his written remarks. The key finding made by DOE was with regard to an isotope called chlorine 36 which indicated that water had moved through the mountain more rapidly than people would have predicted before this finding was made, which is why they do the studies they do. Very valuable finding. That does not mean, though, that water will move in 50 years—that is the estimate—from the surface to the repository. It just means it can. And that is not a big surprise because we know this is a very fractured geology with so-called fast pathways. The real question is how much water will move through these fast pathways and will it seep into the tunnels where these canisters are located. These are questions we need to try to make predictions about and it is difficult.

Mr. BARTON. Before I recognize Mr. Dingell, just a couple of follow-ups on that. What is the average rainfall on the surface?

Mr. COHON. I will blow that estimate. Let me turn to somebody who really knows.

Mr. BARRETT. Under present climate conditions, approximately 7 inches of rain on the surface.

Mr. BARTON. Seven inches per year.

Mr. BARRETT. Per year, yes.

Mr. BARTON. And the interim storage facility if it is put there is going to be on the surface; isn't that correct?

Mr. BARRETT. That is correct.

Mr. BARTON. The water table that the water would eventually enter, how far below the surface is that?

Mr. BARRETT. Well, from the crest of the mountain, it is about 1,500 to 2,000 feet, depending on where you are. Where H.R. 45 envisions probably an interim storage site on the Nevada test site, the water level varies. We don't know exactly where we are going to place an interim storage site, but probably about 1,000 feet.

Mr. BARTON. About 1,000 feet in between where you would probably put the interim storage facility and where you think the water table is, the material between there is this rock that is fractured?

It is not sandy loam? It is generally impervious unless there is a fracture in it. Is that correct or incorrect?

Mr. BARRETT. I think we are confusing two different types of facilities here. There is the geologic repository. That is the tunnels under the mountain. That is highly fractured. If you would put in an engineered facility, which would be a concrete pad with storage canisters on it that the Nuclear Regulatory Commission certified, that would probably be in the area of 25, a little bit to the east, where Yucca Mountain is. That would be probably on a flat, Jackass Flats in that general area, or Midway Valley. There the surface is on alluvium primarily which is just like gravel. Exactly how far down that alluvium is, how far down I don't know. The water level is fairly deep. It is probably alluvium down to some depth of several hundred feet. Then you may have volcanic fractured tuff down to the water table.

But there are differences—for interim storage. There is basically complete containment through the canister system, which engineers could maintain indefinitely. So there should not be leakage. The NRC requirement would be that the engineered canisters for interim storage would not leak and there would be double containment and seals.

Mr. BARTON. That is the point I am trying to get to. We have got a decision to make on the permanent repository, but the focus of the bill before us is really to set up the possibility of an interim facility while you are continuing to assess—as you say, the Department's priority is the permanent facility. And if water transmission is the key issue, I am trying to establish the water transmission from any contamination from the interim facility, which is on the surface and in these canisters. And if I understood you just correctly, you said that is not a problem.

Mr. BARRETT. The discussion about appropriate long-term drinking water standards I do not believe is an issue with an interim storage facility. That is an issue for a deep geologic repository system.

Mr. BARTON. Madam Chairwoman did you want to?

Ms. JACKSON. Right. The requirements that we have for canisters to store fuel today onsite are such that contamination of the drinking water source is not an issue for the period over which those canisters are certified. Now, to be honest——

Mr. BARTON. Do you agree with that, Mr. EPA?

Mr. PERCIASEPE. Is that the short version of Perciasepe?

Mr. BARTON. I can say EPA.

Mr. PERCIASEPE. EPA is actually in there somewhere. I just realized that. I don't really know enough about the questioning that you are doing here to be—for it to be appropriate for me to answer that question. I would have to know more about what——

Mr. BARTON. We will put it in writing.

Mr. PERCIASEPE. But I do understand the question and certainly we would be willing to respond.

Mr. BARTON. Very briefly, before I recognize Chairman Dingell.

Ms. JACKSON. Our canisters are certified for a 20-year period. That is based on an early engineering convention. We are actually explicitly looking at the 20- to 100-year timeframe in terms of the suitability or what kinds of requirements would need to be imposed

on canisters for a facility like this. But that would be part of the regulatory requirement so that under whatever the water conditions are at the site, that those canisters could withstand that kind of environment on the surface.

Mr. BARTON. It is reasonable to expect that within a hundred years, within a hundred years, that some Congress and some Nuclear Regulatory Commission and some EPA are going to have a meeting of the minds on a permanent repository.

Ms. JACKSON. I would hope so, Mr. Chairman.

Mr. BARTON. The gentleman from Michigan for the remaining 5 minutes.

Mr. DINGELL. Mr. Chairman, thank you. Let me come back to this question of the Tucker Act and let me, if you please, ladies and gentlemen, address where the thing is at this particular time.

To Mr. Schiffer, the U.S. Court of Claims ruled in one case DOE's failure to begin accepting nuclear waste by the 31st of January 1998 constitutes breach of contract. Ten utilities have complaints with the U.S. Court of Claims alleging breach of contract and the fifth amendment, taking in damages totaling $8.5 billion. The Justice Department has not yet taken a position on whether any damages awarded to these cases would be paid for from the nuclear waste fund and is developing internal legal memorandum on that question; is that right?

Mr. SCHIFFER. Yes, sir.

Mr. DINGELL. Okay. Assuming my understanding of that is correct, let me ask you a couple more questions.

Mr. Schiffer, I assume it is possible for more utilities to file cases before the Court of Claims and the total damages claimed could significantly exceed the current estimates of $8.5 billion; is that correct?

Mr. SCHIFFER. That is correct.

Mr. DINGELL. If that is true and you determine the damages could be paid from the nuclear waste fund, that could have a significant impact on the repository program, couldn't it?

Mr. SCHIFFER. I am really not an expert on the programmatic impacts. There seems to be some—seems to be logic to that question, sir.

Mr. DINGELL. Mr. Barrett, you want to comment?

Mr. BARRETT. Yes, sir; that certainly would have long-term impacts on the repository program.

Mr. DINGELL. This would hit the taxpayer pretty hard? It would also raise questions about the completion date for the long-term nuclear repository; isn't that so?

Mr. BARRETT. Yes, sir.

Mr. DINGELL. The next question: Has the Department of Justice or the Department of Energy taken a position on whether the Court of Claims' ruling that we have been discussing on page 4 of your testimony held DOE had breached its duty to begin accepting waste on January 31, 1998, as controlling for other cases before that court?

Mr. SCHIFFER. We see differences in the sets of cases. The rulings that we spoke of, the early rulings, the October rulings, dealt with cases where the reactors were shut down and so there were no—there was no ongoing payment of fees. Under those cir-

cumstances, the court found that the cases couldn't be remanded back to the agency to work out some sort of equitable contractual adjustment.

Mr. DINGELL. All of those lawsuits have a large potential liability to the taxpayers; isn't that right?

Mr. SCHIFFER. That is correct.

Mr. DINGELL. Now, with regard to the Nuclear Waste Policy Act of judicial decisions and pending litigation—this, then, is for Mr. Barrett. Mr. Barrett, on November 30, 1998, the Department issued an RTQ on the Supreme Court's decision not to review cases on DOE's contractual duties to utilities. It indicated that while the Court ruling was not a surprise, "The Department is concerned, however, about the potential adverse impact of the ruling on the program's ability to develop a permanent solution for the management of the Nation's radioactive waste."

Now, question, Mr. Barrett: I assume this is referring to the potential drain which actual damage awards might place on the nuclear waste fund; is that correct?

Mr. BARRETT. Correct; and the appropriations process.

Mr. DINGELL. Okay. Have you attempted to quantify the impact?

Mr. BARRETT. It is very uncertain until this plays out, as Justice stated.

Mr. DINGELL. Clearly not good.

Mr. BARRETT. It is not good.

Mr. DINGELL. What impact could this have on the repository program?

Mr. BARRETT. It is possible in the extreme cases that there would not be sufficient cash-flow for us to complete the scientific work that we would like to do on a repository.

Mr. DINGELL. Which means then there is a shift for the financing of that from the fund to the general revenues of the Treasury; isn't that right?

Mr. BARRETT. It becomes very complicated, but someone is going to have to pay.

Mr. DINGELL. Now, I know the Department does go through an annual audit of its operations. I assume this kind of continued liability is taken into account in that exercise. Is that true?

Mr. BARRETT. Yes, sir, it is.

Mr. DINGELL. This occurs, then, much like the 10(k) statements in private corporations' filings for the SEC; is that right?

Mr. BARRETT. That is correct. We have an independent audit.

Mr. DINGELL. Are the potential costs of litigation mentioned in your audits?

Mr. BARRETT. Yes, we have just received, working with our independent auditor, their input which will be part of our financial statement for the program, which will be part of our report to Congress that will be furnished to you this summer. We have just recently received that.

Mr. DINGELL. Can you give us any preliminary guesstimates as to what those numbers might be?

Mr. BARRETT. Yes, I can. What they have done is, following normal accounting practices, they have discussed the legal liability, and working with our lawyers on that, they have put in an estimate of $500 million which they acknowledge there are claims up

to $45 billion or more. But that is the normal, customary accounting where they go at the low side.

Mr. DINGELL. Somewhere between $500 million and $45 billion is the liability that is calculated at this particular and rather uncertain time; is that right?

Mr. BARRETT. That is what the independent auditors have placed in the report.

Mr. DINGELL. Is there any reason to believe that it could not be larger?

Mr. BARRETT. There are claims. It could be larger.

Mr. DINGELL. Thank you.

Mr. Chairman, I thank you for your courtesy.

Mr. BARTON. Thank you, Congressman Dingell.

The Chair would recognize Congressman Hall for 5 minutes.

Mr. HALL. Mr. Chairman, I would just like to ask the panel, how many on the panel oppose H.R. 45?

Mr. BARRETT. The administration opposes it. Secretary Richardson opposes it.

Mr. BARTON. The record shows the Department of Energy is opposing and the Environmental Protection Agency has raised their hands in opposition.

Mr. HALL. How many support it?

Mr. BARTON. We have more hands up, but they all represent the Nuclear Regulatory Commission.

Mr. HALL. Maybe this is the time to voice-vote it.

Mr. COHON. Congressman Hall, may we have the record show that the Technical Review Board abstained.

Mr. BARTON. And the Department of Justice abstained, I think.

Mr. SCHIFFER. I heard the gentleman say correctly that the administration opposes it, and so I didn't see the need to.

Mr. BARTON. I would assume, even within the Clinton administration, there can be disagreement among agencies. I may be wrong on that.

Mr. HALL. Not safely.

Mr. BARTON. Not safely.

Mr. HALL. For those who oppose it, I think I would ask you to give us what it would take to make it more palatable to you, because I hear a chairman here crying out for bipartisan support and to pass a bill that we don't have to go through the rigmarole of trying to override.

We do need a bill. And, Mr. Chairman, I would like unanimous consent to place a further statement in the record just after Mr. Markey's testimony. I had waited for him to come back. I wanted him to be here when I said what I said.

Mr. BARTON. You are going to put a written statement in the record?

Mr. HALL. No, I want to put an oral statement in the record. Just what I say, I want it to go in the record there.

Mr. BARTON. You are going to say it, but you want it placed in the record right after——

Mr. HALL. Right after Congressman Markey, yes.

Mr. BARTON. I have never had that kind of a request.

Mr. HALL. We have erased tapes. Been doing that at the White House.

Mr. BARTON. The Chair is going to temporarily rule without objection, but we want to let our counsel check with the Parliamentarians and make sure that that is within the precedents. But if it doesn't violate a precedent of the committee, we will certainly do that.

Mr. HALL. I just want to point out that Mr. Markey is very intelligent, very capable. He certainly expresses himself. He is entertaining. I am very fond of him. He is a friend of mine. We just don't vote alike, hardly ever.

But, in case my granddaughter should read this record in 20, 25 years, I want for them to know that there are two sides to the nuclear thrust and that there are those of us, like me, who would probably give every county commissioner a nuclear plant in their precinct if they really asked for it and we could afford it, and there are those like Mr. Markey—I understand, believe and respect him for his position—that are opposed to nuclear energy in any shape, form or fashion.

I would point out that energy is the cause of war or lack of energy is the cause of war. No question that the Japanese went south into Malaysia for energy when we forced them into World War II. No question that Hitler went into the Ploesti oil fields to get benzene for his tanks and his airplanes.

If we don't solve the energy problem, then we have nothing to expect. We sent 500,000 kids over to a desert, not really to support the people from Kuwait, but to keep a despot from getting control of all the energy, half the energy in the world.

I would just like for the record to reflect that there is a difference of opinion, although we have one more articulate than others on the committee, that there are those of us who believe that nuclear energy as an alternate source is an absolute necessity.

I say that because 10 or 15 years ago—and there are those here who remember—Mr. Markey had an amendment that would have killed the nuclear thrust in this country. There wouldn't have been another nuclear plant if his motion had passed. I respected him for it. He handled it well. He almost passed it. It failed because the vote was a tie. That is how close we came to losing the nuclear thrust.

I just wanted that in the record, Mr. Chairman, for future generations to read when they read this, and others to read it, to know that there are some of us that are as unreasonable maybe on one side as we think the others are on the other side.

But I guess—and I would like to see the fact that you all are divided in this thrust, but please give us not what is wrong with it, but how we can correct it. And I think we can get a bill through and might get a bill through that the President would sign.

And we certainly want our friend Bill Richardson to come over here, and if he has the pretty sole authority, or as the President indicated, we surely want to talk to him and visit with him.

Yes, Ms. Jackson.

Ms. JACKSON. The Nuclear Regulatory Commission does support the bill, and we have gone on record to say that. There are some changes that we would like to see incorporated into the bill, and that is part of our written submission to this committee.

Mr. HALL. That is good, and we have that, and that will be in the record.

I yield back my time, Mr. Chairman. Thank you.

Mr. BARTON. The gentleman's statement will definitely be in the record, and we will check with the counsel for both sides and the Parliamentarian, and as I indicated in my ruling, if it can be placed in the record immediately after the distinguished gentleman from Massachusetts, it will be.

But it will certainly be in the record, and if possible, it will be in at the place requested by the gentleman from Texas.

Mr. HALL. You can put it in both places if you want to, Mr. Chairman.

Mr. BARTON. That is another plan.

The gentleman from Illinois is recognized for what we hope will be the last 5 minutes of questions for this panel.

Mr. SHIMKUS. Thank you, Mr. Chairman. Again, I just want to reiterate the viability versus the suitability and using the terminology, the right terminology at the right time. At the end of our last round of discussions, we were interchanging those words again. That just confuses a poor old country boy like Mr. Hall or myself.

I am going to continue to scrutinize the document on the viability, and I think that is something that we should continue to pursue; and there is some information on the groundwater question that I asked before that I think directs what the DOE has said, the groundwater considerations make this a viable option. It is on page 20, in essence, as I read those statements.

A question for Mr. Barrett; again, this could have been asked earlier. The schedule in the assessment shows DOE will be ready to make a site recommendation to the President in the year 2001. Is it your understanding that Secretary Richardson supports this schedule and intends to meet it?

Mr. BARRETT. Yes, sir.

Mr. SHIMKUS. And then for yourself and Mr. Cohon, this will be my final question. In our next panel we will have Ms. Claybrook. She, in her written testimony, declares that this viability assessment provides conclusive evidence that Yucca Mountain should be disqualified. Do you agree that that is a true statement?

Mr. BARRETT. I do not agree. The Secretary did not agree.

Mr. SHIMKUS. Mr. Cohon?

Mr. COHON. The Nuclear Waste Technical Review Board does not agree with that. We believe that Yucca Mountain merits further study as the site for a potential permanent repository for high-level nuclear waste.

Mr. SHIMKUS. We will give Ms. Claybrook a chance to defend herself in the next panel.

Thank you, Mr. Chairman, very much.

Mr. BARTON. Thank you, Congressman Shimkus.

There will be written questions for each of you, or at least the agency's representative, to reply to; and as I indicated to the gentleman from the EPA, we would like your answers to be expeditiously returned because there is a very high probability that we are going to hold a markup on an amended version of H.R. 45 within the very near future.

Thank you for your attendance and you are excused.

As soon as the previous panel exits the room, we are going to hear from our third panel. We have today the Honorable LeRoy Koppendrayer, who is Commissioner of the Minnesota Public Utilities Commission. He is representing the Nuclear Waste Strategy Coalition.

We have the Honorable John Strand, who is Chairman of the Michigan Public Service Commission. He is representing the National Association of Regulatory Utility Commissioners.

We have Mr. David Joos, who is the President and CEO of Consumers Energy in Jackson, Michigan, and he is representing the Nuclear Energy Institute.

We have Mr. Richard Abdoo, who is Chairman and CEO of Wisconsin Electric Power, representing Wisconsin Electric Power.

And we have Ms. Joan Claybrook, who is the President of Public Citizen, and she is obviously here representing that distinguished public advocacy group.

We are going to start with you, Mr. Koppendrayer. Your entire statement is in the record, and we would ask that you summarize it in 5 minutes.

STATEMENTS OF HON. LEROY KOPPENDRAYER, COMMISSIONER, MINNESOTA PUBLIC UTILITIES COMMISSION, ON BEHALF OF THE NUCLEAR WASTE STRATEGY COALITION; HON. JOHN G. STRAND, CHAIRMAN, MICHIGAN PUBLIC SERVICE COMMISSION, ON BEHALF OF THE NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS; DAVID W. JOOS, PRESIDENT AND CEO, CONSUMERS ENERGY, ON BEHALF OF THE NUCLEAR ENERGY INSTITUTE; RICHARD A. ABDOO, CHAIRMAN AND CEO, WISCONSIN ELECTRIC POWER COMPANY; AND JOAN CLAYBROOK, PRESIDENT, PUBLIC CITIZEN

Mr. KOPPENDRAYER. Thank you.

Mr. BARTON. Put the microphone close to you, so that the recording clerk can hear.

Mr. KOPPENDRAYER. Thank you, Chairman Barton and members of the committee. I can honestly say after serving four terms in the State legislature that I really appreciate your sitting through testimony. I know it is like——

Mr. BARTON. We love it. We just eat this up.

Mr. KOPPENDRAYER. You always love this. The Nuclear Waste Strategy Coalition is an ad hoc group of State regulators, State attorneys general and utilities representing 41 members in 23 States. The coalition seeks the safe, effective and timely central storage and disposal of civilian waste from nuclear power plants.

The Nuclear Waste Policy Act of 1999, H.R. 45, before you will provide a much-needed comprehensive reform of America's civilian high-level radioactive waste disposal program. The Department of Energy defaulted over 1 year ago, as we have heard discussed in the earlier part of the day, on its contracts to begin removing nuclear waste from the power plants. Tons of high-level waste are now stranded at 73 sites in 34 States by the Department of Energy's failure to begin removing it last winter, as it promised in statute and contract.

Americans already have paid the money that we have been discussing, the $15 billion, into the Federal fund for nuclear waste disposal services. We are not getting that service. We continue to pay at a rate of $70,000 an hour, that is, the electric bill's portion, that is going into this fund.

Because DOE missed its performance deadline, there is threatened, also as discussed, a $40 billion cost. These are costs of further delay. As Mr. Barrett pointed out, the U.S. Court of Claims has found the Federal Government liable for these costs. That same court explicitly, we understand, prohibited diverting the money from the nuclear waste fund to pay for these costs. With each passing day, the cost of delay mounts and continued delay will drain the U.S. Treasury of tens of billions of dollars. So let's confront some of the excuses for not moving the waste. The Federal Government's obligation, the ability and the authority to move and store and dispose of the waste has frequently been misrepresented.

In addition, the delaying of central storage and disposal in Nevada has wrongly been portrayed as stopping the storage of nuclear waste when, instead, it launches a massive, expensive building program to store the waste, not in one site but in 73 sites in 34 States.

To date, the Department of Energy's civilian nuclear waste program has produced only progress reports, and progress reports, including viability reports, do not—the American people do not want to pay any longer for just reports. We have paid to have high-level radioactive waste removed from the power plants beginning January 31, 1998. DOE is not fulfilling its obligation when it misses these deadlines. Progress reports do not substitute for actual performance.

The Federal court decision and records have consistently found that DOE is obligated, able and authorized to begin removing the spent nuclear fuel from power plants for storage and disposal. Ongoing shipment and storage of spent nuclear fuel from 41 foreign countries, the Navy, and research reactors have demonstrated DOE's existing capability to transport and centrally store nuclear waste. DOE has also stated for the record that it is physically able to transport and store spent nuclear fuel and other high-level waste.

During the past 35 years, the Federal Government has averaged 68 noncommercial spent fuel shipments per year. Through the year 2010, the Federal Government has committed to another 3,000-plus of these noncommercial shipments. The technology, the facilities, the managerial expertise and the experience are already in place and being used to transport safely.

The Nuclear Waste Technical Review Board, as we heard from earlier, has also acknowledged that it is equally safe to centrally store nuclear waste and to transport waste to that site. It is to store nuclear waste at the plant sites. I will try and summarize, if that is my bell.

Mr. BARTON. That is your bell.

Mr. KOPPENDRAYER. In summary, we just have six points that we want to emphasize on behalf of ratepayers. That is, No. 1, begin waste removal; release the ratepayers' money for the intended purpose and no other purpose; provide a central temporary storage facility; and, four, continue a permanent disposal program; facilitate

the transportation of that waste; and cap the nuclear waste fund fee at one-tenth of one cent per kilowatt hour.

Thank you, Mr. Chair, and I stand for questions.

[The prepared statement of LeRoy Koppendrayer follows:]

PREPARED STATEMENT OF LEROY KOPPENDRAYER, COMMISSIONER, MINNESOTA PUBLIC UTILITIES COMMISSION ON BEHALF OF THE NUCLEAR WASTE STRATEGY COALITION

INTRODUCTION

Chairman Barton, members of the Subcommittee, I appreciate this opportunity to present testimony on behalf of the Nuclear Waste Strategy Coalition (NWSC). The Nuclear Waste Strategy Coalition is an ad hoc group of State utility regulators, State attorneys general, and utilities representing 41 member organizations in 24 states. The Coalition seeks safe, cost-effective, and *timely* central storage and disposal of civilian high-level waste from nuclear power plants. The Nuclear Waste Policy Act of 1999 (H.R. 45) before you will provide much needed, comprehensive reform of America's civilian, high-level radioactive waste disposal program.

The Department of Energy (DOE) defaulted over one year ago on its contracts to begin removing nuclear waste from power plants. Americans have already paid over $15 billion for nuclear waste disposal services we are not getting. We continue to pay at a rate of $70,000 every hour. Tons of high-level radioactive waste are now stranded at 73 sites in 34 states by the Department of Energy's failure to begin removing it last winter as promised in statute and contract. Because of this missed deadline an additional $40 billion to $80 billion in costs are threatened. Clearly, it is time to act.

Missed deadlines and further delay are unconscionable. Americans expect the federal government to take actions that *best* protects us and avoids squandering tens of billions of dollars of our money. After sixteen years and a deadline that DOE promises to miss by at least 12 years, the time to fix this program is way *past* due.

CONFRONTING EXCUSES

The federal government's obligation, ability, and authority to provide transportation and central storage and disposal of civilian high-level radioactive waste has frequently been misrepresented. In addition, the delaying of central storage and disposal in Nevada has wrongly been portrayed as stopping the storage of nuclear waste, when instead it launches a massive, and vastly expensive building program to store nuclear waste not at one site, but at 73 sites in 34 states. I urge subcommittee members to remember that the goal is to physically move, store and dispose of this radioactive waste in the best way we are now able and not be distracted by those seeking endless delay.

The U.S. Department of Energy

To date, the Department of Energy's civilian nuclear waste program has produced only progress reports. Progress reports, including the Viability Report, are not what Americans have paid for. We have paid to have high-level radioactive waste removed from power plants beginning by January 31, 1998. We have paid for the safe, centralized temporary storage and permanent disposal of nuclear waste from power plants. DOE is not fulfilling this obligation when it misses deadlines. Progress reports do not substitute for actual performance.

In its 1996 Indiana Michigan decision, the U.S. Court of Appeals affirmed that DOE was obligated to start moving waste on January 31, 1998, "without qualification or condition." DOE ignored the Court prompting 46 state agencies and 36 utilities to again seek relief from the Court. In 1997, the Court observed:

> "After issuing our decision in Indiana Michigan, we would have expected that the Department would proceed as if it had just been told that it had an unconditional obligation to take nuclear materials by the January 31, 1998, deadline. Not so. Quite to the contrary . . ."

As a result, the Court issued a writ of mandamus to the DOE on November 14, 1997. In that order, the Court explicitly found DOE authorized to begin providing temporary central storage of spent nuclear fuel from civilian power plants.

> "Given DOE's repeated attempts to excuse its delay . . . we . . . issue a writ of mandamus to correct the Department's misapprehension of our prior ruling. . . . *[S]pecifically we preclude DOE from concluding that its delay is unavoidable* on the ground that it has not yet prepared a permanent repository *or that it has no authority to provide storage in the interim*." [Emphasis added.]

United States Court of Appeals decision in Northern States Power Company, et al., No. 97-1064 consolidated with Nos. 97-1065, 97-1370, and 97-1398.

In late 1998 decisions, the D.C. Circuit of the U.S. Court of Claims again affirmed DOE's obligation. The Court of Claims then extended earlier decisions by the Court of Appeals to recognize federal government liability for costs mounting as a result of DOE's missed deadline to remove waste for central storage and disposal. In testimony presented before the 104th and 105th Congresses these costs have been estimated to be at least $40 billion to $80 billion. These are the costs of delay.

The cost of delay is separate, and in addition to, the cost of providing central storage and disposal of civilian high-level radioactive waste. Electric ratepayers pay one tenth of a cent per kilowatt hour of nuclear electricity into the Nuclear Waste Fund for central storage and disposal of nuclear waste. Ratepayer payments into the Nuclear Waste Fund are to pay for the work of disposal. In contrast, damages awarded by the U.S. Court of Claims are for the costs of delaying that very work. These costs are rightfully paid from the U.S. Treasury's Judgments Fund, and not from the Nuclear Waste Fund.

Using money from the Nuclear Waste Fund to pay damages resulting from DOE's missed deadline to perform would divert these funds from their intended purpose, violating the original statute under which they were collected. Since ratepayers would be assessed the costs of Nuclear Waste Fund expenses, using the fund to pay damages would amount to ratepayers paying themselves damages.

Beyond DOE's obligation to perform, DOE has also stated for the record that it is physically able to transport and store spent nuclear fuel and other high-level radioactive waste. During the past 35 years, the federal government has averaged 68 non-commercial spent fuel shipments per year. Through the year 2010, the federal government has committed to make 3,819 shipments (382 per year) of such non-commercial high-level nuclear waste. The technology, facilities, managerial expertise, and experience are already in place and being used to do so safely. DOE has publicly affirmed this on numerous occasions including in the Court record.

> The COURT: [Y]our brief, . . . on page 6 . . . seems to imply that it would be possible to establish an interim storage program . . .
>
> Mr. BRYSON [Representing DOE]: Well, we don't think we have the statutory authority to do that. I mean physically——
>
> The COURT: Forgetting a moment the statutory authority, it's physically possible, isn't it?
>
> Mr. BRYSON [Representing DOE]: It certainly is, Your Honor, . . .
>
> See Transcript of Proceedings in the United States Court of Appeals for the District of Columbia Circuit, Northern States Power Company, et al. v. Department of Energy and the United States of America, No. 97-1064, page 29, lines 4 to 19, Washington, D.C., September 25, 1997.

Ongoing shipment, and storage, of spent nuclear fuel from 41 foreign countries, the Navy, and research reactors demonstrate DOE's existing capability to transport, and centrally store U.S. civilian waste.

DOE is also legally authorized to act. DOE earlier successfully argued in the 10th Circuit of the U.S. Court of Appeals that it is authorized to transport and store civilian waste from power plants. When asked by the D.C. Circuit of the U.S. Court of Appeals if it wanted to surrender its authority recognized by the 10th Circuit Court of Appeals, DOE declined.

DOE is obligated, able, and authorized to provide the nuclear waste storage and disposal services the American people have paid for. It is intolerable that in missing its deadline DOE claims that at best it will perform 12 years late; and then only if everything goes perfectly. We believe that H.R. 45 is the best prospect to remedy this vexing problem.

The U.S. Nuclear Waste Technical Review Board

The Nuclear Waste Technical Review Board (NWTRB) was established to provide engineering and scientific input and oversight to the federal nuclear waste program. Although seldom stated, the NWTRB has acknowledged it is equally safe to centrally store nuclear waste, and to transport waste to that site, as it is to store nuclear waste at plant sites. A DOE-sponsored national assembly of State emergency management officials agreed noting that non-commercial high-level nuclear waste is moving safely and being centrally stored, and we should do the same for commercial waste.

Responsible stewardship of public money dictates that given two safe options, we should take the one that avoids squandering tens of billions of dollars. There is every scientific and economic basis to proceed with nuclear waste transportation, central storage and disposal. The NWTRB's research presents no evidence favoring leaving waste stranded at power plants.

Environmental Protection Administration (EPA).

We challenge EPA to tell us, if not the Nevada atomic test site, where? The alternative cannot be "nowhere" because nuclear waste *already* exists. It has to be somewhere. The alternative to centralized temporary storage is not the absence of temporary storage. Rather it is stranding high-level radioactive at 73 power plants in 34 states—every one on a major body of water and near population centers.

Does EPA really want to compare every power plant site in America to the Nevada Test Site regarding its environmental desirability for long term nuclear waste storage? Does EPA really think that environmental protection means indefinitely stranding nuclear waste in 34 states on the shores of our lakes, rivers, and oceans? Is this the *best* we can do as a nation?

Americans are right to expect the federal government to move waste to a central location because that *best* protects public health, safety, and the environment and saves tens of billions of dollars. High-level nuclear waste is best stored, and disposed of, in a place that is remote, arid, and was once used to explode atomic bombs—a place like the Nevada atomic test site. Even if something completely unexpected precludes using that site for permanent disposal, it remains the *best* site for long-term storage and best protects the environment while a permanent disposal facility is completed.

ITS TIME TO GET THE JOB DONE

Let me now turn to the 6 points the Nuclear Waste Strategy Coalition believes are critical to reforming the U.S. civilian radioactive waste program. To overcome past problems of the program's lack of public confidence, cost escalation, schedule lapses, and the risk of diverting ratepayer money from the Nuclear Waste Fund, 1999 legislation reforming the Nuclear Waste Policy Act must:

1. *Begin waste removal*—The federal government is unconditionally obligated to begin removing radioactive waste from the 73 temporary storage sites now at nuclear electric power plants in 34 states. It is not sufficient to simply take title or possession of the waste. The federal government must begin to remove waste from power plants across the nation and provide centralized temporary storage while the permanent disposal facility is being completed.
2. *Release ratepayer's money for intended purpose*—The American public is right to expect that the ratepayer-funded Nuclear Waste Fund will be used to address nuclear waste and that Congress will appropriate the necessary money from the fund to do so. In the next year alone, electric ratepayers will pay over $600 million into the Nuclear Waste Fund. The United States government promised to use these funds to begin removing high-level radioactive waste and to provide for its permanent disposal.

   Over $15 billion, including interest, has been paid into the Nuclear Waste Fund and nearly $8 billion remain held in trust by the federal government. Recognizing the complications of the federal budget scoring process, it is simply unimaginable to many that the 106th Congress would take ratepayer's money in the Nuclear Waste Fund for other purposes. This money was collected to provide safe, timely, and cost-effective storage and permanent disposal of civilian high-level radioactive waste. The American people are right to expect it will be released for this purpose, not kept to provide accounting camouflage for other federal spending. Use of the Nuclear Waste Fund for other purposes would be an unjust and fraudulent tax on the American electricity consumer.
3. *Provide a central temporary storage facility*—A temporary, centralized radioactive waste facility must be authorized, sited in Nevada, and funded to provide the United States with timely, safe, and cost-effective interim storage of radioactive waste. Congress must establish an aggressive waste acceptance schedule for storing waste in the interim facility. This facility must augment and facilitate our nation's permanent radioactive waste disposal program, not replace it.
4. *Continue a permanent disposal program*—Characterization of the Yucca Mountain, Nevada site must continue. State governments, utilities, and the public have acted in reliance on the federal government's promise that waste would be removed from power plant sites beginning in 1998 and permanent disposal provided. To ensure that deep geologic disposal remains an essential program element, within budget constraints, the program must be redesigned to improve management structure, reflect program priorities and provide incentives for efficiency.
5. *Facilitate transportation*—Authorize the designation, construction and operation of facilities to transport civilian high-level radioactive waste to a central temporary storage site and to a permanent disposal facility. Provide necessary

transportation corridors and rights-of-way to ensure access to the designated temporary storage facility and the permanent disposal facility.

6. *Cap the Nuclear Waste Fund fee*—Cap the Nuclear Waste Fund payments at the present one-tenth of a cent per kilowatt-hour to ensure that the program costs resulting from past performance problems of the federal government are not shifted to electricity consumers.

These six elements are needed in final legislation reforming the Nuclear Waste Policy Act to protect continuing consumer investment in the Nuclear Waste Fund that already exceeds $15 billion, and to ensure that the federal government fulfills its obligations for the interim storage and permanent disposal of civilian high-level radioactive waste. Civilian high-level radioactive waste now stored at 73 power plants in 34 states must be addressed. We believe legislation in 1999 is necessary and the time to enact it is now.

CONCLUSION

The Nuclear Waste Strategy Coalition cannot emphasize enough the need to enact H.R. 45. We must transport, and centrally store and dispose of civilian high-level radioactive waste. It is extremely important that we not be distracted or delayed by the those who would substitute ever lasting dialogue and "process" for actually doing the work that American's have not only paid for—but *trusted* would be done.

The 106th Congress faces an ever more compelling call to action. The first anniversary of DOE's missed deadline has come and gone. The federal courts three times affirmed DOE's unequivocal obligation to have started removing nuclear waste from power plants by January 31, 1998. The U.S. Supreme Court chose not to even consider DOE's request for absolution from its obligations. Now, the U.S. Court of Claims has determined federal liability for continuing delay and is determining the amount of damages that will be paid from the U.S. Treasury.

I recognize that there are powerful special interests fighting to preserve the status quo—to do nothing. Some of these special interests suggest that we are asking you to rush to judgment. If the 16 years in which we have wrestled with this dilemma is not enough time to see this program needs fixing, no amount of time will be enough.

Given the present status of America's civilian high-level radioactive waste program, comprehensive reform legislation such as H.R. 45 is our best hope. DOE's nuclear waste program, while making minor progress at great cost, is not meeting the needs of the nation. Decisive action is needed now. Congress must not miss this opportunity to enact H.R. 45.

Mr. BARTON. Thank you, sir.

We will now hear from the Honorable John Strand. Again, your statement is in the record in its entirety. We ask you to summarize it in 5 minutes.

STATEMENT OF HON. JOHN G. STRAND

Mr. STRAND. Thank you very much, Chairman Barton and members of the Energy and Power Subcommittee. In particular, I would also like to thank Michigan's representative, Fred Upton, for his continuing leadership on this very important consumer issue. The National Association of Regulatory Utility Commissioners, NARUC, is a quasi-governmental, nonprofit organization of the governmental agencies engaged in the regulation of public utilities in all 50 States and the District of Columbia. More specifically, NARUC contains the State officials charged with the duty of regulating the retail rates and services of electric and gas utilities operating within their respective jurisdictions.

These officials have the obligation under State law to assure the establishment and maintenance of such energy utility services as may be required by the public convenience and necessity, and to ensure that such services are provided at rates and conditions which are just, reasonable and nondiscriminatory for all consumers. Essentially, we represent ratepayers.

I will suggest to you that we have had substantial problems with the Federal nuclear waste program. Basically, that program has been a source of deep concern and enormous frustration to our Nation's utility ratepayers and regulators for many years.

We were checking the record before I testified here, and I found that as far back as 1986, a predecessor of mine at the MPSC testified on behalf of NARUC that we were at that time losing confidence in DOE's ability to manage the program. We called for a number of program reforms that, of course, have never materialized.

Consumers of electricity have two primary concerns. First, huge amounts of money have been collected from utility ratepayers to pay for the waste program—approximately $600 million a year, more than $15 billion since 1983, including interest, yet no waste has been moved from civilian reactor sites.

Second, the effective management and permanent disposal of nuclear waste are essential to minimize the life cycle cost of the existing nuclear plants that generate approximately 20 percent of the electricity used in the U.S. As delays continue, these costs grow in scope and in magnitude, in some cases denying consumers low-cost nuclear resources.

I will tell you, this doesn't make economic sense, particularly at a time when we as a nation are trying to move the electric utility industry into a competitive, market-based era. The need for congressional action to provide comprehensive reform and guidance is absolutely essential and is overdue.

I will give you one unfortunately not too funny anecdote that a number of States have suggested, only half jokingly, because we have noticed that the DOE has been accepting, moving and storing nuclear waste from 41 foreign countries that maybe the answer for the States is to secede from the union and file to have DOE accept and remove our waste as a foreign country.

We are not necessarily advocating that, but we do think it cries out for the fact that Federal action is needed.

I want to comment first of all on the viability assessment, a slight comment on basically what has happened as far as the court decisions and then conclude.

The viability assessment, in our opinion, is just another string of DOE progress reports. We are glad at least that the dates haven't been pushed back, but in reality we don't need more progress reports; we need the waste moved. This is what the American people have paid for. We certainly hope that after 15 years of extensive research, we have the ability to at least get some waste moved.

Second, as far as the recent Federal court decisions, we believe the implication of the court decisions makes basically our options quite clear. It is now up to Congress to fix this program. In the litigation swirling around this program, we have reached a judicial deadlock because of the fact that the cases brought by the States and utilities against the DOE in the U.S. Court of Appeals basically found that the DOE is legally obligated to begin taking the waste, but the act doesn't specifically require performance by the DOE. This is a deadlock, and we believe one that can only be corrected by congressional action.

I will suggest to you unfortunately that further court actions will be expensive, slow and reach incomplete conclusions just as the most recent U.S. Court of Appeals cases have demonstrated.

Let me conclude. As my comments on behalf of NARUC indicate, the need for the expeditious passage of H.R. 45 is imperative. Today we are still without the fundamental policy framework necessary to ensure that the Federal Government accepts and disposes of nuclear waste in a timely and efficient manner.

Let me give one warning. I will tell you that even if H.R. 45 is passed, I will suggest in and of itself that may not be enough to achieve the goals of the Nation's nuclear waste management and disposal program. After all, if you read the 1982 NWPA, it is perfectly clear as to the intent and requirements on the DOE. Passage into law of H.R. 45 will give the program the tools it needs to complete the job, but the program still must be administered; and I will suggest to you that substantial congressional oversight will absolutely be necessary.

In conclusion, NARUC commends the sponsors of H.R. 45 and supports the bill. The Nation's electricity consumers deserve to see real progress in waste disposal. We must not again fail them.

Thank you very much for the opportunity to address the subcommittee.

[The prepared statement of John G. Strand follows:]

PREPARED STATEMENT OF JOHN STRAND, CHAIRMAN, MICHIGAN PUBLIC SERVICE COMMISSION

Mr. Chairman and Members of the Committee: Good Morning. I am John Strand, Chairman of the Michigan Public Service Commission and Chairman of the Subcommittee on Nuclear Issues—Waste Disposal of the National Association of Regulatory Utility Commissioners, commonly known as NARUC. I am here today to testify on behalf of NARUC. I am grateful for the opportunity to provide NARUC's views on H.R. 45, the Nuclear Waste Policy Act of 1999, and on the specific issues raised by the Committee in its letter of invitation, including our views on the United States Department of Energy's (DOE) December 1998 viability assessment, the DOE's site characterization efforts at Yucca Mountain, and the implications of recent Federal court decisions on the DOE's obligations under the Nuclear Waste Policy Act of 1982.

NARUC is a quasi-governmental nonprofit organization founded in 1889. Within its membership are the governmental bodies of the fifty States engaged in the economic and safety regulation of carriers and utilities. The mission of NARUC is to serve the public interest by seeking to improve the quality and effectiveness of public regulation in America. More specifically, NARUC contains the State officials charged with the duty of regulating the retail rates and services of electric and gas utilities operating within their respective jurisdictions. These officials have the obligation under State law to assure the establishment and maintenance of such energy utility services as may be required by the public convenience and necessity, and to ensure that such services are provided at rates and conditions which are just, reasonable, and nondiscriminatory for all consumers.

With respect to the Federal Nuclear Waste program, no other organization representing the public interest has been involved with a fair resolution of this critical issue longer than NARUC. In 1983, shortly after the passage of the 1982 Act, NARUC established policies and procedures on the high-level nuclear waste program with the goal of protecting the interests of our Nation's consumers. Sixteen years later, we are still at it.

The Consumer Interest and Concern in the Nation's Nuclear Waste Program

Let me begin by outlining the interests and concerns of the consumers of electricity and the membership of NARUC regarding the DOE's Civilian Radioactive Waste Management program. This program has been a source of deep concern and enormous frustration to our nation's utility ratepayers and regulators for many years for two primary reasons. Our first concern is the huge amounts of money that have been collected from utility ratepayers to pay for the waste program despite the

fact that no waste has yet been moved from civilian reactor sites. Nationally, utility ratepayers pay approximately $600 million per year into the Nuclear Waste Fund, only a small portion of which, approximately fifteen cents on the dollar, is actually appropriated for the program. This Fund, which is supported solely by the Nation's electricity consumers, has accumulated more than $15 billion since 1983. State regulators have a compelling interest in the cost-effectiveness and success of the program because of our fiduciary responsibilities to the utility ratepayers. Let me put it another way—utility ratepayers have paid for the storage of nuclear waste at nuclear power plants through the rates paid to cover the capital costs of planned on-site storage. Ratepayers have also paid for the Federal nuclear waste management and disposal program run by the DOE through the 1 mil per kilowatt hour fee they pay to their electric utilities on the generation of electricity from nuclear generation stations. These are the fees that go directly from the utilities into the Nuclear Waste Fund to the tune of $15 billion. Now utility ratepayers are being asked to pay a third time—for expanded on-site storage as a result of the DOE's failure to meet the deadlines prescribed in the Nuclear Waste Policy Act.

The second reason for our concern also relates to consumer costs. The effective management and permanent disposal of nuclear waste are essential to minimize the life cycle costs of the existing nuclear plants that generate about 20 percent of the electricity used in the United States. Cost increases for expanding on-site storage, reactor decommissioning and centralized disposal of nuclear wastes increases the costs of nuclear energy overall, which in turn, can have a significant adverse affect on energy costs to consumers. This problem is becoming particularly acute as the nation heads into an era of competitive markets in the electric utility industry. Moreover, nuclear generation provides significant air emission benefits that will be jeopardized if the unresolved waste problem renders these plants uneconomic.

Since 1984, the NARUC has passed twenty-four policy resolutions on the nuclear waste program, including eleven that specifically encourage legislative revisions to the program. Today, we are still without the fundamental policy framework necessary to ensure that the Federal Government accepts and disposes of nuclear wastes in a timely and efficient manner. The NARUC commends the sponsors of H.R. 45 for undertaking the task of developing a workable legislative solution, and we welcome the efforts of this Committee to address the concerns of the millions of U.S. ratepayers that financially support this program.

NARUC's Review of the Department of Energy's Viability Assessment

The DOE has been studying a site at Yucca Mountain, Nevada, for more than 15 years to determine whether it is a suitable place to build a geologic repository for the nation's high-level radioactive waste. The viability assessment, released in December 1998 presents the results of DOE's study to date. While the assessment is generally framed by the DOE as a technical document, it nonetheless concludes "that Yucca mountain remains a promising site for a geologic repository and that work should proceed to support a decision in 2001 on whether to recommend the site to the President for development as a repository." In its concluding observations, the DOE indicates that its 15 years of extensive research has validated the expectations of the scientists that first suggested that remote desert regions of the Southwest would be well-suited for a geologic repository. The assessment further suggests that engineered barriers and natural barriers can be expected to reduce radiation exposures to future populations, even after as much as 300,000 years, to natural background levels that exist today.

Our review of the assessment leads us to conclude that the provisions in Section 204 of H.R. 45, which authorize and direct the Secretary of Energy to "design, construct, and operate a facility for the interim storage of spent nuclear fuel and high-level radioactive waste at the interim storage facility site" are necessary and appropriate. In our "Resolution Regarding Guiding Principles for Legislative Changes to the Nuclear Waste Policy Act," (attached hereto) NARUC called for the DOE to begin to take possession and remove high-level radioactive waste and spent nuclear fuel to meet its (now passed) January 31, 1998 deadline for complying with its legal obligation as soon as possible. The resolution further urged the U.S. Congress to designate the location of one above-ground, centralized, interim storage facility for spent nuclear fuel and that such site not be limited by the location or licensing of a permanent repository.

In sum, the viability assessment leads us to believe it is time to get on with siting, designing, and constructing an interim storage facility as soon as possible.

DOE's Characterization of the Yucca Mountain Site

The DOE's characterization of the Yucca Mountain site has been marked by delay. While we are encouraged by the recent progress made by the DOE in its Yucca

Mountain site characterization efforts, NARUC has long been of the opinion that the repeated delays in meeting the program deadlines are rooted in the Department's inefficient management and problems in controlling its contractors. In 1986, a commissioner from Michigan first testified before Congress on NARUC's behalf to warn of contractor control problems in the program, and lack of procedures to control excess program costs. And it's not only State regulators that have noticed. The General Accounting Office has consistently taken DOE to task for its lack of contractor control.

Our policy on nuclear waste legislation calls for fundamental program improvement. As the attached policy resolution states, NARUC urges Congress to improve the efficiency of the licensing process of the high-level nuclear waste repository without compromising health, safety, and environmental factors. Congress should encourage greater private sector participation in implementing certain aspects of the Federal program, such as management and implementation of the multipurpose container system, construction and operation of the centralized interim storage facility and implementation of the transportation system.

We are even willing to advocate fundamental changes to this program. If the DOE is unable to meet its deadlines, despite new legislation and financial assistance, Congress should consider removing the authority and responsibility for implementing the Civilian Radioactive Waste Management Program from the DOE and locate it in a new, single purpose federally chartered corporation. This point is still relevant today. If after the passage of legislation such as H.R. 45, the DOE continues to miss the deadlines imposed under law, then Congress should consider taking the steps necessary to complete this important project by using a new, more efficient organization.

Implications of Federal Court Decisions on DOE's Obligations Under the NWPA

The implications of the recent Federal court decisions are quite clear: It is now up to Congress to fix to this program. In the litigation swirling around this program, we have reached a judicial deadlock. In terms of the costs of the program, failure to enact this legislation could result in the Federal government paying huge damages to the utilities, damages that could run well into billions of dollars. Allow me to explain.

In 1995, the States and the utilities were compelled to file suit against the DOE by the Department's final interpretation of the 1982 Act, in which the DOE concluded that it had no obligation to accept nuclear wastes from civilian reactors, absent a final repository. Given the Department's dreadful record in its site characterization efforts, this position by the DOE was entirely unacceptable. In the first case that was decided by the U.S. Court of Appeals for the D.C. Circuit (*Indiana Michigan Power Co., et al v Dept. of Energy,* 88 F. 3d 1272 (D.C.Cir. 1996), the Court of Appeals concluded that the Nuclear Waste Policy Act of 1982 "creates an obligation in DOE, reciprocal to the utility's obligation to pay, to start disposing of the SNF [Spent Nuclear Fuel] no later than January 31, 1998" and that the statutory obligation to commence disposing of SNF no later than January 31, 1998, is "without qualification or condition."

The same Court, in November 1997 in *Northern States Power Co., et al v Dept. of Energy,* 128 F.3d 754 (D.C.Cir. 1997) reaffirmed DOE's unconditional obligation to begin to dispose of spent nuclear fuel by the statutory and contractual deadline, and found that utility and State petitioners had a clear right to relief, that DOE had a clear duty to act, and that petitioners should pursue "potentially adequate remedies" under the Standard Contract to address DOE's avoidable delay. In February 1998, both State and utility parties in *Northern States* filed motions with the Court of Appeals to enforce the Court's decisions in *Indiana Michigan* and *Northern States,* due to DOE's failure to undertake any action to comply with its obligations. In an unpublished order issued in May 1998, the Court of Appeals determined that despite its earlier holding that DOE has an unconditional obligation under the Act to begin acceptance on January 31, 1998, the Act "does not itself require performance." Accordingly, the Court declined "to requir[e] the DOE to perform under the contract." The Court did not, however, overturn its earlier holding that in construing its obligation under the contract to dispose of SNF, DOE could not claim that its failure to perform is an unavoidable, non-compensable delay under the standard contract.

In November of last year, the Supreme Court refused to hear two competing appeals of the Court of Appeals" decision. In *State of Michigan v. Dept. of Energy* (No. 98-225), the Court refused to hear an appeal filed by the States that the Court of Appeals should have provided additional remedies for DOE's failure to meet the statutory deadline, including an order to begin waste acceptance. In *United States v. Northern States Power Co.,* (No. 98-384), the Court refused to hear DOE's appeal

of the Court of Appeals" ruling that its failure to comply was inexcusable. By the Supreme Court's election, without comment, to not take up these cases, the final Court of Appeals rulings stand.

The short summary of these court decisions is this: DOE is legally obligated to begin taking waste by a now expired deadline, but the Act itself doesn't require specific performance by DOE. The practical result at this time is a deadlock that can only be corrected by Congressional action.

In the recent Court of Federal Claims decision in the *Yankee Atomic* case, the Court determined that the DOE is liable for monetary damages for its breach of its waste disposal contracts. The only question that remains is the determination of the amount of damages. At least eleven other Court of Claims actions are still pending. If each of these cases results in determinations that the DOE is liable, and the plaintiffs are able to prove their estimates of damages, then the DOE could be liable for several billion dollars. NARUC's position on the effect payments of such damages will have on program funding and whether any such payments should come out of the Nuclear Waste Fund is outlined in the attached policy resolution: DOE must be prohibited from using the Nuclear Waste Fund or prospective fee collections for paying costs or damages incurred by utilities, ratepayers, and by State and local governments, as a result of DOE's failure to comply with its obligations. Rather, any costs or damages should be paid out of a Federal judgement fund.

To put it bluntly, it would be an outrage if DOE were able to pay for its damages out of the Nuclear Waste Fund. In effect, it would be requiring the ratepayers to pay for DOE's failures. Moreover, the statute suggests that the Nuclear Waste Fund cannot be used for anything other storage and disposal activities and not the payment of damages. See, 42 U.S.C. § 10222(d))

The Need for Legislation

I think all of our comments made here today, as well as all of the legal actions and delaying activities concerning this program leading to this moment, point directly toward the need for legislation to 1) accelerate acceptance, 2) strengthen the repository program, and 3) protect the consumers by assuring fee revenues are spent on the program.

The ratepayers have upheld their end of the deal by paying for all of the on-site storage of civilian nuclear waste and by paying more than $15 billion into the Nuclear Waste Fund. Without passage of this legislation, the ratepayers payments into the Fund will likely continue to rise, the on-site storage costs will continue to rise, and the DOE will continue a program of non-performance marked by a strategy of continuing delays.

Nor can we turn to the courts for answers. Court actions are expensive, slow and incomplete, while Congressional action is one shot and comprehensive. Only legislation by the U.S. Congress will provide the greatest likelihood of achieving a successful resolution to this matter.

Conclusion

In conclusion, it is imperative that Congress enact H.R. 45 as expeditiously as possible. State regulators who labor to protect consumers from economic exploitation stand ready to work with the Congress, the Department of Energy and all other affected stakeholders to refocus our waste disposal policies. The Nation's electricity consumers deserve to see progress in a waste disposal program in which they are already hugely invested. At this very late date, we must not once again fail them.

Thank you for your time and attention. I would be pleased to answer any questions you might have.

Mr. BARTON. Thank you.

We would now like to hear from Mr. David Joos. Your statement is in the record in its entirety. You are recognized for 5 minutes to summarize.

STATEMENT OF DAVID W. JOOS

Mr. JOOS. Thank you Mr. Chairman, ranking member Hall and distinguished members of the subcommittee. I am President and Chief Executive Officer of Consumers Energy. We serve 1.6 million customers in lower Michigan. We are the 12th largest electric utility in the United States.

My company owns two nuclear plants located on the shores of Lake Michigan. Our Palisades plant continues to operate today. Our Big Rock Point plant was retired in 1997 at which time it was the longest running nuclear power plant in the United States. Today, I am testifying on behalf of the Nuclear Energy Institute, the policy organization for our industry, and representing the industry's view on H.R. 45.

Let me say up front we are strongly in support of passage promptly of H.R. 45. I want to thank you, Mr. Chairman, Congressman Hall and the members of the subcommittee for your tireless efforts with regard to this issue and the other 14 subcommittee members who have cosponsored this bill thus far.

As is also true in Michigan, America's nuclear plants supply about 20 percent of the electricity consumed in this country and are critical to meeting reliability needs. And further, they do it without contributing to nitrous oxide, greenhouse gases or other air emissions.

Unfortunately, our inability to ship used nuclear fuel from these facilities is a severe threat to continued operation. Seventeen years have gone by since passage of the Nuclear Waste Policy Act of 1982 and the performance of the Energy Department in failing to meet its obligation to accept and store nuclear waste is dismal, irresponsible and in violation of the law.

During that time customers of nuclear utilities have contributed some $15 billion to the nuclear waste fund, nearly two-thirds of a billion by Michigan customers alone. Due to program mismanagement and diversion of over half of those funds that have been contributed for other purposes, we have little to show for it.

Most significantly, the DOE has failed to meet its obligation to begin accepting fuel in January 1998 and now says it will be at least 11 years longer before it can start to do so. As a result, nuclear plants across this country are choking on their waste. As of the end of last year, one-fourth of the Nation's nuclear power plants, 109 in total, had run out of original-design onsite fuel storage.

Consumers Energy's plants are among them. At our Palisades plant we have already invested $20 million in dry cask storage at that site. We are currently storing 125 metric tons of fuel in 13 canisters a little over 400 feet from Lake Michigan. Without this legislation, we will have to store four times that much by the year 2010 and will incur at least $50 million in damages over the next 5 years. And but for our inability to ship spent nuclear fuel from our Big Rock Point plant site, we could have returned that site to a green- field condition by the year 2003. Instead, we are spending millions to store fuel there and cannot complete that decommissioning project.

We are better off than many. Others don't have options due to site limitations or local concerns and are facing sure premature shutdown without the ability to move this nuclear waste off of these sites.

Clearly, this situation is intolerable and must be addressed. We believe that H.R. 45 offers an integrated solution to spent fuel management and we are strongly supportive of it. In addition to addressing transportation and interim storage and permanent stor-

age, it provides adequate program life-cycle funding and establishes a designed radiation standard for the storage facility that is consistent with U.S. international scientific organizations and the State of Nevada's own standard.

I might add that it allows the NRC, the Nuclear Regulatory Commission, to modify that standard as it finds necessary based on its scientific findings. We are in strong support of having the Nuclear Regulatory Commission have that authority.

Despite passage of nuclear waste legislation by both the House and the Senate last year, the administration has continued to oppose that legislation, last year pointing to the need to complete the Yucca Mountain viability assessment prior to moving ahead. As you know, that assessment has now been complete and now they are apparently pointing to the need to complete the suitability assessment before we move ahead.

We certainly are concerned about the continuing moving target as to when these decisions get made. That assessment that was released in December, in the words of Secretary Richardson, says that there are no show-stoppers, and we think now is the time to move ahead.

On behalf of the nuclear energy industry, I urge quick passage.

I may just comment that I think that the committee ought to pass this legislation, the full House ought to pass the legislation, and we should urge the administration to move very quickly into a dialog so that we can move this along on a bipartisan fashion.

In summary, Mr. Chairman, one thing is clear. We have nuclear waste, we have to store that nuclear waste safely. The real question is, do we store it in 35 States in excess of 70 sites, in locations like our two sites on the shores of Lake Michigan, or do we store it in one central location, in the desert in Nevada? I think the choice is clear.

Thank you very much.

[The prepared statement of David W. Joos follows:]

PREPARED STATEMENT OF DAVID W. JOOS, PRESIDENT AND CHIEF EXECUTIVE OFFICER, CONSUMERS ENERGY ON BEHALF OF THE NUCLEAR ENERGY INSTITUTE

Mr. Chairman, Ranking Member Hall and distinguished members of the subcommittee, my name is David Joos. I am president and chief executive officer of Consumers Energy. My company owns two nuclear power plants that border Lake Michigan. The Palisades unit is 16 miles north of St. Joseph, Michigan. The second, Big Rock Point near Charlevoix, Michigan, was the nation's longest running nuclear power plant until its retirement in 1997.

Today, I am testifying on behalf of the Nuclear Energy Institute and representing the nuclear energy industry's position on H.R. 45, the Nuclear Waste Policy Act of 1999.

I want to express my gratitude to you, Mr. Chairman, Congressmen Hall, Dingell, Upton and Towns and the rest of the subcommittee for your unflagging commitment to resolving the nuclear waste issue. I also would like to thank the 14 subcommittee members who thus far have joined 74 other House members in co-sponsoring H.R. 45.[1]

This broad bipartisan support is a clear signal to the federal government that it must fulfill its statutory obligation to accept used nuclear fuel and must adopt an integrated plan to manage the nation's nuclear byproducts.

Nuclear power plants supply nearly 20 percent of America's electricity and are the nation's largest source of emission-free energy—an important distinction for policymakers who recognize the unmistakable nexus between energy and environmental policy. In Congress, and indeed across the United States, there is growing apprecia-

[1] The number of H.R. 45 cosponsors was current as of February 9, 1999.

tion for the industry's vast experience with more than 2,000 reactor years of operation and growing awareness that the industry offers a unique opportunity to meet energy production and clean air needs of the 21st century.

Without nuclear energy, the United States will find it impossible to meet increasingly stringent U.S. clean air regulations as well as international carbon dioxide reduction goals. The nation's nuclear power plants provide clean air benefits while producing electricity at a competitive price—with production costs that are a fraction of a cent higher than coal-fired electricity and more cost-effective than natural gas, solar or wind power. A necessary component to ensure nuclear energy's continued benefits is the federal acceptance and disposal of used nuclear fuel.

Summary

Mr. Chairman, since 1981, the Energy Department has been siting and developing an underground geologic repository for the disposal of used nuclear fuel. In recent years, however, the agency has failed to advance an important aspect of the program—the acceptance of used fuel. A little more than a year ago, the Energy Department was scheduled to start accepting used fuel from nuclear power plants and defense facilities at 78 locations in 35 states. The agency missed its deadline in violation of its clear statutory duty under the Nuclear Waste Policy Act of 1982. The law required disposal at a single, federally monitored location.

Instead of beginning receipt of this fuel, the Energy Department has deflected and attempted to deny its legal responsibilities based on avoidable delays in the development of a repository. This is irresponsible conduct unfitting of the federal government. It breaks the spirit of the law by reinforcing the agency's reluctance to treat nuclear waste disposal as a high priority. And it certainly violates the letter of the law.

In September 1998, a shift in policy seemed imminent. As part of events leading to the U.S. Senate confirmation of Energy Secretary Bill Richardson, President Clinton wrote a letter to Sen. Frank Murkowski, R-Alaska, chairman of the Senate Energy and Natural Resources Committee. The letter stated that Mr. Richardson would have the "portfolio" to represent the Administration in working with Congress to resolve the disposal problem. This marked a reversal in course from Secretary Richardson's predecessors.

Based on the president's clearly stated commitment that Secretary Richardson would actively engage Congress in a dialogue on nuclear waste disposal issues, the prospects for putting this program on a clear path to success seemed promising. In fact, about three months later, the Energy Department released a report ordered by Congress supporting the continued scientific study of Yucca Mountain, Nevada, as the site for a permanent repository for used nuclear fuel. The report, known as the Yucca Mountain viability assessment, "reveals that no showstoppers have been identified to date," Secretary Richardson said on Dec. 18 when he released the compilation of years of scientific and technical assessments of the site.

Unfortunately, however, there has been no real commitment from the White House or the Energy Department to meet this obligation to electricity consumers and all citizens.

In the past, the Energy Department has excused its delays as the inevitable price of bureaucracy. A British economist wrote that while bureaucracies boast the appearance of silence, they violate the true principles of business. So it is with the Energy Department, where unmet deadlines and legal liabilities may spell financial disaster—both for the industry and for the electricity customer.

Today, the consequences of continued delay are severe. They can be measured first by the financial liability posed to the federal government—in essence, taxpayers. Importantly, consumers of nuclear-generated electricity—not taxpayers—have paid for managing used nuclear fuel and will continue to do so during the life of the program. Second, delay will impact economic operations of U.S. nuclear plants, which serve as linchpins in the administration's clean air and carbon abatement strategies. As this committee knows well, the impact of protracted delay in this program will unduly strain nuclear facilities as they adapt to a competitive electricity market.

First, storing used nuclear fuel indefinitely at nuclear power plant sites drives up on-site storage costs that commercial plants and their electricity customers were never intended to bear. Utilities and state attorneys general, finding no other recourse, turned to the courts to hold the Energy Department accountable for its 1998 fuel acceptance obligation. Electricity consumers have committed $15 billion, including interest, to the Nuclear Waste Fund—a federal trust which has never operated in a fashion to fully fund the program.

Customers who count on electricity generated at our Palisades nuclear power plant and other nuclear energy facilities in Michigan have committed $678 million

for these government services. In Texas, Mr. Barton, the customer commitment is $323 million; in New Jersey, Mr. Pallone, $543 million; and in Florida, Mr. Stearns, Mr. Deutsch and Mr. Bilirakis, $648 million.

Yet over the years, the federal government has diverted $7.8 billion from the waste fund for deficit reduction. This continued erosion of resources should be stopped, especially in view of the program's need for increased levels of funding as it enters a construction phase for central storage. Only Congress can stop the federal government's use of funds in this fashion and ensure that this project has the financial means to move forward. Without passage of H.R. 45, Congress will have a difficult time making funds available within the budget caps to meet program needs.

Without use of a temporary central storage facility, consumers of nuclear-generated electricity will be forced to pay for DOE's negligence once more. They could suffer as much as $56 billion in damages for the Energy Department's default on accepting used fuel and other costs associated with indefinite storage at multiple nuclear power plant sites. Ratepayers will continue to pay into the Nuclear Waste Fund for reasonable program costs. But if they pay a second, multi-billion dollar bill solely because of federal government inaction, it would be tantamount to fraud.

The second consequence of continued fuel acceptance delays is the uncertainty it creates for companies like Consumers Energy that cannot adequately plan for future plant operation without a date certain for federal used fuel acceptance. Otherwise, the high-level waste program and its associated expenses aggravate our ability to make prudent decisions in a competitive market. At Big Rock Point, for instance, 58 metric tons of nuclear fuel awaits federal management. The longer fuel sits at the retired plant, the greater the delay for decommissioning. Without legislative action, the process could take 20 to 30 years. With H.R. 45, however, the plant would be decommissioned in half the time and returned to a natural, greenfield state for other uses.

The Palisades plant faces different challenges. The plant's spent fuel pool has reached capacity, prompting Palisades to store 125 metric tons of used fuel in 13 stainless steel containers at the site. Each time we refuel the reactor, the amount of used fuel grows. In 1998, when the Energy Department should have started fuel acceptance, Palisades' dry storage would have been limited to 120 metric tons. By 2010—the date the Energy Department expects to complete a permanent repository—the amount of used fuel requiring dry storage at Palisades would grow to 600 metric tons.

The disposition of used fuel at the Palisades site poses a serious economic impact on plant operations. The timing, the manner in which additional dry storage would be undertaken and the amount the site would be reimbursed for additional storage resulting from government inaction will dictate whether the plant operates in the future. Any risk to Palisades' continued operation would reverberate among all of Michigan electricity customers who receive their electricity from the nuclear power plant. These uncertainties also threaten the tax base of Covert Township, where Palisades is located, as well as the job security of the plant's 500 employees. Mr. Chairman, you can see that the passage of H.R. 45 is absolutely necessary to provide reliable federal fuel acceptance dates and maintain economic stability for our region and many others that rely on the nation's 103 nuclear power plants.

Some industry critics argue that used nuclear fuel is best left alone, that it should continue to be stored at sites across the country. That would be a mistake. Building more dry fuel storage facilities is not feasible at many locations because of geographic constraints, zoning restrictions or political resistance. For example, the Indian Point units in New York are hampered by siting restrictions. The site's limited size and restricted equipment handling capability render it unfavorable for dry storage.

Mr. Chairman, getting the Energy Department's attention has been incredibly frustrating for me, for my industry and for many states and state agencies who have taken active roles in trying to hold the federal government to its fuel acceptance deadline. Every year, we are confronted with a new delay that pushes nuclear fuel disposal further into the future even though the silence indicates promise for fuel storage today.

As I mentioned earlier, the agency's repeated delays have forced 61 state officials, state agencies and municipalities to go to court over this matter, seeking legal decisions that force DOE to take waste and to pay utilities to continue storing used fuel past the 1998 federal collection date.

Federal judges consistently have ruled that the Energy Department must comply with nuclear utility contracts that require federal fuel acceptance in exchange for funds utility customers have been paying for 16 years. In three rulings in 1998, the U.S. Court of Federal Claims ruled that the Energy Department is liable for breach-

ing its contract with utilities and failing to accept used nuclear fuel. That court is now considering the level of damages that should be awarded to Yankee Atomic Power Co., Maine Yankee and Connecticut Yankee for the Energy Department's breach of contract. Yankee Atomic alone is seeking $70 million. Seven other utilities have filed individual suits seeking monetary damages. More are expected.

Mr. Chairman, let me repeat the fact that the industry has been presented no alternative to litigation. We always have believed that the preferred solution is for the Energy Department to meet its obligation to manage used fuel at a central location.

The Energy Department's waiting game has become much too costly for consumers to endure. In the years ahead, it may threaten the economic viability of some plants as the energy landscape shifts to a competitive marketplace. By passing H.R. 45, this committee has an opportunity to end the delays and the drain on consumers. This legislation provides a comprehensive management program that integrates storage, transportation and disposal so that the government can begin fuel acceptance in 2003. Once removed from sites, the fuel would be stored temporarily at a central facility until a permanent repository is completed in 2010.

Mr. Chairman, one thing is clear: used fuel will have to be stored properly. The question is, does it make more sense to store it in dozens of locations across the country—including our two sites on the shores of Lake Michigan—or at one location in the Nevada desert?

Nuclear Regulatory Commission Chairman Shirley Jackson, in testimony before the committee last year, endorsed a single disposal site as a means to more safely and efficiently monitor used nuclear fuel.

H.R. 45 does more than create certainty for fuel acceptance and disposal. The legislation ensures adequate funding through the life of the program. And it establishes a 100-millirem radiation standard that is consistent with U.S. and international scientific organizations. This standard also ensures the same level of public safety as the Nevada state radiation protection standard.

While the Energy Department continues a responsible job of collecting scientific data on Yucca Mountain, we have yet to fully address the complex political dynamics that surround this issue.

It still amazes me that the government could put a man on the moon in 10 years but that it will take it 28 years to build an underground repository for used nuclear fuel.

In light of DOE's repeated delays, I respectfully urge the committee to expedite a used fuel management and disposal program through reform legislation—H.R. 45. At the same time, this committee should revive the dialogue with the administration so that the two can work in partnership to begin waste acceptance.

The Need for Reform Legislation

Mr. Chairman, as the preceding discussion indicates, a significant shift in the Energy Department's program direction must take place in order to achieve used fuel acceptance from the nation's nuclear power plants and defense facilities. Only Congress can take the appropriate measures to chart a sure course for the near-term receipt and storage and ultimate repository disposal of used nuclear fuel.

The Nuclear Waste Policy Act of 1999, H.R. 45, accomplishes this programmatic shift while protecting public health, safety and the environment. Mr. Chairman, you and the members of this committee are quite familiar with the features of this legislation, which is virtually the same as legislation the House of Representatives approved 307-120 during the 105th Congress. Modifications have been made to the program's funding provision to accommodate congressional budget scoring rules. With that exception, and a date change for operation of a temporary storage facility, the legislation's provisions are similar to that of the 1997 legislation. The essential components of H.R. 45 include:

- Establishing a used nuclear fuel management system, including development of a temporary storage facility within Area 25 of the Nevada Test Site. The site would safely hold used nuclear fuel until the Energy Department completes a permanent repository. A temporary storage facility is necessary since the Energy Department has stated that the agency will not accept used fuel without a disposal or storage facility;
- Establishing a date for operating used fuel storage. Temporary storage would begin operation by June 2003. A permanent repository is scheduled for January 2010 operation;
- Limiting the size of a temporary storage facility and permitting the Energy Department to determine the repository's size. A temporary storage facility would be built in two stages—10,000 metric tons of uranium (MTU) in the first phase, expanded up to 40,000 MTU in the second phase;

- Complying fully with the National Environmental Policy Act requirements by establishing clear milestones and schedules for preparation of environmental documents, conduct of licensing reviews and all other steps involved in siting, design, licensing and construction of this central storage facility;
- Establishing a radiation health standard of 100 millirems per year for licensing a repository. The standard is consistent with Nevada state regulations and international scientific recommendations. For example, Nevada's Administrative Code, section 459.335, states, "The total effective dose equivalent to any member of the public from [a] licensed and registered operation does not exceed 100 millirems per year;"
- Creating a new funding mechanism consisting of a combination of a user fee and a mandatory fee, with an average fee to electricity consumers of 1 mill per kilowatt-hour until the repository opens. During the averaging period, the fee may not exceed 1.5 mills/kwh in any given year. After the repository opens, the fee is capped at the current rate of 1 mill/kWh;
- Instructing the Energy Department to minimize the use of transportation routes through populated areas;
- Providing for transportation planning, training and technical assistance to states, emergency responders and labor organizations; and
- Providing for land conveyances and benefits for affected communities, including payments equal to taxes.

The legislation also builds upon sound technical and scientific assessments that support the siting of a permanent repository for used fuel at Yucca Mountain.

Indeed, the Energy Department's December 1988 report to Congress on the viability Yucca Mountain notes that, "over 15 years, extensive research has validated many of the expectations of the scientists who first suggested that remote, desert regions of the Southwest are well-suited for a geologic repository."

Secretary Richardson, in an update to the president about the viability assessment, said that scientific and technical work at Yucca Mountain should proceed to further the project goal of opening a repository in 2010.

Conclusion

Nearly 20 percent of the nation's electricity consumers rely on nuclear power plants for energy that also preserves our air quality. With no harmful emissions, nuclear energy assists the United States in meeting federal clean air regulations and international goals to reduce carbon dioxide worldwide. No other fuel source helps the nation achieve its air preservation goals while offering reliable, competitive electricity to customers. And by balancing the nation's energy portfolio, nuclear energy provides security from international fuel crises.

For these reasons, and for the security of our state economies, Congress must tackle a significant environmental challenge for the 21st century—securing federal acceptance of used nuclear fuel and providing certainty for its disposal. Without H.R. 45, the federal high-level waste program will wend its way through a bureaucratic labyrinth that offers no solution. With H.R. 45, the industry and the nation can meet all other challenges; energy security, air conservation and competitive electric production.

The visionary leadership of this committee will assure a new level of intensity and commitment for this landmark initiative.

Mr. SHIMKUS [presiding]. Thank you.

The next panelist is Mr. Richard Abdoo, Chairman and CEO of Wisconsin Electric Power Company. Welcome. You have 5 minutes.

STATEMENT OF RICHARD A. ABDOO

Mr. ABDOO. Thank you, Mr. Chairman and members of the subcommittee. My name is Richard Abdoo. I am the Chairman and CEO of Wisconsin Electric Power Company, a utility based in Milwaukee, Wisconsin, and the owner of the Point Beach Nuclear Power Plant. I would like to express my views on the amendments to the Nuclear Waste Policy Act embodied in H.R. 45.

My essential message to you today is to encourage you to speed passage of this legislation, as well as to draw your attention to the need for short-term action on the national nuclear waste issue.

I am here as a utility executive in the unenviable position of being perhaps the first in line to have a safe, efficient, fully operational nuclear plant shut down for the lack of a storage solution. Time is of the essence, as my company's nuclear plant, Point Beach, will exhaust approved onsite storage of spent fuel by the year 2004.

Very simply, we are exploring every available and prudent option to either expand onsite storage or ship spent fuel to an appropriate site. But if we are not successful, then we will face premature shutdown of Point Beach.

I would like to accomplish three things in my short time with you today. I would like to explain why we need enactment of this bill as soon as possible, why we need to have contingency plans built into H.R. 45 and what the consequences are for the customers of Wisconsin Electric and other utilities if we are not successful in finding a solution to this national concern.

First, let me point out that the Department of Energy as you have heard several times today is more than a year late in initiating its responsibility for removing spent fuel from commercial nuclear reactors as required by the Nuclear Waste Policy Act of 1982. Under that law, utility consumers nationally have paid more than $15 billion to the Federal Government, and Wisconsin Electric consumers alone have paid more than $208 million.

After more than 17 years, DOE is arguably no closer to accepting fuel now than it was back in 1982. H.R. 45 will put teeth into the requirement that Congress passed back when the Milwaukee Brewers last were World Series contenders. Believe me, that is a long time ago.

Why do we need enactment as soon as possible? To put it most bluntly, this is perhaps our last best chance to force the Federal Government to live up to its responsibility to accept spent nuclear fuel.

When my company and many others designed our nuclear power plants, we did so with the assurance that the Federal Government would provide long-term disposal for our spent fuel. Needless to say, that has not happened. If I can remember correctly, there have been six administrations that have failed to live up to this promise. The legislation before you strictly and clearly addresses that promise.

Next, why do we need contingency plans built into H.R. 45? As a utility executive, I must constantly prepare contingency plans in order to assure uninterrupted power supply to my customers. As I will explain in a minute, the Point Beach plant is vital to reliability for serving my customers, and I must pursue every reasonable option for keeping this plant on-line. With the passage of time and the administration's inability to meet its responsibility, we find ourselves in the precarious position of requiring near-perfect execution of these options if we are to avoid shutting down reactors due to a lack of spent fuel storage.

In my own plant's case, we designed spent fuel pools with the assumption that the Federal Government would take this fuel. But it did not. So we had to obtain approval from the State of Wisconsin for onsite dry cask storage. Due to the interest in this issue, gaining approval was a 3-year legal process.

We must now seek approval for more casks, even though the last time it was assumed that the Federal Government would surely have met its responsibility by 1998. But it did not. We cannot afford another 3-year process and still make our 2004 deadline.

As a second contingency plan, we are renegotiating our contract with DOE. The D.C. Circuit Court suggested that utilities pursue administrative remedies under their contracts, and we are. We have not sued the DOE. We have elected to negotiate with them. Those discussions are ongoing and must come to completion soon if we are to have a timely contract resolution to our problem. But I am not optimistic.

Additional contingency options can be built into this legislation. If there is any slippage in the 2003 spent fuel acceptance date in the bill, if there is any further delay in the Federal Government's ability to meet this deadline, if there is any problem in presenting to the President a bill he can sign before the end of this Congress, then we are in danger of shutting down not only Point Beach but an increasing number of nuclear plants around the country. Therefore, I would ask you to consider measures that would clarify DOE's authority to provide for additional onsite storage or provide authority to DOE for shipping waste to appropriate offsite facilities.

In summary, Mr. Chairman and members of the committee, let me close by encouraging you to move this legislation as quickly as possible. We have already moved out of the comfort zone, and I feel that we may face a gap between the time we run out of onsite storage and the time when the Federal Government is able to accept spent fuel at an interim storage facility.

But do not take my remarks as detracting from H.R. 45. It is a good bill and I support it. Thank you very much.

[The prepared statement of Richard A. Abdoo follows:]

PREPARED STATEMENT OF RICHARD A. ABDOO, CHAIRMAN AND CEO, WISCONSIN ELECTRIC POWER COMPANY

Mr. Chairman and Members of the Subcommittee: Thank you for the opportunity to appear before you today to present Wisconsin Electric Power Company's views on H.R 45, amendments to the Nuclear Waste Policy Act of 1982. My essential message to you today is to encourage you to speed passage of this legislation but also to draw your attention to the need for short-term action on the nuclear waste issue. Addressing this problem is key to keeping the Nation's, including my company's, nuclear plants operating, which in turn is key to the continued reliability of our electric supply, and our ability to achieve air quality standards, including meaningful greenhouse gas reductions. The challenge is that there may be a gap in time between the point when existing on-site storage of spent nuclear fuel is filled to capacity, and the time spelled out in H.R. 45 when interim storage or a permanent repository would be ready to accept shipment of fuel. I ask that you consider options that could be added to H.R. 45 that could fill this gap.

H.R. 45 Should Be Enacted As Soon As Possible

If there is any major problem with this legislation it is that it should have been enacted years ago. H.R. 45 is a good bill. H.R. 1270 from 1997 was a better bill. H.R. 1020 from 1995 was the best bill—because it would have addressed this problem four years ago. Unfortunately, due to the Nation's delay in addressing this issue I have a growing concern that even the streamlined approach articulated in H.R. 45 may not provide relief in time to avoid shutdown of certain nuclear power plants. And while I'm speaking today from my own company's perspective, you should be aware that given the acceptance date, the acceptance rate, and the likely acceptance schedule based on DOE's "Acceptance Priority Ranking" report, there are a growing number of nuclear power plants that may be forced into premature shutdown if we do not find a solution to the nuclear waste issue soon.

My company operates 1000MWe of generation in two units at its Point Beach Power Plant. This plant has had one of the industry's best performance records for over 25 years. In the last three years we have undergone intense scrutiny by the Nuclear Regulatory Commission, invested hundreds of millions of dollars to bring our facility up to new standards, and emerged with renewed confidence in our ability to operate this facility safely and economically. Our licenses run to 2010 and 2013 respectively. Yet, we are threatened with premature shutdown.

If legislation would have been enacted four years ago Wisconsin Electric would not be confronted with this critical situation. As I mentioned earlier, according to the "Acceptance Priority Ranking" report and the timetable in section 508 of H.R. 45, Point Beach is scheduled to begin shipment of fuel to an interim facility in the first year of acceptance, 2003, as well as in the nine subsequent years of acceptance. But even this date, 2003, is not guaranteed by this proposal. Section 508 of H.R. 45 would allow the Department of Energy to stretch acceptance of spent fuel over a five year period starting in 2003 which means that all waste could be refused from 2003 to 2007 as long as the full five year amount were accepted in 2008. In contrast, Point Beach will exhaust approved on-site storage of spent fuel at the Point Beach Power Plant by the year 2004, four years before there is an absolute date for acceptance of fuel under H.R. 45.

The Department is over a year late in initiating its responsibility for removing spent nuclear fuel from commercial nuclear utilities as required by the Nuclear Waste Policy Act (NWPA) of 1982 and by its contract with each nuclear utility. Under that contract, my customers have paid and continue to pay the federal government to take title, remove and permanently manage spent nuclear fuel generated from my plants. Utility consumers nationally have paid $15 billion to DOE; Wisconsin Electric consumers alone have paid more than $208 million. And after 17 years, DOE is arguably no closer to accepting fuel than it was in 1982.

Wisconsin Electric Background

The Wisconsin Electric Power Company is an electric and gas investor-owned utility headquartered in Milwaukee, Wisconsin serving 1.4 million customers with annual revenues of $1.8 billion. Wisconsin Electric produces, delivers and sells electric energy in an area of about 12,000 square miles in the southeastern, east central and northern portions of Wisconsin, and the Upper Peninsula of Michigan. The total area's population is about 2.3 million, which includes metropolitan Milwaukee. Peak electric demand is about 5,500 megawatts. In addition to Point Beach Power Plant which supplies about 25 percent of electric demand, we have six coal plants which supply two thirds of our demand and the rest is supplied by hydroelectric, natural gas, oil, and purchased power.

Point Beach is a Westinghouse plant with two units of 500 megawatts each. Unit 1 began operation in 1970, unit 2 in 1972. Unit 1's license will expire in 2010 and unit 2's in 2013. About a quarter of the 121 fuel assemblies are replaced annually. Each fuel assembly contains 179 rods. In 1995, Point Beach began loading spent fuel into dry casks on the plant property. The Public Service Commission of Wisconsin authorized us to load up to 12 which, combined with our spent fuel pool, provides enough storage for operation of the plant through 2004.

The legal history of spent fuel at Point Beach has put us in a unique position within the industry. Wisconsin Electric was not part of an original lawsuit against the Department of Energy seeking to enforce the federal government's obligation (under the Nuclear Waste Policy Act of 1982) to begin removing spent nuclear fuel from investor owned utilities by January 31, 1998. But, we became a joint petitioner when DOE failed to meet the January 31, 1998 acceptance date and did not provide an adequate remedy. Subsequently, the District of Columbia Circuit Court of Appeals declined to directly order DOE to take spent fuel, suggesting that utilities pursue remedies under the contract. At that point,Wisconsin Electric did not join with other investor-owned utilities in continued litigation and instead is trying to pursue a path of negotiation with DOE in the hopes of crafting an administrative solution under terms of the contract with the Department. So far, our efforts have not been successful.

The Threat to Reliability and the Environment

Point Beach is a vital part of the electricity supply in the upper Midwest, and the key to keeping Point Beach on line is storage of spent fuel. If we cannot expand on-site storage and are unable to ship waste to an appropriate site then we must shut down our plant by 2004. Shutting down 1000 MWe of generating capacity will strain the reliability of our system since Point Beach supplies approximately 25 percent of the power used by our customers. And beyond the Wisconsin Electric system, any significant reduction in electric generation capacity will exacerbate an already

tight supply situation in our region of the country. As you know, the Midwest has experienced two consecutive summers of reliability concerns.

Because Point Beach does not emit any greenhouse gases or other atmospheric emissions, its premature shutdown would also be a significant blow to efforts to improve air quality. If we were forced to shut down Point Beach we would likely replace the capacity with a clean power source, such as combined cycle natural gas. The increased greenhouse gas emissions alone would be very significant. Substituting this natural gas capacity for Point Beach would increase carbon dioxide emissions by 3.5 million tons per year in addition to increased nitrogen oxide and other atmospheric emissions!

My company's ability to commit to meaningful greenhouse gas reductions hinges upon continued operation of these emission free facilities in Wisconsin. While I recognize the controversy surrounding policy proposals to address potential global climate change, Wisconsin Electric is committed to addressing the global warming issue. Wisconsin Electric was one of the first investor owned utilities to establish in a developing nation a tree planting program for carbon sequestration, and one of the first to retrofit an aging coal plant with new natural gas technology as a means of reducing carbon emissions. These two international programs comprised two of the seven original projects of the United States Initiative on Joint Implementation Program. Wisconsin Electric has the largest green pricing program of its kind in the country which offers customers a choice in choosing green energy alternatives. I have participated in the Vice President's climate change consultation meetings although I hasten to point out that Wisconsin Electric does not believe that the Kyoto Protocol is the best approach to a global climate change policy. But, as I noted earlier, the ability of Wisconsin Electric to commit to any meaningful greenhouse gas reductions is fatally undercut if we are forced to shut down Point Beach prematurely.

Contingency Planning

We are exploring all reasonable options to keep the Point Beach plant operating by obtaining sufficient storage capacity for the spent nuclear fuel, and we are in a situation where we must explore all options in the hopes that one of them will succeed. This legislation is obviously a key part of our goal to keep the plant operating. Under this bill, the Federal government would be ready to accept spent fuel in June 30, 2003. On that date, shipments would begin according to the schedule in section 508 of H.R. 45. But, we can not absolutely rely on this date. In addition to the five-year stretching concern I expressed earlier, my confidence in DOE's ability to meet this schedule is not high. DOE was obligated to begin taking spent fuel in 1998 and had 17 years and $15 billion to prepare. It is common knowledge that DOE failed to meet this schedule.

Even with this date and shipment schedule mandated in H.R. 45, Wisconsin Electric may still have to expand on-site storage in order to have enough space to keep the plant running, and we are exploring all other potential options. We plan to initiate a proceeding with the state of Wisconsin to seek approval for additional dry casks for storage of spent fuel. But, such requests put tremendous pressure on state and local officials—the last request led to more than three years of legal proceedings—and in any case nuclear waste is a Federal problem. We are negotiating with the Department of Energy to resolve our contract dispute in a way that will allow us to expand storage or ship spent fuel. We are monitoring and assessing private storage options. We are putting every effort into making one of these options work for us. Under any one of these options everything must occur on time and according to plan in order for us to be able to operate until the June 30, 2003 acceptance date in the bill.

However, if none of these options succeed, if there is any slippage in the 2003 date, if we do not get a positive response from the state, or if the Department of Energy exercises its ability under section 508 of this bill to amend the acceptance schedule, then we may be forced to shut down Point Beach. And other utilities that are in a similar situation may be forced to take similar action. This is why I think you should consider measures that could fill a gap between the time that plants run out of space and when the Federal Government actually accepts our spent fuel. Given the history of this program I think it is only prudent to consider measures for dealing with the waste problem should *another* Federal mandate to accept nuclear waste not be achieved precisely on schedule.

I greatly appreciate the prompt attention that the U.S. House of Representatives has repeatedly given to the nuclear waste issue and that you are giving today. However, as a utility executive I must constantly prepare contingency plans in order to keep the lights on and I do not have enough confidence to tell my customers and state regulators that the Federal government is definitely going to deal with the nu-

clear waste problem this year. If it appears there will be no solution and we will have to shut down Point Beach, I must begin preparations soon to plan for replacement power.

While I must make contingency plans, I also urge you to consider adding measures to this bill that could form a national contingency plan should we need one. These steps could include clarifying authority for the Department of Energy to provide additional on-site storage or providing authority to DOE to ship spent fuel to off-site storage facilities. For those plants facing imminent shutdown, another step could be to create a system by which nuclear utilities could trade positions in the shipment queue so that plants that are necessary for reliability reasons might be able to trade places with plants that higher up in the queue.

Conclusion

Mr. Chairman, I do not want my remarks here to detract from the desireability of H.R. 45—it's a good bill and I support it. Nor do I want to suggest that a long-term storage solution is not critical—I believe it is. I am heartened by the progress in the viability assessment of Yucca Mountain and am pleased that the assessment "reveals no showstoppers." I am here as a utility executive in the unenviable position of being perhaps the first in line to have a safe, efficient, and fully operational nuclear plant shut down for the lack of a storage solution. H.R. 45, as good as it is, needs something more to provide me the assurance I need that my plant can continue to operate after 2004. This plant is crucial to my being able to supply energy reliably to my customers, and do my part for reliability in my region. This plant is a key element in any commitment I can make to reduce greenhouse gas emissions in a meaningful way. So, today I ask your consideration for adding to H.R. 45 measures that can bridge the gap between when the DOE interim storage facility actually accepts my spent fuel and when my storage options are exhausted. Thank you.

Mr. STEARNS [presiding]. Thank you.

Ms. Joan Claybrook. Yes.

STATEMENT OF JOAN CLAYBROOK

Ms. CLAYBROOK. I thank you, Mr. Chairman. I appreciate the opportunity to testify here today.

I am Joan Claybrook, I am President of Public Citizen, a national public interest organization with 150,000 members across the country. I am testifying here today also on behalf of the Sierra Club and the Nuclear Information and Resource Service. I am testifying on behalf of all of them.

For over 20 years our organizations have worked to shape a responsible public policy for the disposition of nuclear waste, an intractable program with no known solution, and no country in the world has found an answer to the long-term isolation of these highly toxic wastes. The centralized interim storage of highly irradiated nuclear fuel that is mandated by this bill, H.R. 45, would be a mistake, in our view, for health, safety, environmental and for fiscal reasons; and would undermine the capability, we believe, based on the testimony and what we have heard from the Department of Energy, to complete its work on a permanent repository that it has now undertaken.

No emergency exists that requires the immediate removal of nuclear waste from its current storage facilities at commercial reactors, and I think that that is perhaps one of the most important things that I could say here today. There is not an emergency that would cause the need to have an interim storage facility.

For 2 decades, the nuclear industry has lobbied policymakers to legislate for this government bailout of private industry's intractable waste problem. Interim centralized storage offers no advantages and adds disadvantages to localized storage at nuclear power plants. Interim storage sites will not remove the waste that are at

the plants anyway, because, of course, many of these plants will continue to operate and continue to create the waste.

The risk that is posed by moving 100,000 shipments of highly irradiated fuel on our highways and on rails across 43 States over the next 30 years is immense. Eighty-two percent of the American public do not want this waste to be transported near where they live.

The mandate in H.R. 45 for transferring waste to an interim storage facility represents a massive 4,350 percent increase in nuclear waste shipments resulting in the exposure of over 50 million Americans. It is estimated that we can expect between 210 and 354 crashes on our highways with this waste. A small release of this waste would contaminate 42 square miles, taking 460 days and $620 million to clean up. That doesn't take into account sabotage and other potential problems.

The Department of Energy's viability assessment which recently was released provides conclusive evidence, in our view, based on the Department's own guidelines, that Yucca Mountain should be disqualified. It shows that the water travel time from repository to accessible environment is only about 500 years, and we view this as shocking in view of the highly dangerous waste life, which is from 250,000 to 1 million years.

The viability assessment contains estimates of radiation exposure indicating that a large increase in cancer rates may occur in the area around Yucca Mountain. This is the result of a dose 20 times larger than the amount allowed by standards applied to other waste dumps. In our view, any increase, no matter how small, in background levels of radiation that could be controlled is intolerable.

Several independent scientific studies raise more concerns over Yucca Mountain. These significant questions about the safety of Yucca Mountain are not addressed in your bill, H.R. 45. Instead of setting a safety floor, H.R. 45 wrongly preempts Federal, State and local laws that are more protective of the public and curtail the National Environmental Protection Act. We find it quite interesting that a committee and the leadership of this Congress that speaks about the 10th amendment and States' rights would pass legislation such as this which is so preemptive of the rights of States. And we believe that it certainly undermines the public confidence in this program. The bill sets radiation protection standards that are four times greater than the established standards and prohibits the EPA from setting its drinking water standards.

Since I am the only witness at this panel on this, could I have a few more minutes, Mr. Chairman?

Mr. STEARNS. Sure. I think so.

Ms. CLAYBROOK. I would point out that in 1995, the Congress eliminated the national 55-mile-an-hour speed limit and decided to let the States set their own standards. Why then would the Congress want to prevent the States from setting a higher transportation safety standards for these highly dangerous wastes?

H.R. 45 also forces taxpayers, not just the industry, to pay for the ever-increasing cost of the nuclear waste issue. Predictions of the shortfall, including the interim storage, have risen to $45 billion. This legislation causes an even greater shortfall than legisla-

tion introduced last year, yet it further reduces the fee that the industry would pay.

Retaining nuclear waste at the utilities through 2010 is seven times less expensive than the costs through 2002 of interim central storage in Nevada. If passed, the legislation is likely to cost taxpayers more money from litigation, because it continues the trend in the nuclear waste policy of setting impossible deadlines. The ongoing litigation against DOE by the nuclear utilities is the result of deadlines that could not be met scientifically, that were established by the Nuclear Waste Policy Act of 1982 over the objection of environmental and safety organizations. More legislative deadlines that DOE cannot meet will result in more taxpayer money being paid to utilities following their lawsuits.

In summary, Mr. Chairman, H.R. 45 is bad public policy, and it really creates two possibilities if the legislation passes and the waste is shipped for interim storage. One, the danger exists that because the waste is there, the dump will become a permanent storage facility without a number of necessary safeguards. The other possibility is that because a site is so problematic, waste will need to be moved again, needlessly increasing risks.

Lawmakers should carefully consider the evidence and the public view and not be swayed by the powerful nuclear industry lobby.

Thank you very much.

[The prepared statement of Joan Claybrook follows:]

PREPARED STATEMENT OF JOAN CLAYBROOK, PRESIDENT, PUBLIC CITIZEN, ON BEHALF OF THE NUCLEAR INFORMATION AND RESOURCE SERVICE AND THE SIERRA CLUB

Thank you for the opportunity to present Public Citizen's view on civilian high-level radioactive waste. Public Citizen is a non-profit, non-partisan, consumer research and advocacy organization with 150,000 members nationwide. We accept no funding from corporations, governments, or trade associations.

Because of the long-term potent threat to public health, safety and the environment, over the past 25 years Public Citizen has been actively engaged in the public policy debate about the responsible disposition of nuclear waste.

The highly irradiated nuclear fuel from commercial reactors is one of the most toxic substances known to man. No nation has found the long-term answer to the problem of isolating this extremely dangerous waste from humans and the environment for the 1000 millennia during which it remains highly toxic and hazardous. The decisions made today about the disposition of waste will have ramifications for the next 30,000 generations to come. In the past, policy makers have not heeded the warnings of the public interest community about nuclear waste policy. As a result, fateful decisions concerning nuclear waste policy were made. Listen to our warnings over the years:

In the 1970s, when new nuclear plants were still being planned, we cautioned policy makers about the inadvisability of relying on an energy source with an intractable waste problem. In the late 1970s, when citizens who lived near nuclear power plants became extremely apprehensive about nuclear waste disposal, national organizations and citizen's groups educated policy makers, the media, and the public about the enormous dangers, ramifications and costs. Prior to the passage of the Nuclear Waste Policy Act of 1982, policy makers were warned by Public Citizen and other environmental organizations that the scientific knowledge necessary for locating and evaluating permanent site locations based on a geological evaluation did not yet exist. Then when the 1982 law was amended in 1987 to make Yucca Mountain the only candidate site for a permanent repository, we told policy makers repeatedly that the decision was wrong because it was based on politics, not science.

In retrospect, had policy makers listened to the warnings concerning nuclear waste and the laws pertaining to it, we would not have had the string of public policy failures related to nuclear waste. At a minimum, the DOE would not be spending taxpayer money to defend the government's inability to meet impossible deadlines. Instead of wasting tax dollars, millions of dollars in public funds could have

been devoted to scientific research to search for an acceptable disposition of nuclear waste.

Today, I must report that the "solution" has still not been discovered and that the nuclear industry, richer and more powerful than ever, is still lobbying for a legislated mandate to take the highly toxic waste it created off its hands. Hastily passed legislation mandating a massive transportation scheme to an inappropriate site would be yet another wrong decision to be regretted in the future. The evidence is compelling. The Nuclear Waste Policy Act of 1999, H.R. 45, mandates a premature and false solution to the nuclear waste problem that would have many consequences for future generations. Let us examine the evidence.

First, we should be clear, no emergency exists that requires the immediate removal of nuclear waste from its current storage facilities at commercial reactors. For almost two decades, the nuclear industry has lobbied policy makers in an attempt to solve its public relations problems in communities where reactors are located and to reduce its liability risks.

In reality, centralizing interim storage, as mandated by H.R. 45, would increase the risks to public health and safety. Although high-level waste should not stay at the point of generation forever, in the short-term it creates less risk than moving it. While we should never belittle the risks of on-site storage, the risks posed by operating nuclear reactors dwarfs the risks posed by the nuclear waste stored next to the reactor.

Even though the nuclear industry claims that declining space in reactor fuel pools is a major crisis, utilities are able to expand their on-site storage capacity with dry casks, and many have already done so. Although we believe that dry-cask storage on site is the least unsafe method of storing nuclear waste, this does not mean that we endorse either the particular ways in which this technology is being implemented or the Nuclear Regulatory Commission's (NRC) lax oversight of casks. While we do not believe that high-level waste should stay at the point of generation forever, we have not seen any evidence that we should rush to move the waste to an inadequate and unsafe interim storage facility. Storing the waste on-site for the interim will allow the scientific community to continue researching for better options.

Second, the risk posed by moving 100,000 shipments of highly irradiated nuclear waste on the roads and rails of 43 states and 320 congressional districts, over the next 30 years, is immense. The mandate in H.R. 45 for hauling waste to an interim storage facility represents a massive 4350% increase in nuclear waste shipments, exposing 50 million American citizens who live within a half-mile of the transport route to untold and grotesque risks.

Crashes will happen. In reviewing the Department of Transportation (DOT) data on hazardous material crashes, we found that 99,490 crashes caused the release of hazardous material into the environment over a 10-year period, from 1986 to 1996. The result of these crashes was not only $317 million in damages, but 114 deaths, 356 major injuries, and 4305 minor injuries.

Based upon DOE assumptions about the nuclear waste shipments, we can project 210 to 354 crashes will occur in the next 30 years if H.R. 45 becomes law. Furthermore, testing procedures for nuclear waste transport casks are inadequate and will likely lead to horrible injuries and contamination from nuclear waste crashes. A conservative DOE crash scenario of a crash in a rural area suggests massive cleanup efforts would be necessary, costing $620 million, requiring 460 days to detoxify the estimated 42 square miles. Urban crashes would be even more severe in terms of horrible injuries and an increased likelihood of radiation exposure to innocent victims.

Last week, we had a preview of the types of crashes we can expect to see if H.R. 45 becomes law. In Chicago, a truck improperly shipping empty nuclear material canisters struck an overpass, knocking canisters off the truck and on to other cars. Fortunately the canisters were empty. Even so, the highway, a major Chicago thoroughfare was shut down for several hours. The potential damage from crashes involving highly radioactive nuclear waste could be devastating.

The public recognizes the potential problems. A recent poll found that 82% of those surveyed do not want to live near a nuclear waste transport route. As a result, members of Congress who vote for legislation mandating this transportation will have to explain their vote on H.R. 45 to constituents who overwhelmingly and adamantly oppose its provisions. It should be remembered that passage of H.R. 45 will result in waste transportation through 320 congressional districts.

Third, the Viability Assessment (VA), the DOE's report on the Yucca Mountain site, provides conclusive evidence that the Yucca Mountain dump should never be built, based on DOE's own guidelines. A key piece of evidence is the data showing that water travel time from the repository to the accessible environment is only about 500 years. This is indeed shocking. It indicates that serious health hazards

will be present at and around the Yucca Mountain site over the long term because nuclear waste remains highly toxic.

A report in the January 7, 1999 issue of *Nature* provides further evidence that migration of radioactive material through groundwater occurs at a much faster rate than previously understood. Plutonium from an underground nuclear weapons test, conducted 30 years ago at the Nevada Test Site, has been detected in a test well located nearly a mile from the blast site. Further evidence can be gleaned from a report issued in December 1998 by the Institute for Energy and Environmental Research. Recent geological sampling indicates that warm groundwater has flooded the region where the proposed repository is to be located.

The Viability Assessment and the other scientific documentation provides dramatic proof of the lack of certainty surrounding predictions of how long radionuclides can be isolated. This compelling information should make the Yucca Mountain site ineligible for a waste dump according to DOE's disqualifying conditions in their own guidelines.

Related to this, H.R. 45 does not protect the public from dangerous levels of radiation in groundwater. Not only does H.R. 45 preempt the Safe Drinking Water act, it fails to provide any protection for groundwater, the key pathway of exposure to radiation.

Fourth, the Viability Assessment contains estimates of radiation exposure indicating that a large increase in cancer rates may occur in the area around Yucca Mountain. The exposure models demonstrate that the amount of radiation that the population living near the site will be exposed to will peak at 300 millirems over a period of 300,000 years. This almost doubles current background radiation at Yucca Mountain. It will result in a dose 20 times larger than the amount allowed by standards applied to other waste dumps. DOE falsely asserts that since the national average for background radiation is 360 millirem per year, that a 300 millirem increase per year is not an issue. However, science dictates that additional exposure to radiation causes additional cancer. Therefore, any increase, no matter how small, in background levels of radiation is intolerable, and doubling the local exposure is absolutely immoral.

Unfortunately, DOE and the nuclear industry will not admit that the Yucca Mountain site is inappropriate. And, the nuclear industry continues to try to convince lawmakers to reduce the protective standards for radiation exposure. By legislating a weaker level of protection than recommended by the National Academy of Sciences, the bill establishes a standard that fails to protect children, pregnant women and other vulnerable populations.

Fifth, the bill does further damage by preempting federal, state and local laws that are more protective than H.R. 45. The overly broad language ensures that local and state governments cannot require extra protections for their citizens. These laws are preempted automatically if they pose any obstacle to implementing the law. It is truly amazing that in Congress whose leaders claim to revere the 10th Amendment and states rights, legislation such as this dealing literally with life and death, contains some of the most extreme preemption of state law ever proposed. Instead of setting a national floor for safety that states can enhance, it prohibits states from being able to protect its citizens.

The bill also severely curtails the National Environmental Protection Act (NEPA), one of the most important environmental laws ever enacted. This means that a legitimate review of environmental issues at the Yucca Mountain site can not take place today or ever. It excludes from any consideration of several key factors, including the need for the facility and alternatives to the site. Thus without any crisis or justification, this extremely hazardous facility would be exempted from the basic provisions for environmental review that are required for federal actions that have significant impacts on the environment.

Not only are all federal laws preempted if they are inconsistent with H.R. 45, it would also prohibit EPA from setting a radiation protection standard. As mentioned above, a ground water standard is absolutely essential to protecting public health and safety. We challenge the idea that Congress has more scientific experience in setting radiation standards than EPA.

Sixth, H.R. 45 completely ignores new scientific evidence about earthquakes. In January of 1999, hundreds of earthquakes struck the Nevada Test Site near the proposed interim storage facility, the largest of which registered a magnitude of 4.7 on the Richter scale. From 1976 to 1996, 621 earthquakes with a magnitude of 2.5 or greater occurred within 50 miles of Yucca Mountain. In 1992, a 5.6 magnitude earthquake struck on a previously unmapped fault, 8 miles from Yucca Mountain, causing hundreds of thousands of dollars in damages to a local DOE building.

The threat is highlighted in a report in the March 27, 1998 issue of *Science.* Scientists from Harvard and the California Institute of Technology, using a network

of satellites, recalculated the geological expansion rate at Yucca Mountain. They found the rate of expansion to be 10 times greater than DOE assumptions, thus raising significant questions about the frequency of large earthquakes and volcanic activity at Yucca Mountain. So much for safe disposition of high-level nuclear waste than delivers a lethal dose of radiation in 3 minutes.

Seventh, the bill forces taxpayers, as well as the industry, to pay for the ever-increasing cost of disposition. An independent cost assessment from February 1998, reviewed by KPMG Peat Marwick, warns of the ever-widening shortfall in funding for the site. The $25 billion shortfall is a result of the escalating costs for the permanent repository and the additional costs of building the proposed interim storage facility. A more recent report by Synapse Energy, *Stranded Nuclear Waste,* projects that the shortfall could rise to $45 billion if nuclear power plant retirement continues as a result of regulation.

The situation surrounding these plants strongly suggest that the fees ultimately placed on ratepayers will have to be increased to prevent taxpayers from further subsidizing nuclear waste disposition. The funding mechanism in H.R. 45 will cause an even greater shortfall than the mechanism in the nuclear waste legislation from the 105th Congress, H.R. 1270. It further reduces the amount of money the industry must pay for the nuclear waste program, while increasing the cost of it. This is unacceptable.

Eighth, H.R. 45 is likely to cost taxpayers more money from litigation because it continues the trend in nuclear waste policy of setting irrational deadlines. The on-going litigation against DOE by the nuclear utilities is the result of the foolish deadlines established in the Nuclear Waste Policy Act of 1982. Several federal agencies testified that the 1998 deadline was unreasonably short. The industry lobbied for the deadlines and they are using DOE's failure to meet them as a reason to sue.

The utility estimates for potential damages are outrageous and the courts have yet to assign any damage amounts. In response to the litigation, DOE is making a good faith effort to settle the issues raised by the utilities by providing a cash settlement. While we do not endorse this payment, we question the motivations of the utilities in rejecting it. It seems that they wish to keep the lawsuit going because it serves their political agenda.

The industry's claim that the on-going litigation is proof that H.R. 45 is necessary is completely false. If passed into law, the legislation will create the same problem that previous nuclear waste legislation has created—more impractical deadlines and lawsuits. This has been a costly mistake in the past and it should not be a mistake that is repeated. If passed, H.R. 45 may result in more lawsuits against the government that must be paid for by taxpayer.

In conclusion, H.R. 45 is bad public policy. Rushing to move waste to an interim storage facility in Nevada violates the public's trust that their health, safety and pocketbooks will be protected by their Representatives and the Department of Energy. Rather than solving the nuclear waste problem, H.R. 45 will worsen it. The scientific evidence is mounting that Yucca Mountain cannot be the site for the permanent storage of high-level waste. As a result of the evidence, 219 environmental organizations petitioned the DOE to disqualify Yucca Mountain. The petition established both legal and scientific grounds for the disqualification. The environmental community is united in opposing H.R. 45, not only because of the inherent dangers I have described today, but because the concept of "interim" storage is really a charade.

We see only two options if the legislation passes and waste is shipped to an interim storage facility at the Yucca Mountain site. The first scenario is that under severe industry pressure the so-called interim storage facility would in fact become permanent, without any of the necessary safeguards. The other possibility is that the waste would have to be moved once again, needlessly increasing the risks of crashes involving radioactive waste.

We urge members of this Committee to carefully consider the full and real implications of H.R. 45. The nuclear industry is extremely powerful and it has used its political and financial muscle to force bad public policy decisions in the past. In the 1998 election cycle, Members of the House of Representatives have accepted $8.7 million in PAC contributions from the lobbying arm of the nuclear industry, the Nuclear Energy Institute and its members. In addition, members of NEI contributed over $3.7 million in soft money contributions to the national political parties in the 1998 election cycle. We hope that the Members of this Subcommittee on Energy and Power can look past the money and reject H.R 45 as ill-conceived and dangerous legislation.

Mr. STEARNS. I thank you. And I thank all of you. I just have a few questions here.

I think, Ms. Claybrook, you finished up. Maybe let me just ask you—because you are giving a different point of view; I respect your point of view and I think it is very healthy to have your point of view—your argument basically is to keep it at the sites?

Ms. CLAYBROOK. That's correct.

Mr. STEARNS. It has been established they are safe at the sites. What happens if we shut down nuclear power in some of these areas where you actually shut it down? What would you suggest we do with the waste material from these nuclear power plants if the plants are actually shut down?

Ms. CLAYBROOK. Well, there is a long decommissioning process, of course, for these plants, Mr. Chairman, and so there would be many years before these plants are just abandoned. It is not like you are going to shut down a coal plant, and you shut it down, there are no consequences and you can walk away from it.

Mr. STEARNS. Is there anyone else that would like to comment on that?

Mr. JOOS. If I may, we have shut down a nuclear power plant. We are in the process of decommissioning the plant. Our construction, or destruction schedule, if you will, will allow that facility to be returned to green-field by the year 2003 if we can ship the fuel. If we can't ship the fuel, that fuel could sit in that site for 20, 30 years. Who knows how long it is going to take?

Mr. STEARNS. Ms. Claybrook, your testimony asserts that there is no reason to accelerate acceptance of nuclear waste by DOE because, "No emergency exists that requires the immediate removal of nuclear waste from its current storage facilities." Are you aware that three Federal courts have found DOE had an unconditional obligation to begin acceptance on January 31 last year? And do you believe Federal agencies should ignore these legal obligations? I guess your question would be, how do you suggest that DOE be in compliance?

Ms. CLAYBROOK. Well, first, in terms of what I said about emergency, I meant practical, there is no practical emergency. In terms of the deadlines, we urged the Congress in 1982 not to set deadlines that could not be met. We have always urged that, because there is a science behind these issues.

When you set an absolute deadline for something and it doesn't conform to the science or the capacity to achieve that science, then you are not going to be able to meet the deadlines. So we believe that what this bill does is, it just adds more of those and more complexity facing the executive branch of the government.

It is very well for the Congress to say, we want this done now, and we want to get it done by X date, and pick a number out of the hat; but that does not result in rational activity by the executive branch. The executive branch—it would be irrational for them to do something that is dangerous. They don't have the authority to do that either.

Mr. STEARNS. Some members of this committee have talked about utilities suing for the money and so forth. I guess the question would be for Mr. Koppendrayer.

Which would you prefer, recovery of damages or performance? Would you rather have money or see DOE begin acceptance? That is sort of a softball question for you.

Mr. KOPPENDRAYER. Obviously, to begin movement of the waste, I think what we have to recognize here, Mr. Chair and members, is that the ratepayer has paid on a contract to have this waste stored, to move this waste from the plant so that the plant can continue to operate. In Minnesota, we are going to have—if it is not moved, we are going to have to prematurely shut down the plant. Then the ratepayer, while its money is here—their money is sitting here, has to pay again to build another plant and continue to pay again to store the waste at the site of the shut-down plant. So they are going to be asked to pay three times.

Mr. STEARNS. Is there anyone else that would like to answer?

Ms. CLAYBROOK. Mr. Chairman, I would just like to point out that the court did not order performance. You do know that. The court, in fact, very specifically put monetary payment, but did not order specific performance by the Federal Government. That is, they did not require the waste be moved.

Mr. STEARNS. Mr. Strand.

Mr. STRAND. Obviously, I would answer the question the same way that Commissioner Koppendrayer did, but I would also like to say, there was some discussion, I think, with the second panel in particular, that if in fact damages were awarded, basically out of what fund or what pocket would those damages be paid. I would suggest that to the extent it actually comes out of the fund, that would be the ultimate insult to the ratepayer who basically had that money taken out basically to pay for the nuclear waste to be moved; and then if in fact it comes out of that very fund, I think that would be the worst possible situation.

We obviously want the problem taken care of. We really don't want—we are not interested in this for the damages obviously. We want the nuclear waste basically off of Lake Michigan in a site hopefully that is a little more conducive to where it should be.

Mr. STEARNS. I have finished my questions. Just as a comment, and maybe this is directed toward Ms. Claybrook, we had a little graph here, I don't know if you saw it, where it talked about levels of radiation, whether you had a chest x-ray, whatever. It turns out that a chest x-ray is relative to 10, but us walking around the halls of Congress here is like, if I recollect, it was over 100. So every day Mr. Hall and I are getting this radiation from all this concrete and material here, without even realizing it, day in and day out, it is at least 10 to 30 times the level we will get if it is an x-ray.

So when you look at the different areas for radiation doses in perspective, it makes it look like what they are trying to do in Yucca Mountain is pretty small. I just bring that to your attention to show you the relative insignificance of the amount of radiation to compare with what Mr. Hall and I are seeing every day around here.

Ms. CLAYBROOK. You do have a dangerous occupation, Mr. Chairman.

Mr. STEARNS. In more ways than one.

Ms. CLAYBROOK. I recognize that. Particularly traveling on aircraft, in addition, adds to it. The question is, should there be additional radiation that you are exposed to and particularly radiation that you don't choose to be exposed to. I mean, these are——

Mr. STEARNS. But this is so small relative to what he and I are getting every day. If your argument is, it is not safe——

Ms. CLAYBROOK. It is additive. The more you get, the worse it is. Particularly if you drink it. It is one thing in the air and it is another thing if you consume it. So if it goes into the groundwater and you drink it, that is even more dangerous. And so I think that what you are talking about is—it is like having someone who smokes and someone who doesn't smoke. Someone who smokes takes that risk. If they decide they are going to fly on an aircraft, decide they are going to smoke, they are going to take that risk. But if you don't smoke, why should you be exposed to it?

That is the argument that I would say to you here. Why should someone who lives in Nevada be exposed to this extra?

Mr. STEARNS. Joan, hypothetically if I can show you categorically that it is extremely safe for a long period of time at Yucca Mountain, would you change your mind?

Ms. CLAYBROOK. What is a long period of time? This waste is highly toxic for 250,000 years, Mr. Chairman, and so we can't do anything about that now.

Mr. STEARNS. Let's say if it were a thousand years.

Ms. CLAYBROOK. A thousand. What kind of legacy are we leaving to our children?

Mr. STEARNS. But you understand by then we are going to understand how to take this waste and reconvert it into something new. Look at the computer industry, what has happened there. You know that there is going to be a technological innovation here, that this waste material is going to be made useful in a thousand years.

Ms. CLAYBROOK. There are two different issues, Mr. Chairman. One issue is this bill and whether we should lower our standards as this bill does; whether we should reduce the fees on the industry, which this bill does; whether we should have interim storage and have highly toxic wastes on our highways. And I happen to be an expert in highway safety, so I can tell you much more about that after this meeting if you would like.

And so that is what this bill does. That is one question. We oppose this bill for all the reasons that I have stated.

The other question is, we are now stuck with this waste. We urged that this waste never be created, but it was. Now the nuclear industry wants to get rid of it. They say it is the Federal Government's problem, this nuclear waste. They have made profits on it, but it is the Federal Government's problem. And so we can't do anything about that now.

We now have the nuclear waste, and surely I would be extraordinarily happy if we had a technological solution that was developed in the future, and God knows, I hope we do.

Mr. STEARNS. We will.

Ms. CLAYBROOK. Because if we don't, what a legacy to leave to not only one generation but 30 generations behind us.

Mr. STEARNS. I think I am all finished and we will let the distinguished colleague, Mr. Hall, proceed.

Mr. HALL. That may be another reason for term limits.

Mr. STEARNS. We can kill ourselves with radiation treatment.

Mr. HALL. Ms. Claybrook, I would like to ask you a question or two.

You are opposed to H.R. 45, are you not?

Ms. CLAYBROOK. That is correct.

Mr. HALL. I presume that from your testimony.

Ms. CLAYBROOK. Right.

Mr. HALL. Your organization has been opposed to it from the time it was introduced?

Ms. CLAYBROOK. Right.

Mr. HALL. You were opposed to the other sites that they were looking at?

Ms. CLAYBROOK. To the other what?

Mr. HALL. The eastern site that was under consideration, you opposed that?

Ms. CLAYBROOK. For temporary storage?

Mr. HALL. Yes.

Ms. CLAYBROOK. Yes.

Mr. HALL. Or for permanent storage?

Ms. CLAYBROOK. Well, at some point, you have to have permanent storage of this, of this waste that we disapprove of.

Mr. HALL. On temporary storage, let me ask you about that.

Your organization supports suits against onsite storage, do you not?

Ms. CLAYBROOK. Supports suits by whom?

Mr. HALL. Well, you would know that better than I do. How about in Congressman Saxton's area, Oyster Creek. Are you not supporting that suit?

Ms. CLAYBROOK. Not that I know of.

Mr. HALL. Not funding it?

Ms. CLAYBROOK. Oh, no. No, no, absolutely not.

Mr. HALL. You are opposed to interim storage?

Ms. CLAYBROOK. We are opposed to interim storage as it has been proposed. We are.

Mr. HALL. But you don't know anything about the Oyster Creek suit that was filed?

Ms. CLAYBROOK. No. Sometimes our organization does things I don't know about, but not very often. In this case I am pretty sure that that is not true. I will submit something different for the record if that is true, but I don't think so.

Mr. HALL. I am glad to know that because my next question would be, what are you for, what do you favor in the form of storage? And I guess maybe I could ask a question that would preclude my going any further with you.

You are opposed to nuclear energy?

Ms. CLAYBROOK. Oh, absolutely. We have been opposed to nuclear energy. We have been in favor of solar energy and the cleanest and safest energy sources possible. When the Congress made a decision in 1953 to put all these resources, billions and billions and billions of dollars, into nuclear energy rather than into solar energy, I think that Congress made a huge mistake; and we are stuck with it.

Mr. HALL. So there is not anything I could say or this committee could say or this Congress could say that would make you for or favor nuclear energy, the pursuit of further nuclear energy?

Ms. CLAYBROOK. Absolutely not.

Mr. HALL. Even as an alternative to the sources of energy that we have that might preclude a war, the signs that say, "No nukes could say no wars," if we could solve the energy crisis?

Ms. CLAYBROOK. I think if we put the same resources into renewable energy and into conservation, then we would never have to have a war over energy, Mr. Hall; and I would love to have a chance to come talk to you about that.

Mr. HALL. Well, we are together in one thing in that we are opposed to wars, right?

Ms. CLAYBROOK. We are both opposed to wars.

Mr. HALL. So we got somewhere. I didn't just totally lose us.

I could be ugly and ask you about whether or not you supported the Brady bill.

Ms. CLAYBROOK. We were not involved in that, but I would support the Brady bill.

Mr. HALL. Was that not an infringement by the Federal Government onto the States? Shouldn't the States decide who can carry a gun and who cannot, really and truly?

Ms. CLAYBROOK. I happen to be in favor of a lot of Federal safety and health standards. I believe that that is where Federal—health and safety standards, where it is appropriate for the Federal Government to have some national safety programs. So I have very much been in favor of that.

But I have been amazed to see this Congress particularly be in favor of preempting States in so many areas where I thought that wouldn't ever happen with this particular Congress.

Mr. HALL. I don't agree with what you say, but I certainly agree with the way you say it. You represent your folks very well.

Mr. Chairman, Mr. Dingell had a question for Mr. Joos, but he had a schedule conflict and couldn't stay for the panel. I know he would like to be here.

I would like permission for him to submit a question for Mr. Joos for the record and ask Mr. Joos to answer that question.

Mr. STEARNS. Surely. Go ahead.

Mr. HALL. And, Mr. Joos, I might ask you some questions about the standards and the differences, and those are things we have to work out.

I think—was it Mr. Strand or Mr. Koppendrayer that said that it was up to the Congress to do something? Or both of you? I guess I would ask you, what can we do? We have begged and pleaded and cajoled. Even in this bill we set a standard in the bill that is in excess of the EPA or NRC thrust. We did that simply because no one else had and we had to have it.

But we are really seeking help in how we can pass this bill and make those that ought to comply and honor the agreement that they had with you all, when you first started putting your money up, carry out their end of it.

Tell me how we do that.

Mr. STRAND. Basically, Congressman, what we are asking you to do, No. 1, is pass the bill.

Mr. HALL. I am for that.

Mr. STRAND. We certainly appreciate your efforts to try and get a bipartisan type of bill, particularly that the administration hopefully can live with if there is such an animal.

The second thing is, to the extent you do pass something and it becomes law, we are of course asking you to exercise oversight over that, because we tend to think that vigilant oversight is going to be necessary to make sure that the word of the Congress is carried forth.

Mr. HALL. Mr. Joos, would you like to discuss the standards that are needed and the present status of them and where we are?

Mr. JOOS. There was an earlier discussion——

Mr. HALL. Are you familiar with the standard we set in the bill?

Mr. JOOS. Yes, generally speaking. There was an earlier discussion with the EPA and the NRC representatives.

Mr. HALL. We set those standards to try to get Ms. Claybrook for the bill, but I am going to mark her doubtful on this thing.

Mr. JOOS. I think as you have all correctly pointed out, the 100 millirem standard that is incorporated into the bill is a fraction of what normal background radiation is, and the normal background varies widely across this country and as you pointed out in these buildings can be significantly higher than that.

We think it is a reasonable standard. It is a standard that is consistent with international standards, and it is consistent with the NRC's own policies with regard to total radiation exposure to individuals from all nonnatural background areas. The NRC, I think, acknowledged that they have somewhat arbitrarily chosen 25 percent of that standard, or a 25 millirem standard, as their own recommendation, leaving 75 percent of that remaining nonnatural radiation impact to other sources.

I would frankly argue that that is probably overly conservative, given the location of this facility and the likelihood of any significant other sources contributing.

But I will say this: We have dealt with the Nuclear Regulatory Commission for many, many years. It is an independent agency, a bipartisan agency, if you will, and it is one that has a very good record of basing their regulations on sound science; and for that reason, we strongly endorse the idea of moving the responsibility for these standard settings to the Nuclear Regulatory Commission. And in addition to establishing an initial standard of 100 millirem in this bill, it also provides for the NRC to be able to reduce that standard if they feel it is appropriate for health and safety purposes based on their scientific evaluation.

Mr. HALL. Do you think that there are a lot of utilities in the same difficult position that you have experienced, and do you believe that the lack of a solution to the waste problem is driving a lot of these utilities' decisions about whether or not to keep their nuclear units open?

Mr. JOOS. We are facing significant investment, as are others. We have been able to solve the problem through significant investment, and as I have indicated, are going to end up storing nuclear fuel on our sites in dry casks for a period of years. We are not alone in that regard, although Mr. Abdoo is facing a situation where he possibly won't be able to do that for various local reasons and may be forced to shut those facilities down early.

I had mentioned to you earlier, 25 percent of the Nation's nuclear plants have already exceeded their original design storage capa-

bility, and within the next 10 years, 80 percent of the nuclear plants will have. So it is a critical issue.

Ms. Claybrook talked about the lack of an emergency. I believe there is more than a legal emergency here. We are facing shortages of electric supply in this country. There is a big debate, as you know, about clean air standards that may force a lot of fossil units to have significant outages over the next decade, and quite frankly, I think it is a real emergency that we solve this problem so that we don't run into a shortage of electric supply in this country, and we don't have renewable solutions in the near term of any sort that will replace nuclear power.

Mr. HALL. I don't know how my time is, but I think Mr. Koppendrayer has something he wants to offer.

Mr. KOPPENDRAYER. You asked a while ago if I said something. I wanted to respond a little bit.

Having been a legislator and now being a regulator, we dealt with this nuclear issue at both—I have at both levels. We have dealt with the environmental concerns. Right now, as a regulator, if we listen predominantly to the environmental concern, we are told on the one hand reduce emissions, CO_2 being a greenhouse gas that is of most concern, reduce that; and on the other hand, we are going to be forced to shut down 20 percent of our generation.

You just can't do both. It doesn't work. Even in Minnesota, we mandated, when I was in the legislature, 400 megawatts of wind. That will be the biggest wind field in the United States when it is complete; there are 200 megawatts, complete. The other day, when I was watching the computer, that was putting out 28 megawatts of power, because the wind wasn't blowing.

So we have got ourselves in a Catch 22. I would just urge the Congressman to let common sense prevail if we want to keep the lights on.

Mr. HALL. When you say, it is up to Congress, we want to pass a bill and we have asked for input from everyone that is both opposed to the bill and supports the bill. I think if you mean that it is up to Congress to keep oversight on it, as it goes and after we have passed the bill, I certainly agree with you on that, but I don't know of anything Congress can do until we get an NRC license and they are awaiting impact statements.

It is just like if a 400-pound guy falls down, you want to help him up, you just don't know where to take hold. We are trying to figure out a way here to get this thing off the ground.

I would say to Ms. Claybrook that I also use the States' rights argument a lot of times. When I don't agree with something, I go backways; I go both ways.

Ms. CLAYBROOK. I thought it was your primary argument.

Mr. HALL. You are very versatile. We all try to do that up here. I thank you and I yield back my time.

Mr. STEARNS. I thank my colleague.

Next, Mr. Shimkus.

Mr. SHIMKUS. Thank you, Mr. Chairman.

I was interested, Mr. Abdoo, in your initial comments and the fact that you have a facility that is in danger of closing because of the lack of the Federal Government's action. Talk me through or let me see if I have got it.

You are permitted to have so much onsite. If you go past that capacity, then you are going to be forced to close; is that correct?

Mr. ABDOO. Yes, sir. We are pursuing every option, but when we had to go to the State to get permission to get additional storage onsite, it was a long, drawn-out process with lots of legal challenges. The State's argument is, you paid once and why should the residents of Wisconsin pay twice?

Where we come from, a deal is a deal. We wrote a check, they cashed it, they have an obligation to take the waste. And so we are afraid that we are unlikely to convince the State of Wisconsin to allow additional storage onsite. At the same time, we see the same Federal Government impose additional NO_X restrictions, we have got the global warming business. We operate the largest green power program in the United States of America. Two of the seven U.S. joint implementation projects are Wisconsin Electric's, and we can't get our government to live up to the agreement that we made. So it is very frustrating.

Mr. SHIMKUS. Is Wisconsin a high- or low-cost State?

Mr. ABDOO. Very low.

Mr. SHIMKUS. That is what I thought.

I guess the question I want to follow up with, so you haven't moved, the State of Wisconsin hasn't moved on any energy dereg bill at this time?

Mr. ABDOO. None.

Mr. SHIMKUS. So you are still covered by regional boundaries to provide service?

Mr. ABDOO. Yes, sir.

Mr. SHIMKUS. What is going to happen to the ratepayers when you close that facility, based upon the ability to transport and meet the standards of Wisconsin law?

Mr. ABDOO. Costs will go up significantly to the customers of Wisconsin. Even if you replace it with combined cycle natural gas, which is pretty cheap these days, their costs will go up, and the air they breathe will be dirtier than it is with the plant in operation.

Mr. SHIMKUS. I am glad you mentioned that.

For my final question, I want to ask Mr. Strand, Mr. Joos and Mr. Abdoo, under the proposed Kyoto Accord, how does that affect the nuclear industry?

Mr. STRAND. Well, there are a number of folks that come down in different ways in how it would affect nuclear energy. There are certainly some that have suggested that if we are to meet these specific recommendations that we are signing there, that we are going to have to rely less and less on fossil fuels; if that means we are going to have to rely on some alternate source, whether that be nuclear renewable, combined cycle gas, whatever, but certainly there will have to be less reliance on fossil fuels in the country. What the alternative is going to be is, of course, a policy decision and in some cases will be a market-based decision.

Mr. SHIMKUS. Mr. Joos.

Mr. JOOS. I think Mr. Strand answered that question pretty well. Some have advocated that the nuclear industry, nuclear plants in general, should get specific credits for not emitting greenhouse gases. I think the bottom line is that oil, gas, coal, all fossil fuels

when you burn them generate carbon dioxide which is the greenhouse gas we talked about. The solution to that problem is to burn less fossil fuels and that certainly advocates that you need nuclear power to fill the portfolio.

Mr. ABDOO. My answer, sir, is that it will be virtually impossible to make significant reductions in greenhouse gas emissions if the nuclear fleet is shut down as a result of the inability of the Federal Government to live up to its obligation.

Mr. SHIMKUS. Thank you, and I yield back.

Mr. STEARNS. I thank my colleague. The gentleman from Massachusetts, Mr. Markey.

Mr. MARKEY. Thank you, Mr. Chairman, very much. You know, you have got a little bit of a problem here because notwithstanding any impact which roving bands of antinuclear troubadours strumming on their guitars might wish that they had upon the fate of the nuclear industry, the reality is that its demise was decided by Wall Street and Adam Smith looking at it as a generator of electricity per kilowatt hour and balancing it against others. And the truth is that one of the main reasons why the nuclear industry died beyond Chernobyl and Three Mile Island was that a lot of very persuasive people from Texas convinced people that cheap and clean natural gas was a better way of generating electricity. And those Texans made a very powerful argument, partnering with Canadians and others, to make that switch, and we have moved in that direction.

And as we debate the deregulation of the electric industry across the United States, of course, we have a phrase "stranded investment," which all of the utility executives use. Now, they use the words "stranded investment" because they don't want to say the words "nuclear power plants," and they want to get bailed out from those decisions, and they want consumers to pick up the tab for their ill-considered judgments 20 years ago, 15 years ago. But they hide behind the phrase "stranded investment" because they don't want to say the words "nuclear power plant."

The reality is that there won't be any more nuclear power plants in the United States, not because of any antinuclear movement, but because consumers and citizens don't want them anymore and there isn't a utility executive I know in the United States that is actually contemplating ordering one. I know that once they announced that they were going to be ordering one, that that might have a severe impact on their bond rating and their popularity. And I would be interested in finding out who will be the first utility executive to announce that they are interested in building one, but I haven't seen one in the last 10 years, to be honest with you.

But it has nothing to do with anything other than the free market at work. And I am a big advocate of the free market to the extent to which, like Adam Smith, I hate monopolies and most of these decisions were made by monopolies.

As you move to a deregulated, demonopolized marketplace, you are much less likely to have monopolists making decisions that they know are going to be supported by local PUCs who are going to allow for this cost-plus electricity pricing to be passed on to consumers. You are just not going to have that environment, and that

is why we worked so hard to pass that demonopolization, deregulation environment and created it nationally and locally.

So my question is this for Ms. Claybrook: You note on page 7 that H.R. 45 may force the taxpayers to pick up an ever-widening shortfall in the nuclear waste fund due to early retirements of reactors, nuclear reactors at the top of the list, and increased costs of paying for both permanent repository and interim storage. Do you think it is fair that ratepayers are going to have to shoulder that burden?

Ms. CLAYBROOK. We have been talking about commitments today and we have been talking about little commitments, but I would certainly say that the first commitment that was made in the nuclear power era was the commitment that it is too cheap to meter, and I think that is what sold nuclear power to a lot of people in the United States. And, in fact, nuclear power costs have increased dramatically, and in fact no plant has been ordered since 1974. And it has been the marketplace that has done that.

The taxpayer, as you know, often—every one of you on this panel knows that when there are huge disasters, whether it is a bank that fails that is huge, or whether it is nuclear power that we don't know how to handle in terms of its waste, that the taxpayer does get stuck with the bill. And of course I don't think it is fair, particularly because of the way nuclear power was first sold to the American public.

Mr. MARKEY. Thank you, Mr. Chairman.

Mr. STEARNS. I thank my colleague. And, Mr. Barton, would you like 5 minutes?

Mr. BARTON. This should be the last 5 minutes. First, I want to commend this panel for being here. I apologize. I had a meeting with the chairman of the full committee on this issue about whether we could move to markup and if so, when so. Which I said obviously I hadn't heard everybody on this panel but I felt like based on the previous two panels, that it is quite possible within the next month that we could work out some of the technical difficulties and perhaps have a markup early next month on this piece of legislation.

I have not been in the Congress quite as long as the gentleman from Massachusetts who just spoke, but my view of the world is somewhat different than his and I would argue that nuclear power is here to stay. If you go outside the Continental United States and certainly in western Europe and Japan, it is their power of choice today. And while the gentlelady from Public Citizen has rightly pointed out we haven't ordered a nuclear power plant in this country since 1974, it is primarily because everybody's estimates of the cost of alternative sources turned out to be radically wrong in the right direction.

When many of the nuclear power plants operating today were first decided to go online, we were projecting, $50, $60 barrel oil and the spot market price for Texas Western media crude is about $11.63 cents today. In the late 1970's natural gas was selling for as high on the spot market for $14 in MCF. Today it is below $2.

So we have been fortunate that our crude oil and our natural gas supplies and their cost, the supply has gone up and the cost has gone down, which doesn't say in the next 20, 30 years that might

reverse. And what is amazing is not the cost of nuclear power is so high, it is amazing to me that it is as low as it is, given all the regulatory burdens that have been put on it that are not on the energy sources.

I can take you to Comanche Peak near my congressional district and there hasn't been an earthquake there in 25,000 years, and yet the support beams are tripled, backed up. And I could take you to a coal-fired plant 50 miles away, that they don't have any of that.

So, you know, a coal-fired plant in Texas cost, you know, a fifth of the cost of the nuclear plant. So we can argue about what happened in the past, but the bill before us today is what do we do about the waste that has been generated. And everybody understands that that waste is there. The law requires the Federal Government to take receipt of it. It requires that it begin to take receipt by last year. It hadn't done that, and so the Upton-Towns bill is to try to expedite the process so that on an interim basis, we get the waste centralized at Yucca Mountain, and then as a permanent repository process goes forward, we try to help expedite that and taking the concerns the DOE had about funding and some of those issues.

So I am much more optimistic about the chances of passage of this bill, and long term I am much more optimistic about the chances for nuclear power, not just in the world but the United States.

Mr. HALL. Would the gentleman yield?

Mr. BARTON. I don't really have a question.

Mr. HALL. I will help you out there.

Mr. BARTON. I yield to you.

Mr. HALL. Do you believe that the Congress could have done a better job of requiring more standardization of the construction of nuclear plants?

Mr. BARTON. I think a better job could have been done. I am not sure the Congress is the appropriate agent to require that.

Mr. HALL. If they needed to be enticed, to put a carrot out there to get them not to build monuments to their idea of what it ought to be.

Mr. BARTON. They didn't need to reinvent the wheel in every new power plant.

Mr. HALL. Had they just followed the—France lives off the nuke, England lives off the nuke in the North State successfully. I don't know that they have this big battle against nuclear energy in either of those countries. But obviously we have done—we have passed legislation that tried to bring about standardization and I think that is going to be helpful but, you know, you and I are in an unusual situation in that we represent a State that produces fossil fuels and has—we're oil and gas oriented. We have the oil patch. Part of it is in your district. Part of it in mine.

I think people need to remember fossil fuels fill the Big Inch pipelines that went during World War II and the Big Inch pipelines that went up into the Lend-Lease destroyers, that we kept the people fighting the battle against Hitler and that was in vogue then. Oil and gas was in vogue then.

I think it is kind of popular to say you are opposed to any type of nuclear energy. I go to the schools and when I start out to make

a nuclear energy speech, ''How many of you for foreign nuclear energy? '' none of them hold up their hands. And then I talk to them about nuclear energy as an alternate source or solar or any other alternate source might prevent a war. And now, How many of you are for nuclear energy? And most of them hold up their hands and just the teachers are miffed.

I just think that we have to be careful and I think it certainly makes sense that we try to have a design that is conducive to safety and nobody can be against that. But I think we have to have an alternate source if we are going away from fossil fuels. I am a fossil fuels guy. I am their captive. They are in my district. I have the oil patch and they are having a hard time now. A lot of people see them as driving Continentals. Well, they are but they are 1979 models. We are having a hard time down there.

But I respect this group here who are pushing and putting your best foot forward, and I respect Mrs. Claybrook; and as I have said about Mr. Markey and me voting differently, we need all types on every committee, and then maybe you come together and work something out.

Just like the deregulation of electricity and stranded cost. Of course we are going to pay stranded cost. Either that or we are going to have a bonanza for all the lawyers in the country. They are going to go straight to the courthouse and get their stranded cost, because they spend them in return for gracious living that they provided pursuant to a contract that they had with the government. Now, there is some that were foolishly purchased perhaps, but we can ferret those out.

We absolutely have to do something about the provisions of H.R. 45. And once again, the chairman has begged for information on it, begged for your differences, how we can shore it up and make a good bill out of it. And for those of you who just plain are against it, I respect you. Stand out there and throw rocks at it, but I think we really need to get this bill. We need to get it passed. We need to get it behind us and get on about our business. I yield back.

Mr. BARTON. Before the chairman recesses the hearing, Congressman Hall and Congressman Dingell have asked myself and Chairman Bliley to either hold one more hearing with Secretary Richardson or perhaps do a meeting with Secretary Richardson. It is a meeting of those four people, and we are going to try to honor that request.

I do not think we will have another full hearing with outside witnesses. If we have another hearing on this issue, it will be with Secretary Richardson. And as I said earlier, we do plan to try to consider a subcommittee markup within the next month. So when we send the written questions to this panel, please send them back as soon as possible. Obviously if we need to contact, telephone a person at the staff level, we will do that because we are going to try to move this legislation in the very near future. With that, I would turn it over to the vice chairman.

Mr. STEARNS. I thank Mr. Barton. Before we adjourn, by unanimous consent the committee will allow all members to submit additional questions for the record, either to the panelists or for the record, and hopefully they will be in within 5 days. I again want to thank all of you, and the committee stands adjourned.

[Whereupon, at 3:48 p.m., the subcommittee was adjourned.]
[The following material was received for the record:]

PREPARED STATEMENT OF CYNTHIA HILTON, EXECUTIVE DIRECTOR, ASSOCIATION OF WASTE HAZARDOUS MATERIALS TRANSPORTERS

The Association of Waste Hazardous Materials Transporters (AWHMT) represents companies that transport, by truck and rail, waste hazardous materials, including industrial, radioactive and hazardous wastes, in North America. The Association is a not-for-profit organization that promotes professionalism and performance standards that minimize risks to the environment, public health and safety; develops educational programs to expand public awareness about the industry; and contributes to the development of effective laws and regulations governing the industry.

The transportation of radioactive materials, despite its risks, has historically been one of the safest of all transported hazardous materials. The only way to guarantee no transportation risk is not to transport the material. While that is a policy decision before Congress, we think it important that the transportation safety record be known.

Radioactive Materials Are Transported With A High Degree Of Safety

We believe that radioactive materials, including high-level radioactive waste and spent nuclear fuel, from commercial generators can be transported safely. The U.S. Department of Transportation (DOT) estimates that approximately 2,800,000 shipments of radioactive materials occur annually. This figure represents approximately 1 percent of all hazardous materials shipments. During the last decade, incidents involving any radioactive material have averaged 14 per year—0.01% of all incidents. No deaths and 5 injuries, all minor,[1] were reported as a result of these movements. We believe these statistics bespeak volumes about the success of DOT's implementation of the Hazardous Materials Transportation Act (HMTA) and industry's commitment to safe business practices.

DOT's Jurisdiction Over The Transportation Of Radioactive Materials Should Not Be Compromised

Radioactive materials have been regulated by DOT since Congress enacted the HMTA in 1975. The purpose of the HMTA is to protect the nation against the risks to life and property inherent in the transportation of hazardous materials, including radioactive materials. Critical to this mission of safe transportation was the premise that consistent, uniform national standards aid compliance and enhance safety. When different federal agencies regulate in the same area there is the potential for inconsistent regulation and enforcement. We are concerned that some of the language in HR 45 might have this result. Furthermore, jurisdictional overlap between DOT and DOE will lead to confusion over the role of the states in regulating the transportation of radioactive materials. Clearly, the movement of materials contemplated under HR 45 will require interstate transportation. The transportation of these materials cannot occur in an environment where "conditions" for transportation can change from Jurisdiction to jurisdiction. In the last eighteen months, at least 6 states have considered legislation to set standards for the transportation of high-level radioactive waste and spent nuclear fuel. Safe, efficient transportation depends on uniform rules. HR 45 provides no assurance that DOT's will retain its preemptive authority over non-federal requirements that frustrate the safe and efficient transportation of radioactive materials.

Sections of HR 45 that present specific concerns follow:

- § 201(g)(2) provides the DOE "in consultation with the State of Nevada and appropriate counties and local jurisdictions, shall establish reasonable *terms and conditions* pursuant to which the Secretary may" truck spent nuclear fuel and high-level radioactive waste in Nevada. (Emphasis added.) As noted above, we have seen legislation introduced in several states to impose unique conditions on the transportation of radioactive materials. The precedent HR 45 would set with DOE and the State of Nevada will undermine DOT's ability to ensure that the transportation of these materials is not frustrated by diverse, unique local terms and conditions. DOT should determine the terms and conditions necessary and appropriate for the transportation of radioactive material by truck.
- Under § 202, DOE must use DOT routing and training requirements, but DOE apparently is tasked to set standards for transportation tracking. DOT should be the lead on such standards.

[1] DOT classifies injuries as "major" or "minor." "Minor" injuries are those that are handled on an outpatient basis.

- § 203(c) requires training for *public* safety officials. The training is supposed to cover procedures for the safe routine transportation of radioactive materials as well as procedures for emergency response situations. DOT is to set the training standards. While we strongly support DOT taking the lead in training standards for "the safe routine transportation" of these materials, the Occupational Safety and Health Administration (OSHA) has taken the lead in training standards and requirements for emergency response. (See 29 CFR 1910.120(q) concerning response to releases of "hazardous substances," defined to include DOT "hazardous materials.") Congress should not confuse these jurisdictional lines by now saying that DOT should determine emergency response training standards.
- § 203(c) also provides that a number of federal departments and agencies periodically review and attempt to coordinate emergency response and preparedness training programs to avoid duplication. The provision does not specify that the "training programs" to be coordinated are those related to radioactive materials. We believe the legislation should clarify the exact scope of the training coordination effort and we believe that the legislation should designate which agency should lead this effort. If this coordination effort is geared toward "public safety officials," we believe OSHA should take the lead.
- § 203(g) requires DOT to issue rules establishing training standards applicable to "workers directly involved in the *removal* and transportation of" covered radioactive materials. (Emphasis added.) DOT is to develop this training standard in consultation with OSHA and the Nuclear Regulatory Commission. The term "removal" is not defined. If "removal" is to have the same meaning as "hazmat employee" as defined by the HMTA, DOT has ready developed the necessary training standard for these workers and those who perform the actual transportation of these material. (See 49 CFR 172 Subpart H.) DOT's training standards are performance-based. These rules already require testing and recordkeeping. Even though paragraph (2) allows DOT to "refrain from promulgating additional regulations with respect to worker training" if DOT determines that its existing standards are adequate, DOT is still require to devote staff and resources to an unnecessary rulemaking.
- § 203(3)(C) complicates the training standards issue and jurisdictional responsibilities by requiring that DOT's hazmat employee training requirements must cover those "responsible for responding to and cleaning up emergency situations occurring during the removal and transportation of spent nuclear fuel and high-level waste." Again, training for employees engaging in emergency response and clean up is covered by OSHA.
- The same comment as is made for § 203(3)(C) could be made for § 203(4). In addition, it is not clear what government entity has responsibility for implementing this provision of law.
- Finally, we believe the term "emergency situations" as used in § 203(3)(C) and (4) needs to be defined.

Congress should not compound jurisdictional uncertainty over the transportation of hazardous materials that are radioactive. HR 45 needs to be amended to make clear that DOT is the agency with the most expertise to regulate the transportation of radioactive materials, not DOE or the states.

Other Issues

- Safety and Security

Congress should consider expanding DOT's current mandate to ensure that the transportation of high-level radioactive waste and spent nuclear fuel is conducted in a safe manner to include a mandate to ensure that security risks are considered as well.

- Heavy Haul Truck Transport

A lot of attention is paid to the infrastructure preparations needed to transport spent nuclear fuel and high-level radioactive waste from the intermodal facility at Caliente, NV to the interim storage facility. These provisions beg the question of why similar infrastructure preparations are not necessary at the sites where such "heavy-haul" shipments originate. The NRC has approved a variety of casks; not all necessitate heavy-haul transport. The merit of using casks that require heavy-haul truck transport should be revisited absent an ability to ship such casks entirely by rail.

Conclusion

Thank you for your consideration of these critical issues. We look forward to working with the Subcommittee as this legislation is refined.

UNITED STATES NUCLEAR WASTE TECHNICAL REVIEW BOARD
ARLINGTON, VA 22201-3367
March 5, 1999

The Honorable JOE BARTON
Chairman
Subcommittee on Energy and Power
Committee on Commerce
U.S. House of Representatives
2125 RHOB
Washington, DC 20515-6115

DEAR MR. BARTON: On behalf of the Nuclear Waste Technical Review Board, I am enclosing the Board's response to a question that you forwarded to the Board from Representative Edward J. Markey. The question is a follow up to the February 10 hearing on H.R. 45 before the Subcommittee on Energy and Power. We hope Mr. Markey will find the information contained in the answer useful.

The Board appreciated the opportunity to present its views to the Subcommittee at the hearing. We look forward to providing whatever technical and scientific information the Subcommittee may find helpful as it considers the many challenging issues related to the management of spent nuclear fuel and high-level radioactive waste.

Sincerely,

JARED L. COHON
Chairman

Enclosure

cc: The Honorable Ralph M. Hall, Ranking Minority Member
The Honorable Edward J. Markey

FOLLOW UP QUESTION FOR THE RECORD

Question: In 1996 the Board states that "There are no compelling technical reasons for moving commercial spent fuel to a centralized storage facility at this time," and suggested that "it makes technical, management, and fiscal sense to await the decision on the suitability of the Yucca Mountain site for repository development before beginning development of a federal centralized storage facility." Has anything changed to provide a compelling technical reason for centralized storage?

Answer: The Board observed in its March 1996 report "...there appear to be no compelling technical reasons for moving spent fuel to a centralized interim storage facility *for the next few years*." This conclusion reflected statements by the NRC and others that spent fuel can be stored safely at reactors *or* at a centralized storage facility for up to a hundred years. However, the Board went on to say that a large centralized storage facility (with the accompanying transportation infrastructure) offers logistical and operational advantages for the waste management system. The Board felt that it made sense to have an interim storage facility developed and receiving spent fuel at a rate of 3,000 MTU per year by about 2010, when civilian reactors start closing down in significant numbers. The Board noted that there are advantages to collocating a centralized storage facility with an operating repository and that developing the transportation infrastructure necessary to begin moving significant amounts of waste likely will take several years. Therefore, the Board suggested that it made sense to continue site-suitability studies, to begin developing the needed transportation infrastructure, and to make a decision about centralized storage after a determination of the suitability of the Yucca Mountain site.

While the Board found no compelling technical reasons for moving commercial spent fuel to a centralized storage facility for the next few years, the Board acknowledged in its report that there could be important *nontechnical* reasons that might prompt policy makers to consider developing a centralized storage facility before a site-suitability determination. The Board feels that its role should be to provide decision makers with technical and scientific information, which they can take into consideration when making decisions about waste management and disposal, and it was in that spirit that the Board released its report on storage. However, the Board understands that a decision about whether or when to develop a centralized storage facility is a policy decision that is outside its technical purview.

MICHIGAN PUBLIC SERVICE COMMISSION
LANSING, MI 48909-7721
March 5, 1999

Honorable JOE BARTON
Chairman
Subcommittee on Energy and Power
U.S. House of Representatives
Room 2125, Rayburn House Office Building
Washington, D.C. 20515-6115

CHAIRMAN BARTON: Thank you for this opportunity to respond to the follow-up questions of Representative Markey regarding H.R. 45, the Nuclear Waste Policy Act of 1999. The attached responses to the questions are on behalf of the Michigan Public Service Commission and the National Association of Regulatory Utility Commissioners. I would also like to once again thank you and the Members of the Subcommittee for providing us with the opportunity to present our views on H.R. 45 and this issue of critical importance to our nation. Please let me know if I can be of further assistance.

Sincerely,

JOHN G. STRAND, *Chairman,*
Michigan Public Service Commission and National Association of Regulatory Utility Commissioners, Subcommittee on Nuclear Issues

RESPONSE OF MICHIGAN PUBLIC SERVICE COMMISSION CHAIRMAN JOHN STRAND

Question 1. As a State official, do you support H.R. 45's provisions preempting all State and local requirements that present any "obstacle" to carrying out the Nuclear Waste Policy Act or Atomic Energy Act?

Response. Yes, in this specific situation, I do support federal preemption of any single State's initiatives that would have the effect of creating "obstacles" to carrying out the Nuclear Waste Policy Act or Atomic Energy Act. The issue of nuclear waste transportation and disposal is a unique national problem that is appropriately managed by the Federal government. As specified by the national policy embodied in the Nuclear Waste Policy Act of 1982, the transportation of spent nuclear fuel and high-level nuclear waste is a matter of federal jurisdiction and is clearly in the national interest.

The transportation of spent nuclear fuel and high-level nuclear waste has been going on through out this country for more than 30 years and continues today. Nuclear wastes from the Department of Defense, the Department of Energy, from foreign research reactors and some commercial nuclear reactors have been transported all over this country with regularity and without incident. Such transportation is very tightly regulated by the Nuclear Regulatory Commission and the U.S. Department of Transportation. To allow a single State to create an obstacle to the federally authorized transport of these wastes would be a violation of the federal responsibility. Any suggestion that spent nuclear fuel and high-level nuclear wastes from commercial nuclear reactors should not be granted the same federal preemptive rights as the wastes of the Department of Defense, Department of Energy, and even foreign research reactors, when the transportation, storage and disposal is indisputably a statutory obligation of the Federal government, is disingenuous at best.

We would consider one caveat to this position as follows: If a State can make a compelling case that a particular route through that State presents *unique* risks, then that State should be allowed to propose an alternative route through the State that would alleviate such unique risks. In this regard, we strongly support the requirement that the Department of Energy work closely with each State to ensure that any such unique risks are mitigated to the extent possible.

Question 2. As a regulator, do you think Congress or the EPA is more qualified to set radiation protection standards that protect the public health?

Response. I think this question generally mischaracterizes the issue. The U.S. Congress properly recognizes that it is the Nuclear Regulatory Commission's primary responsibility to protect public health and safety concerning nuclear materials. Section 205(d)(1) of H.R. 45 would create a default ceiling of 100 millirems for exposure for the general population in the vicinity of the Yucca Mountain site, while giving the Commission the authority to lower that ceiling through a traditional rulemaking process "in consultation with the Administrator of the Environmental Protection Agency." In other words, H.R. 45 provides Congressional guidance on radiation standards while maintaining the customary roles and processes of the Nuclear Regulatory Commission and the Environmental Protection Agency. We wholly support these provisions in H.R. 45.

CONCLUDING COMMENTS

In closing, I would like to reiterate our basic position concerning the Federal nuclear waste management and disposal program. First, spent nuclear fuel and high-level nuclear waste must be moved from commercial reactor sites at 72 locations around the country to a single centralized interim storage facility or final repository as soon as possible; and, second, we must protect and preserve the nation's electricity consumers money by ensuring that it is properly budgeted and appropriated only for the purposes of siting and building a centralized interim storage facility and a final repository, and for transporting spent nuclear fuel and high-level nuclear waste to these facilities. Anything less will cause further delays in the Federal program and will subject the nation's electricity consumers to tens of billions of dollars in new and additional costs.

WISCONSIN ELECTRIC POWER COMPANY
MILWAUKEE, WI
March 1, 1999

The Honorable JOE BARTON
Chairman
Subcommittee on Energy and Power
Room 2125
Rayburn House Office Building
Washington, DC 20515-6115

Dear CHAIRMAN BARTON: Thank you again for the opportunity to appear before the Subcommittee to present my views on H.R. 45, the Nuclear Waste Policy Act of 1999. In response to your letter of February 19, 1999, I have attached answers to the additional questions posed by you and Mr. Norwood.

If there is any additional assistance I can provide to the Subcommittee, please do not hesitate to contact me.

Sincerely,

RICHARD A. ABDOO
Chairman of the Board & Chief Executive Officer

Attachment

ANSWERS TO FOLLOW UP QUESTION TO MR. RICHARD ABDOO

Question 1. Please elaborate on your contingency plans if you cannot begin shipping waste in 2003, either by having DOE provide on-site storage or by shipping spent fuel to some other offsite storage facility.

Answer 1. Wisconsin Electric is pursuing several avenues to provide storage for spent fuel in the event that the Federal Government is unable to accept delivery at some off-site storage facility. First, we are continuing to pursue contract performance by the Department of Energy under our existing Standard Contract with the Department. In this regard, we are very interested in Secretary Richardson's recent remarks offering to discuss options with utilities to explore on-site storage. Second, we plan to make application to the Public Service Commission of Wisconsin to expand on-site dry storage capacity beyond the twelve casks currently authorized for the facility. As I stated in my testimony, this could be a lengthy regulatory and legal process based on our past experience with the state approval process. Third, we are investigating shipment of spent fuel to a U.S. commercially licensed centralized storage facility in preparation for acceptance by DOE. Fourth, we will determine the feasibility of shipping spent fuel to a non-U.S. licensed storage and/or fuel conditioning facility.

Question 2. Please provide more details on your ideas on allowing the utilities to trade places in the shipment queue. Would legislation be necessary to allow such trading?

Answer 2. The current Standard Contract provisions allow for trading positions in the queue but there is no guidance on how this is accomplished or how to arrange compensation to the affected parties. Two items should be incorporated into future legislation in order to clarify trading. Utilities should be able to negotiate trades in the queue with any cost savings resulting from consolidating acceptance campaigns being provided to the power plant owners that move to a later shipment date. Also, civilian power plant owners of operating plants that are in danger of shutting down because of a loss of storage space should be able to preempt non-civilian spent fuel shipments in order to keep operating.

Question 3 (from Mr. Norwood). You indicated you are exploring other opportunities for interim storage of your company's spent fuel in light of the fact you may

run out of onsite storage space. Please identify the sites you are currently considering for interim storage spent fuel.

Answer 3. As indicated in the answer to question 1, we will consider a number of options including storage at any facility that may be licensed by 2003. Wisconsin Electric is currently not active in licensing any particular site.

NUCLEAR ENERGY INSTITUTE
March 9, 1999

The Honorable JOHN D. DINGELL
Ranking Minority Member
Committee on Commerce
2125 Rayburn House Office Building
Washington, DC 20515-6115

DEAR MR. DINGELL: Enclosed please find the response to your questions included in your February 17, 1999 letter. We would be happy to provide any additional information you may need during legislative consideration on H.R. 45.

Thank you for your continued assistance and dedication to resolve the nuclear waste issue.

Sincerely,

JOE F. COLVIN
President and Chief Executive Officer

cc: The Honorable Tom Bliley, Chairman
Committee on Commerce

The Honorable Joe Barton, Chairman
Subcommittee on Energy and Power

The Honorable Ralph Hall, Ranking Member
Subcommittee on Energy and Power

RESPONSE TO REP. DINGELL LETTER OF FEBRUARY 17, 1999

Various utilities, and many states and state agencies, undertook litigation against DOE beginning in 1994, and are continuing to pursue that litigation for a number of reasons. Among those reasons were that DOE had taken the position that it had no authority to take used nuclear fuel prior to an NWPA repository being in operation, and therefore no statutory or contractual responsibility to utilities until that time. In addition, the prospects of DOE completing the repository program on a timely basis were, at best, questionable, given DOE's performance to that time and the unlikely prospect that DOE intended to take any actions to meet the January 31, 1998, NWPA mandated deadline. Finally, utilities, their customers, and state officials were growing increasingly concerned that the one mill/kwh fees were accumulating in the Nuclear Waste Fund but that a date certain when used nuclear fuel would begin to be taken by DOE was illusory.

Although the decision on whether to initiate further litigation, proceed with litigation, or settle current litigation, is a decision that will be made by each utility based on its assessment of what is in its shareholders', and its customers' best interests, passage of H.R. 45 is not likely to be seen to obviate the need for DOE to implement actions consistent with its responsibilities under the law. In fact, two different courts of competent jurisdiction have found that DOE has not complied with the current NWPA's provisions. It is therefore likely that at least some utilities may continue to rely on the courts to enforce DOE's obligations under the law until such time as DOE satisfies its legal responsibilities.

Further, H.R. 45 sets in place a legal framework to progressively reform the current program to better ensure that the nation's problem with used nuclear fuel and governmental high level wastes will be competently managed, but it does not provide redress for the damages that many utilities have already suffered, and will continue to suffer in the foreseeable future.

However, the benefits to the nation of the passage of H.R. 45 will be substantial and it should be enacted even though it does not remedy all of the current problems that utilities face because of DOE's failure to satisfy its legal responsibilities.

Specifically, in response to your questions:

Question. Does the industry intend H.R. 45 to be an alternative to continued litigation or would enactment of H.R. 45 be in addition to litigation?

Answer. We anticipate that enactment of legislation provides a workable system to move fuel in a timely fashion may be seen by some utilities (including some currently in litigation) as obviating a need to seek through litigation a mandate for specific performance by DOE. The issue of compensation for damages caused by DOE's

nonperformance for the time period between required performance and actual performance, however, still remains. If DOE actually performs on a reasonably expedited time schedule, the industry-wide damages should be considerably smaller than if DOE continues on its present pace. Accordingly, we believe litigation will continue to serve a necessary role in addition to the needed reform legislation.

Question. Would industry be willing to forgo claims arising under existing law in exchange for the benefits provided by H.R. 45?

Answer. Depending on the nature of the changes included in H.R. 45, we believe that utilities may be willing to hold their lawsuits in abeyance with pending DOE's performance under their contracts. Although NEI cannot speak for individual utilities on contractual matters, all companies support H.R. 45 and we believe that companies with one-time fee obligations will be willing to make such payments pursuant to legislative requirements in order to secure passage of H.R. 45. However, unilateral repudiation by Congress of utilities' existing rights could expose the government to *Winstar-type* damage claims.

A better solution would be to enact a budget reform provision that allowed access to the Nuclear Waste Fund without requiring subsequent payment of one-time fees to offset pay-go requirements. Such an approach would eliminate the need for advanced payment of one-time fees and any Tucker Act issues. While the above suggestion is the most efficient way to resolve Tucker Act concerns, the industry believes there are other methods to resolve this issue and is currently exploring these alternatives.

NUCLEAR WASTE STRATEGY COALITION
March 4, 1999

The Honorable JOE BARTON
Chairman
Subcommittee on Energy and Power
U.S. House of Representatives
Room 2125, Rayburn House Office Building
Washington, D.C. 20515-6115

Re: Answers to follow up questions for the record on the Nuclear Waste Policy Act of 1999 (H.R. 45).

CHAIRMAN BARTON: Thank you for this opportunity to answer follow-up questions for the record regarding the Nuclear Waste Policy Act of 1999 (H.R. 45). Attached are answers to the questions you forwarded from Representative Edward J. Markey.

I appreciate this opportunity to elaborate on my testimony presented on February 10, 1999, before the House Commerce Subcommittee on Energy and Power. Please let me know if I can be of further assistance in this important debate.

Sincerely,

LEROY KOPPENDRAYER, *Commissioner*
Minnesota Public Utilities Commission and
Nuclear Waste Strategy Coalition Executive Committee member.

RESPONSE OF COMMISSIONER KOPPENDRAYER

Question 1. As a state official, do you support H.R. 45's provisions preempting all state and local requirements that present any "obstacle" to carrying out the Nuclear Waste Policy Act or Atomic Energy Act?

Response to Question 1. As a state official, I make decisions in compliance with, and in reliance on, federal law. The Nuclear Waste Policy Act (NWPA) of 1982 promised state and local political subdivisions that the federal government would provide safe centralized temporary storage and permanent disposal of high-level nuclear waste from power plants beginning by January 31, 1998. The NWPA followed decades of such assurances from the federal government dating back to the Atoms for Peace program under the Eisenhower Administration. Every state government in the nation acted in reliance on these promises. States are right to expect these promises will be kept. For a single state, or political subdivision, to unilaterally switch the bargain that every state has relied on for decades of decision making would be fundamentally unjust.

H.R. 45 contains a single provision specifying that an individual state or political subdivision cannot overturn a national decision to centrally store and permanently dispose of high-level radioactive waste. As proposed, that provision states:

> ...Any requirement of a State or political subdivision of a State is preempted if—

(1) complying with such requirement and a requirement of this Act is impossible; or

(2) such requirement, as applied or enforced, is an obstacle to accomplishing or carrying out this Act or a regulation under this Act.

Source: Title V, Section 501 of the Nuclear Waste Policy Act of 1999 (H.R. 45).

Given that: 1) H.R. 45 recognizes the U.S. Nuclear Regulatory Commission already has primary responsibility to ensure consistent, nationwide protection of the public health and safety concerning nuclear materials; 2) the American public and state governments have already accumulated 45 years of experience interacting with the federal government under the Atomic Energy Act (AEA) of 1954; and 3) that state governments and local political subdivisions have relied on the AEA and NWPA of 1982 promises in the performance of their state duties, the above provision balances the public interest.

Question 2. As a regulator, do you think Congress or the EPA is more qualified to set radiation protection standards that protect public health?

Response to Question 2. In its March, 1996 report "Disposal and Storage of Spent Nuclear Fuel—Finding the Right Balance" the non-partisan Nuclear Waste Technical Review Board (NMRB) reaffirmed earlier studies that it is equally safe to provide centralized waste storage and to transport waste to that site as it is to store waste at plant sites.

"[H]ealth, safety, and environmental risks associated with . . . centralized storage of spent fuel are all very low. Thus, *differences in risk between at-reactor and centralized storage are not great enough to provide a decided advantage to either storage option*." (See NWTRB report of March, 1996, page 20.) [Emphasis added.]

"Numerous analyses have been performed in recent years concerning transportation risks associated with shipping spent fuel . . . [T]he results of these analyses (MRS 1989, Battelle 1989, NRC 1987) all show very low levels of risk under both normal and accident conditions . . . In the 1980's 100 to 200 such shipments were typically made each year . . . The safety record has been very good and corroborates the low risks estimated analytically. In fact, *during the decades that spent fuel has been shipped, no accident has caused a radioactive release*." (See NWTRB report of March, 1996, page 19.) [Emphasis added.]

This reaffirms earlier findings of the blue-ribbon panel of experts appointed by Congress to the Monitored Retrievable Storage Review Commission. In its 1989 report "Nuclear Waste: Is There a Need For Federal Interim Storage?" the Commission found central storage and transportation to that site to offer no greater occupational, public, or environmental risks. (See NWTRB report of March, 1996, pages 45 and 52.)

The Need for Immediate Action

With regard to the need for immediate action by the 106th Congress, further delay will result in: 1) stranding tons of high-level radioactive waste across America for an indefinite period of time; 2) building 73 nuclear waste temporary storage facilities on the shores of lakes, rivers, and oceans in 34 states at sites never intended for long term nuclear waste storage; and 3) tens of billions of dollars in new and additional costs to delay centralized nuclear waste storage and permanent disposal that was supposed to have started over one year ago. Estimated in previous congressional testimony to be in the range of $40 billion to $80 billion or more, these costs of delay will be paid from the U.S. Treasury's Judgments Fund as damages under order of the U.S. Court of Claims.

In addition, choosing to continue the status quo accepts the on-going bilking of consumer payments into the federal Nuclear Waste Fund at the rate of $70,000 per hour for nuclear waste disposal services that aren't being provided!

It would be unconscionable to choose further delay, and the resulting consequences, over an alternative that would protect the public health, safety and the environment, and avoid squandering tens of billions of dollars.

UNITED STATES NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555
March 11, 1999

The Honorable JOE BARTON, Chairman
Subcommittee on Energy and Power
Committee on Commerce
United States House of Representatives
Washington, D.C. 20515-6115

DEAR MR. CHAIRMAN: Thank you for the opportunity to appear before your Subcommittee on February 10, 1999, to discuss the important issues regarding H.R. 45, the Nuclear Waste Policy Act of 1999. The passage of H.R. 45 would affect the mission of the Nuclear Regulatory Commission, and we appreciate the opportunity to provide input as you develop this bill.

I am enclosing the NRC responses to the post-hearing questions that were transmitted by your letter of February 19, 1999. Please contact me if I can be of further assistance.

Sincerely,

SHIRLEY ANN JACKSON
Chairman

Enclosure: As stated
cc: The Honorable Ralph Hall

RESPONSES TO QUESTIONS

Question 1. NRC indicated in its statement that the 25 millirem all-pathways standard, as promulgated by NRC in 10 CFR Part 63, is consistent with other national and international recommendations for radiation that have been adopted by the international community. Please provide a brief survey of the standards in use by the international community for the disposal of spent fuel and high-level waste.

Answer. The International Commission on Radiological Protection (ICRP) is the international body that develops recommendations for radiation protection standards. Worldwide, ICRP recommendations provide the basis for most national regulatory standards. In the U.S., the national equivalent to the ICRP is the Congressionally chartered National Council on Radiation Protection and Measurements (NCRP).

Both ICRP and NCRP recommend an individual dose limit for members of the public of 100 millirem per year (mrem/y). In addition to this limit, ICRP and NCRP recommend that persons using radiation sources maintain exposures of the public to radiation from the sources As Low As Reasonably Achievable (ALARA).

To assure that exposures to more than one source of radiation do not lead to a total annual dose exceeding 100 mrem, ICRP and NCRP recommend doses from individual sources be limited to a fraction of the 100 mrem/y standard. For this purpose, ICRP recommends a value of 30 mrem/y and NCRP recommends a value of 25 mrem/y. In both cases, the recommended value is an all-pathways standard.

NRC's proposed all-pathways standard of 25 mrem/y and ALARA is therefore consistent with both ICRP and NCRP recommendations for a standard for an individual source of radiation.

The following is a selected compilation of dose standards in use by the international community.

Selected compilation of dose standards in use by the international community from the references cited

Country	Standard
Finland[1]	0.1 mSv/yr (10 mrem/yr)
Switzerland[1]	0.1 mSv/yr (10 mrem/yr) (likely events) and 1×10^{-6} risk limit for unlikely events; additionally can modify dose limit based on size of the critical group
France[1]	0.25 mSv/yr (25 mrem/yr)
Canada[2]	Maximum individual risk $\leq10^{-6}$/yr (equivalent to 2 mrem/yr)
Germany[2]	Individual dose <0.3 mSv/yr (30 mrem/yr) for all reasonable scenarios
United Kingdom[2]	Maximum individual risk objective 10^{-5}/yr (equivalent to 20 mrem/yr)
Nuclear Energy Agency[2]	Maximum individual risk $\leq10^{-5}$/yr (approx. equivalent to 20 mrem/yr)

Selected compilation of dose standards in use by the international community from the references cited—Continued

Country	Standard
International Commission on Radiological Protection[2]	Individual dose 1 mSv/yr (100 mrem/yr) (equivalent risk $\leq 5\times10^{-5}$/y). For multiple sources recommend lesser value by optimization (e.g., 0.3 mSv/y; 30 mrem/yr)

[1] From BIOMOVS II Technical Report No. 6 (1996)
[2] From IAEA TECDOC-853 (December, 1995)

Question 2. How much of the difference between the EPA and NRC standards derives from different methods of apportioning the total radiation dose to the repository? In other words, are the NRC and EPA starting from the same 100 millirem standard for total allowable dose and reaching a different answer by attributing a different percentage of that total to the repository?

Answer. Although both the NRC and EPA accept the same 100 millirem annual standard (mrem/y) for total allowable public dose from Atomic Energy Act materials, the difference between EPA (15 millirem) and NRC standards (25 millirem) for HLW disposal dose is not derived from different methods of apportionment. The difference results from the differing interpretations by the agencies of the impact of newer dose methodology on the calculation of comparable levels of protection provided by previous radiation protection standards.

The following outline of the NRC and the EPA approaches to developing the standard provides clarification:

The NRC approach to developing the standard:

The basic NRC and EPA radiation protection standard for members of the public is 100 m rem/y.

According to the International Commission on Radiological Protection (ICRP) and the National Council on Radiation Protection and Measurements (NCRP), to assume that exposures to more than one source of radiation will not lead to a total annual dose exceeding 100 mrem/y, doses from individual sources should be limited to a fraction of the 100 mrem/y limit. For this purpose, the ICRP recommends a value of 30 mrem/y while the NCRP recommends a value of 25 mrem/y.

The NRC uses 25 mrem/y all pathway value for this purpose which is equivalent to a lifetime fatal cancer risk of 4×10^{-4} based on 30 years exposure. This is consistent with previously established NRC standards, (e.g., license termination and low-level radioactive waste disposal).

Additionally, the NRC, following international and national radiation protection recommendations, requires licensees to maintain radiation exposures to be As Low As Reasonably Achievable (ALARA).

In practice, under NRC regulation, application of ALARA has resulted in exposures of members of the public to a small fraction of the application limits.

The EPA approach to developing the standard:

The starting point for the EPA limits is different and is derived from a goal of maintaining a lifetime risk of fatal cancer from environmental sources to within a range of 10^{-4} to 10^{-6}.

15 mrem/y carries a lifetime fatal cancer risk of 2×10^{-4} based on 30 years exposure.

The EPA view is that this is acceptably close to (although not within) their risk target.

Significance of the difference:

The uncertainties of predicting health effects at these very low levekof radiation exposure are very large; it is assumed that radiation health effects occur at low levels.

In the United States, about 1 in 5 persons will die from cancer, a lifetime risk of 20%.

In comparison, the lifetime fatal cancer risk associated with the difference between the NRC and the EPA standard, 10 mrem/y, is 2×10^{-4}.

Annual exposures to background radiation average about 300 mrem/y but can vary from 100 to 1,000 mrem/y depending upon location and naturally occurring radon levels.

Background/Additional Information.

The ICRP and the NCRP both, in publication 60 and Report No. 116, respectively, arrive at 100 millirem per year (mrem/y) as the acceptable individual dose from all

man-made sources of radiation excluding medical. In 1991, NRC modified 10 CFR 20 to adopt the 100 mrem/y public dose limit. Current EPA standards promulgated by EPA in 1960 and 1961 limit doses to members of the public to 500 mrem/y. In a draft 1994 revision to these standards, EPA recommended a 100 mrem/y limit but thus far has not completed the process of revising its standards.

Question 3. In the past, NRC has testified onsite storage is safe, but centralized interim storage is even safer. Is that still the NRC's position?

Answer. The NRC believes that both centralized interim storage and at-reactor storage would protect public health and safety, however, the NRC also believes that a centralized facility would offer a number of benefits and resources savings; for example:

Use of a central storage facility would focus our oversight activities for spent fuel storage at one location versus approximately 75 sites. Licensing and inspection resources would be saved in regulation of one central interim storage facility instead of multiple independent spent fuel storage facilities.

Relocation of spent fuel at one site would permit the sites with shutdown reactors to be decommissioned and released for other uses.

Central interim storage would use only dry casks which are passive and less complex than the active systems used in reactor spent fuel pools, which depend on a number of pool support systems including cooling water, electrical power, and instrumentation.

Regarding on-site storage, the NRC considers both wet and dry storage to be safe technologies, but we view dry storage as the preferred method for supplementary storage of spent fuel at operating plants.

A central interim storage facility would require transportation of spent fuel in NRC certified casks, but the Commission believes, based on both experience with previous spent fuel transport and analysis of the risks of such a transportation campaign, that such transportation would pose minimal health and safety risks.

Question 4. In her testimony, Ms. Claybrook of Public Citizen declares "centralized interim storage . . . would increase the risks to public health and safety." Do you agree with that statement?

Answer. No, there would be no incremental increase in risk due to storing spent fuel at a central location versus storing spent fuel at each reactor site.

The risks to send spent fuel to centralized interim storage are not necessarily greater than they would be in shipping the same fuel to a permanent repository.

There is always some risk involved with shipping hazardous (and non-hazardous) materials as evidenced by historical accident rates. However, the staff has no reason to believe that the extremely low accident rates observed for spent fuel shipments would be significantly different than those for other hazardous goods shipments.

Studies conducted for the NRC, such as the Modal Study (Shipping Container Response to Severe Highway and Railway Accident Conditions, 1988) and NUREG-0170 (Final Environmental Impact Statement on the Transportation of Radioactive Material by Air and Other Modes, 1977) show that the radiological risk of shipping spent fuel is very low. The NRC is in the final stages of revalidating NUREG-01 70 to consider new shipping cask types, health effects models, and routing parameters. Initial results of this effort, which will be completed in late 1999, appear to reconfirm that the radiological risk is minimal.

In addition, NRC published a proposed rule and indicates the availability of a draft environmental impact statement in the February 26, 1999, edition of the *Federal Register*. The amendment to 10 CFR 51 would eliminate the need for individual license renewal applicants to address the environmental impacts associated with the transport of spent fuel in the vicinity of Yucca Mountain based on the analysis contained in the Generic Environmental Impact Statement (GEIS). The rule would add a requirement that each license renewal applicant address the impact of transportation of spent fuel in the vicinity of the plant during the term of license renewal. The proposed rule and GEIS are available for public comment.

Background/Additional Information.

The NRC's safety record for spent fuel shipments is based on approximately 1300 commercial shipments transported in the United States from 1979 through 1997. A total of 356 metric tons were transported in 1181 highway shipments, while 1097 metric tons were carried in 153 railway shipments. The greatest amount commercially transported in one year was 193.4 metric tons in 1985. During that period, the distance traveled by all commercial spent fuel shipments totaled 850,000 miles.

According to statistics compiled from NRC-licensed waste transporters, eight transportation accidents involving spent fuel casks have occurred from 1971 through 1997, none of which released radioactive material. That accident rate appears to be generally consistent with the probabilities predicted in safety studies (Final Envi-

ronmental Statement on the Transportation of Radioactive Material by Air and Other Modes, NUREG-0170, December 1977). In four of those accidents, the spent fuel casks being transported were empty and were undamaged. The other four accidents involved loaded casks and, again, none of these accidents involved the release of radioactive materials:

A December 1971 accident, in which a truck left the road and threw off its spent fuel cask, which sumered some damage to the cask surface;

An incident in February 1978, in which a truck trailer carrying a spent fuel cask buckled under its weight, but the cask was undamaged;

A December 1983 accident, when a spent-fuel truck tractor separated from its axles, without damaging the cask; and

An accident in March 1987, when a train carrying two casks of Three Mile Island core debris collided with a car, causing no cask damage.

The U.S. commercial spent fuel shipped from 1971 to 1997 represents about 3 percent of the 40,000 metric tons that may eventually require transportation to a central interim storage facility as provided for under the proposed H.R. 45.

NUREG-0725, "Public Information Circular for Shipments of Irradiated Reactor Fuels" (Revision 13, October 1998), provides publicly available shipment information.

Question 5. Will the NRC have sufficient funds in the next fiscal year to execute its responsibilities with respect to the Yucca Mountain project and to prepare for the licensing process?

Answer. Yes, if the Congress appropriates the resources requested in the President's budget. The Commission has requested adequate funding for FY 2000 ($19.15 million) to execute its responsibilities with respect to the Yucca Mountain project and to prepare for the licensing process. Examples of FY 2000 activities include resolving specific key technical issues and subissues that are important to the performance of a high-level waste repository during the prelicensing period and refining the Yucca Mountain Review Plan that will implement the site-specific, risk-informed, and performance-based regulations for a proposed repository at Yucca Mountain. As we move closer to the receipt of the license application in FY 2002, we project a small increase in funding requirements to ensure that NRC will be adequately staffed for its review.

The NRC has not currently budgeted for the licensing review and regulation of the proposed central interim storage facility outlined in H.R. 45 and would need a supplemental appropriation from the Nuclear Waste Fund to carry out those additional responsibilities.

Question 6. I understand the difference of professional opinion between the EPA and NRC over radiation standards affects other areas in addition to the Yucca Mountain repository. What other areas under NRC jurisdiction are affected by this question, and what is the status regarding standards and guidelines for acceptable radiation exposures in these areas?

Answer. The NRC Low-Level Waste (LLW) and Decommissioning programs also are affected by the differences between the EPA and NRC over radiation standards.

Under existing law, the NRC is obligated to implement and enforce generally applicable environmental standards promulgated by the EPA in accordance with the Atomic Energy Act.

In the LLW program, similar and fundamental differences exist involving the acceptable level of risk and the need for separate pathway standards in addition to an all pathways standard. These dill erences were raised in 1995 in NRC comments on the EPA preproposal draft of environmental standards for the management, storage, and disposal of LLW (40 CFR 193). These comments opposed the EPA rulemaking as unnecessary, consistent with the State's comments but the NRC offered to revise its guidance concerning groundwater monitoring if the EPA would agree to exclude NRC licensees from its rule. After reviewing the comments received from NRC, the Department of Energy (DOE), the Office of Management and Budget (OMB), and States, EPA on June 8, 1995, announced that it would not proceed with the development of the Low-Level Radioactive Waste Standards (40 CFR 193) for facilities licensed by NRC or Agreement States, including low-level radioactive waste disposal facilities, processing facilities, and storage facilities. Since that time, no additional action has been taken by the EPA on this rulemaking with regards to either NRC licensees. The NRC standards for disposal of low-level radioactive waste are contained in 10 CFR Part 61 and are supported by a series of regulatory guidance related to siting, construction, operation, and closure of a LLW disposal facility. The NRC Agreement States are implementing compatible requirements.

The NRC published a final rule establishing radiological criteria for decommissioning in July 1997 that was accompanied by a Generic Environmental Impact Statement (GEIS). This rule established 25 millirem per year (mrem/y) from all po-

tential exposure pathways at a licensed site as the acceptable criterion for release of licensed sites for unrestricted use. This dose limit is coupled with the provision that the dose from residual radioactivity be As Low As is Reasonably Achievable (ALARA). NRC's GEIS, which analyzes the costs associated with applying Maximum Contaminant Levels (MCLs), indicates that reducing groundwater contamination to these MCLs could be extraordinarily expensive in some cases. For example, it would cost approximately $23 billion per threatened fatality averted if the MCL for strontium-90 is applied (MCL corresponds to 0.07 mrem/y). Moreover, at some sites, there could be a "negative" health impact to safety due to transportation accidents. In July 1998, the NRC published regulatory guidance for a two year period of interim use and comment. The NRC is soliciting comments on this guidance through a series of public workshops and the NRC's web site. The EPA stated that the NRC rule is not protective of the public health and the environment and stated that 15 mrem/y from all pathways, with separate limits established for groundwater, is necessary. The EPA limits on groundwater would be the MCLs specified in 40 CFR 141, National Primary Drinking Water Regulations.These requirements were contained in the EPA draft proposed cleanup rule, which was withdrawn by the EPA on December 19, 1996, in response to issues raised by the NRC, DOE, States, and other interested parties.

The Commission's final rule is based on considerations of risk, radiation protection principles, national and international standards, and costs compared to associated benefits of cleanup. In issuing the final rule, we concluded that it not only protects the public health and safety, but also establishes a framework to address the limited number of difficult cases which would otherwise require case-by-case exemptions. We believe this approach ensures adequate protection of the public health and safety and the environment, does not impose an unnecessary regulatory burden, and is based on sound policy.

The EPA has not established a regulatory standard for this area under the Atomic Energy Act. However, EPA has stated that it would apply its guidance for cleanup of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites. The EPA approach results in the imposition of the CERCLA risk range on radionuclides without the informed and open discussions that would be part of the rulemaking process to establish such radiation protections standards - a process which NRC has completed.

Question 7. Would licensing an interim storage facility pose great challenges to NRC? Have you licensed similar facilities in the past? If so, how long has it taken to license similar facilities?

Answer. No, the licensing of an interim storage facility would not pose any great challenges to the NRC provided sufficient resources were available to the NRC.

The NRC has licensed dry independent spent fuel storage installations located at reactor sites. The time-frames associated with licensing a dry independent spent fuel storage installation have varied considerably based upon: the unique licensing considerations of the applicant; site characteristics; the storage vendor/technology chosen; staiff familiarity with the chosen vendor/technology (a previously reviewed storage cask or topical report); and the need for an environmental assessment or an environmental impact statement. For the previous reviews, the time-frame ranged from approximately 1.5 years to more than 7 years. The staff estimates that it should normally take approximately 30 to 40 months to license a dry at-reactor independent spent fuel storage installation.

Although the NRC has not licensed a central interim storage facility, staff is currently reviewing the Private Fuel Storage, L.L.C. application for an away-from-reactor independent spent fuel storage installation to be located on a site leased at the Skull Valley Band of Goshute Indian Reservation in Utah. The staff received the application in June 1997 and expects to complete the safety review by October 1999 and the environmental review by September 2000. The staff anticipates that the contested hearing proceedings will be completed around October 2001. The license will not be issued until after the hearing is completed.

The DOE submitted to the NRC a topical report for a non-site-specific central interim storage facility in May 1997. The staff, utilizing the Center for Nuclear Waste Regulatory Analyses, is reviewing the Department's generic approach to central interim storage. The staff expects to complete its review by October 1999. The NRC's Assessment Report will provide an early indication of the acceptability and feasibility of the DOE approach to central interim storage, and it will provide constructive experience and feedback to the DOE prior to submitting a site-specif ic application.

Question 8. The WIPP site has a Congressionally-mandated radiation standard of 15 millirems with a separate groundwater standard. Why is NRC reportedly indicating that the Yucca Mountain geologic repository does not need to meet the same

radiation protection standards as those applied by EPA at the WIPP facility? Is contaminated groundwater a health and safety issue at the WIPP facility?

Answer. The EPA often claims that the WIPP standards of 15 millirem per year (mrem/y) with a separate groundwater standard is congressionally mandated. However as documented in succeeding paragraphs, NRC does not believe that either the radiation standard for WIPP (i.e., 15 millirem/y) or a separate groundwater protection standard has been specifically mandated by Congress as EPA claims. Further, NRC believes that the separate groundwater protection requirements in 40 CFR Part 191 are unnecessary because individual protection criteria, which take into account all pathways of potential exposure, are sufficiently protective of the groundwater pathway. Individual protection criteria also represent a more uniform and comprehensive approach to protecting public health and safety. The NRC proposed standards in 10 CFR Part 63, if implemented, will ensure that groundwater will remain a resource for the citizens of Nevada and that its use will not pose an unacceptable risk to their health. Finally, application of groundwater protection standards based on the drinking water standards is not necessary at the WIPP facility because any potential releases at WIPP, were they to occur, are expected to be confined to highly saline groundwater (i.e., not a drinking water source).

In June 1997, the NRC commented on the application of the EPA's generic standards at WIPP as they relate to disposal of high-level wastes at Yucca Mountain. In that letter, the NRC summarized extensive NRC comments made during the development of the EPA standards including referencing the fact that the technical community had raised significant concerns regarding the scientific basis for, and appropriateness of, the 1985 EPA standards. EPA chose, in its 1993 rulemaking, not to accept comments, including those from NRC, on those portions of the standards that were legislatively reinstated.

Regarding the "Congressionally-mandated" radiation standard of 15 millirems, the Waste Isolation Pilot Plant Land Withdrawal Act (WIPP LWA) reinstated those aspects of the EPA generic standards not specifically found problematic by the First Circuit Court in NRDC v. EPA. EPA believes that the WIPP LWA "arguably" represents an endorsement by Congress of the policy decisions (including risk levels they represent) that underlie the numerical standards in the version of 40 CFR 191 issued in 1985. The NRC disagrees with this view. In revising the 1985 standards, the EPA notes that in those standards, the dose limits were 25 mrem/y to the whole body and 75 mrem/y, to any critical organ. Subsequent to the WIPP LWA, the EPA revised these standards to reflect current practices in measuring and assessing radiation exposures by incorporating an annual 15 mrem effective dose standard. The EPA chose 15 mrem because they believe it represents an equivalent level of risk to that identified by the EPA in the older standards. However, the NRC considers 25 mrem/y total effective dose equivalent (TEDE) as the appropriate dose limit within the range of potential doses represented by the older (1985) dose limits.

The NRC believes that 25 mrem/y is the appropriate dose limit for the geologic repository for the following reasons. The International Commission on Radiological Protection (ICRP) and the National Council on Radiation Protection and Measurements (NCRP) use similar approaches in setting an acceptable risk level. ICRP and NCRP are organizations which are chartered, and internationally recognized, for the development of basic radiation protection standards throughout the world and in the U.S. Their findings are contained in ICRP Publication 60 and in NCRP Report No. 116, respectively. Based on their review of health and societal issues, both organizations (while acknowledging the difficulty of setting standards for an "acceptable" public dose limit) arrive at 100 mrem/y as a level that can be said to be acceptable. Current generally applicable Federal Guidance for protection of the public, issued by the EPA in 1960 and 1961, limits doses to members of the public to 500 mrem/y. In a draft 1994 revision to this guidance, the EPA recommended a limit of 100 mrem/y, consistent with international and national recommendations, and NRC regulations, coupled with further constraints to apportion this total dose limit to specific sources of exposure. Thus far, the EPA has not completed the process of revising its Federal Guidance. The National Academy of Sciences reported that various countries allocate high-level waste disposal between 10 and 30 mrem per year as the dose limit. ICRP emphasizes that these partitions of the individual dose standard for individual activities such as waste disposal, are not limits, but rather constraints, above which doses would not necessarily be considered unacceptable. The NRC believes an all-pathway 25 mrem/y dose limit is consistent with international practices, other NRC regulated activities, and protective of public health and safety.

Regarding a separate groundwater protection standard, the NRC continues to believe that the separate groundwater protection requirements in 40 CFR Part 191 are unnecessary. Specifically, the NRC believes that individual protection criteria, which take into account all pathways, are sufficiently protective of the groundwater

pathway, and represent a more uniform and comprehensive approach to protecting public health and safety. Further, the use of the existing Maximum Contaminant Levels (MCLS) for protection of groundwater in HLW disposal is fundamentally incompatible with the technical basis the EPA employed to derive the HLW standards, and is a continuation of the EPA practice of applying the MCLs found in 40 CFR 141 to other activities without adequate justification or cost benefit analysis.

It is important to note that any potential releases at WIPP, were they to occur, are expected to be confined to highly saline groundwater that is not subject to EPA's MCLs in groundwater. Thus, the EPA has never applied its groundwater protection requirements to a high-level waste site where there is suitable groundwater. Outside of salt formations, it is not clear that 40 CFR Part 191's groundwater provisions can be achieved. The standards applicable to WIPP and the proposed NRC rule (10 CFR Part 63) approved by the Commission for a Yucca Mountain site, adopt effectively similar strategies for protecting public health and safety because of the absence of groundwater issues at the WIPP site. In practice, both standards lay out an all-pathways approach. The approach taken in 10 CFR Part 63 is to rely on an all-pathways individual dose limit to protect the public health and the environment (including groundwater that might be used by the citizens of Nevada). This ensures that no single pathway of exposure will result in an unacceptable risk to the public health. Therefore, the groundwater will remain a resource for the citizens of Nevada and its use will not pose an unacceptable risk to their health.

Question 9. EPA, in its testimony, identified several concerns with H.R. 45 such as the 100 millirems per year standard being too high, lack of stylized human intrusion scenario, etc. Does NRC's proposed rule address these concerns?

Answer. Yes, the NRC proposed requirements at 10 CFR Part 63 address, to varying degrees, many of EPA's stated concerns. Specifically, the EPA stated that the 100 millirem per year (m rem/y) standard is not suff iciently protective of public health and safety and is too high compared to other standards. The NRC has proposed an individual protection standard of 25 mrem/y to the average member of the critical group to account for the fact that some members of the critical group may be exposed to more than one source of non-medical, man-made radiation. The EPA also states that H.R. 45 is not consistent with international high-level waste standards. The NRC proposed limit is consistent with national and international radiation protection standards which recommend that individual dose from waste disposal facilities not exceed 30 mrem/y. This is a conservative constraint within the 100 mrem/y public dose limit, and members of the public are likely to comment during the rulemaking that a larger fraction is appropriate to the Yucca Mountain site. Mr. David Joos, President and Chief Operating Officer of Consumer Energy Company, testifying on behalf of the Nuclear Energy Institute, made that point at the February 10, 1999, hearing. Others will argue for effectively a zero limit. The Commission received similar comments during its cleanup rulemaking before deciding to set the 25 mrem/y standard in its final rule issued in July 1997. The proposed Part 63 criteria incorporate the internationally-accepted concept of providing protection to the "average member of the critical group" rather than the "average person in the general vicinity" as envisioned in H.R. 45, which is less protective and which the EPA expressed concern about. Also, the proposed Part 63 criteria limit the consequences of an assumed human intrusion scenario to ensure that the public dose limit would not be exceeded in the case of such limited intrusion which is consistent with the 1995 recommendation of the National Academy of Sciences. The EPA stated that H.R. 45 is faulty in that it totally ignores the National Academy of Sciences recommendation to address human intrusion.

The proposed 10 CFR Part 63 does not address EPA's concern regarding the need for a separate dose requirement for the groundwater pathway.

The NRC has proposed an individual protection standard of 25 millirere/y total effective dose equivalent (expected dose) to the average member of the critical group based on an all pathway analysis (the only quantitative limits for judging post closure performance) and specified assumptions to be used for the reference biosphere, critical group, and evaluation of a human intrusion scenario. The proposed requirements are designed to implement a health-based, risk-informed, safety objective for long-term repository performance that is fully protective of public health and safety, and the environment, and is consistent with national and international recommendations for radiation protection.

UNITED STATES NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555
March 18, 1999

The Honorable JOE BARTON, *Chairman*
Subcommittee on Energy and Power
Committee on Commerce
United States House of Representatives
Washington, D.C. 20515-6115

DEAR MR. CHAIRMAN: On February 26, 1999, you forwarded to me a set of seven questions posed by Representative Edward Markey for the record of the February 10, 1999, Subcommittee on Energy and Power hearing on H.R. 45, the Nuclear Waste Policy Act of 1999. Enclosed are the Nuclear Regulatory Commission's responses to those questions.

Sincerely,

SHIRLEY ANN JACKSON
Chairman

Enclosures: As stated
cc: Representative Ralph M. Hall

Question 1. Does current law provide adequately for site suitability studies, licensing, transportation, and permanent underground burial of radioactive waste?

Answer. The NRC believes that the existing statutory framework is adequate for site suitability studies, licensing, transportation and permanent underground burial of radioactive waste. However, the Commission supports the improvements made by H.R. 45, as reflected in our testimony at the February 10, 1999, hearing.

Question 2. In your testimony, you suggest that to meet a standard of 100 millirem dose to the average person in the vicinity of Yucca Mountain the NRC would set a limit of 25 millirem dose to the most affected group. Why do you think that the law would not mean what it says?

Answer. To ensure that there is no confusion regarding the approach to the overall system performance objective related to H.R. 45, NRC is proposing alternative language that embraces the nationally and internationally accepted approach to establishing radiation protection standards. The NRC believes that adopting nationally and internationally recognized approaches for radiation protection standards for high-level waste disposal adds credibility to the process and will facilitate licensing of a geologic repository.

The International Commission on Radiological Protection (ICRP) and the National Council on Radiation Protection and Measurements (NCRP) are chartered, and internationally recognized, for the development of basic radiation protection standards. Their basic recommendations on radiation protection are contained in ICRP Publication 60 and in NCRP No. 116, respectively. Based on their review of health and societal issues, both organizations (while acknowledging the difficulty of setting standards for an "acceptable" public dose limit) arrive at an individual dose limit of 100 mrem per year (mrem/y) as an acceptable level. Generally, both organizations recommend apportioning this total dose limit to constrain exposure from specific man-made sources of radiation, excluding medical. In its recommendations on setting a health-based standard for the repository, the National Academy of Sciences reported that various countries allocate high-level waste disposal between 10 and 30 mrem/y as the individual dose limit. ICRP emphasizes that these partitions of the individual dose standard for individual activities, such as waste disposal, are not limits, but rather constraints, above which doses would not necessarily be considered unacceptable. ICRP recommends a constraint value in the range of 30 mrem/y.

Because dose estimates for many thousands of years into the future contain substantial uncertainty, NRC believes that to provide reasonable assurance that individual doses will not exceed 100 mrem/y to members of the public from a repository at Yucca Mountain, doses to the average member of the critical group from all exposure pathways including groundwater should be constrained to 25 mrem/y.

As noted, NRC has testified that it believes it has the flexibility to implement the overall system performance objective in H.R. 45 by using, for design and licensing purposes, an individual protection standard of 25 millirem total effective dose equivalent to the average member of the critical group based on an all pathway analysis and specified assumptions to be used for the reference biosphere, critical group, and evaluation of a human intrusion scenario. Such a standard, as proposed by the Commission in 10 CFR Part 63, includes consideration of the probability of human exposure. The NRC believes this approach is the best way to implement a health-based,

safety objective for long-term repository performance that is fully protective of public health and safety, and the environment.

Question 3. H.R. 45 does allow NRC in consultation with EPA to override the bill's standard. How would you determine if the standard in the bill provides "adequate protection of health and safety of the public"?

Answer. If the NRC cannot ensure that expected doses will not exceed 100 millirem per year (mrem/y), then NRC may need to conclude that the standard in the bill is not protective of public health and safety.

As stated in the Answer to Question 2, the NRC is proposing alternative language to H.R. 45 that embraces the nationally and internationally accepted approach to establishing radiation protection standards to ensure that there is no confusion regarding the overall system performance objective approach.

Specifically, the NRC adopted in 10 CFR Part 20 the national and internationally accepted individual dose limit of 100 mrem/y for exposure from all man-made sources of radiation excluding medical. The NRC also adopted the nationally and internationally accepted approach of applying "constraint values" and the "average member of the critical group" concept to reduce the likelihood that any one individual would be exposed in excess of the 100 mrem/y public dose limit. The NRC also requires its licensees to apply the As Low As Reasonably Achievable (ALARA) principle to further reduce exposures.

As a result of applying this approach, the NRC selected 25 mrem/y as a conservative constraint within the 100 mrem/y limit, which is consistent with existing limits for monitored retrievable storage facilities (10 CFR Part 72) and low-level waste facilities (10 CFR Part 61). It is also within the international constraints that allocate doses from high-level waste disposal to between 10 and 30 mrem/y and is comparable to the risk range recommended by the National Academy of Sciences for Yucca Mountain.

Question 4. You state in your testimony that 10,000 years is "a sufficient length of time to assess the isolation capability of the system." Models suggest that maximum exposure would occur after roughly 300,000 years. Won't you miss most of the health effects of the repository if you don't consider times at least that long?

Answer. NRC believes that dose estimates beyond 10,000 years become increasingly speculative to the extent that they are not especially valuable in regulatory decision making.

Although models can estimate higher doses at 300,000 years or greater, assumptions used in making these estimates are also highly speculative. For example, these higher dose estimates incorporate the effects of multiple glacial cycles on infiltration into the repository and flow and transport of radionuclides, while not considering, by necessity, technological changes in society and changes in living habits that would occur in response to these climate changes or mitigate the effects of such climate changes.

Nevertheless, NRC believes that analyses of repository system performance for time periods greater than 10,000 years will be performed and that, although they should not be used as a compliance measure, they will provide insight into the performance of individual barriers of a repository system. Using these analyses to evaluate the ability of individual barriers to isolate waste will build confidence in the adequacy of the entire system.

With respect to the 10,000 year regulatory compliance period used in NRC's proposed 10 CFR Part 63, both technical and policy considerations were taken into account. A 10,000 year compliance period is appropriate because it includes the period when the waste is inherently most hazardous. The inherent radiological hazard of spent fuel decreases rapidly and significantly during the initial 10,000 years primarily due to the decay of short-lived fission products. At 10,000 years after waste emplacement, the relative radiological hazard is within a factor of ten of the hazard posed by a quantity of 0.2 percent uranium ore, equivalent to typical ore grades that are mined and processed to produce the fuel used in reactors. Beyond 10,000 years, the relative hazard of the disposed waste diminishes very slowly over several hundreds of thousands of years, because decay at such late times is controlled by the activity of longer-lived radionuclides.

In addition, a 10,000 year compliance period is appropriate because it is sufficiently long, to include a wide range of conditions (e.g., seismic events, fault movement, climate variation) which will challenge the engineered and natural barriers, providing a reasonable evaluation of the robustness of the geologic repository. Additionally, the Commission expects that in conducting its performance assessment, DOE will account for the susceptibility to early failure of some fraction of the more than 7,000 emplaced canisters (e.g., attributable to manufacturing defects), and evaluate the ability of the geologic barriers to limit exposures.

A 10,000 year compliance period also is consistent with other regulations involving geologic disposal of long-lived hazardous materials, including radionuclides. EPA has already codified a 10,000 year compliance period at 40 CFR 191 applicable to the Waste Isolation Pilot Plant, a similar type of disposal system as that proposed at Yucca Mountain. A 10,000 year compliance period is also referenced in EPA guidance on no-migration petitions for facilities seeking exemption from certain land-disposal restrictions for long-lived hazardous, nonradioactive materials.

Question 5. Sec. 205(d)(2) of H.R. 45 states that "The Commission shall assume that, following repository closure, the inclusion of engineered barriers and the Secretary's post-closure actions at the Yucca Mountain site, in accordance with subsection (b)(3), shall be sufficient to...(B) prevent any increase in the exposure of individual members of the public to radiation beyond allowable limits as specified in paragraph (1)." Do you think this provision would, as suggested in EPA's testimony, require NRC to find that the radiation release standard would be met, regardless of evidence from modeling or other scientific studies?

Answer. The NRC has a different understanding than the view expressed in the EPA testimony.

The Commission agrees with the referenced portion of H.R. 45 because it provides flexibility to NRC in its determination of protection of public health and safety regarding human intrusion into the repository.

The EPA testimony suggested that the Sec. 205(d)(2) of H.R. 45 applies to meeting the release standard for *all* post-closure analyses. NRC believes this is an incorrect interpretation of H.R. 45. NRC understands Sec. 205(d)(2) of H.R. 45 to refer only to the evaluation of human intrusion.

Question 6. Are the site characterization studies of Yucca Mountain that have been conducted to date sufficient for a license application for a permanent repository at Yucca Mountain?

Answer. No. The NRC, having reviewed DOE's Viability Assessment (VA), believes that additional data and analyses are necessary to ensure that a License Application, if provided, would be complete and of high-quality.

In its VA, the DOE recognizes the need for additional site characterization and design confirmation data and analyses so that it will be able to provide a complete and high quality postclosure safety case in a license application. The DOE, also in the VA, has specifically identified those aspects of the repository system that need additional data based on the results of a total system performance assessment.

Although the NRC and the DOE are in agreement on many aspects of what is needed, we plan to provide comments to them in the near future on how much additional information is needed in particular topical areas in the NRC review of the VA and future updates of the NRC Issue Resolution Status Reports.

Question 7. Please describe the quality assurance deficiencies in the DOE site assessment program and explain how these deficiencies, if not corrected, might result in an incomplete or unacceptable license application.

Answer. Although NRC staff has reviewed and accepted the DOE Quality Assurance (QA) program, the DOE has consistently had problems implementing the program. Deficiencies identified during DOE audits and surveillance of its suppliers raised the issue of whether the data and products produced by these suppliers will be acceptable and appropriately qualified for licensing. Some data in the Management and Operating Contractor's (M&O) technical data base have been determined to be unqualified, not traceable, inaccurate, or indeterminate based on various deficiencies which have also surfaced as a result of DOE audits. The Technical Basis Document, which supports the Viability Assessment (VA) Total System Performance Assessment, indicates that a major portion of the data supporting the VA is not qualified. DOE's License Application (LA) Plan does not recognize the current situation with regard to implementation of its QA program and the activities needed to address it.

To obtain authorization to construct a HLW repository, the DOE must be able to demonstrate in its LA that data, analysis, and designs of barriers and systems important to safety or waste isolation meet QA requirements of Appendix B to 10 CFR Part 50.

The QA program applies to all systems, structures, and components important to safety and waste isolation. Confidence in the DOE demonstration that public health and safety will be protected is based, in part, on the confidence in the adequacy of data, data analyses, construction activities, and other items and activities associated with the LA which are obtained through a QA program.

We understand that the DOE management agrees with the need for improving the QA program and is moving aggressively to make the necessary upgrades prior to submitting its license application. Our staffs continue to work together to address these important issues.

WISCONSIN ELECTRIC POWER COMPANY
March 15, 1999

The Honorable JOE BARTON
Chairman
Subcommittee on Energy and Power
Room 2125
Rayburn House Office Building
Washington, DC 20515-6115

DEAR CHAIRMAN BARTON: In response to your letter of February 26, 1999, I have attached answers to additional questions posed by Mr. Markey. If there is any additional assistance I can provide to the Subcommittee, please do not hesitate to contact me.

Sincerely,

RICHARD A. ABDOO
Chairman of the Board and Chief Executive Officer

ANSWERS BY MR. RICHARD ABDOO TO FOLLOW UP QUESTIONS FROM MR. MARKEY FOR THE RECORD

Question 1. Your concern, if I understand it, is that if DOE schedules slip again, if the State of Wisconsin does not allow you to expand on-site storage, and if no other storage options are available to you then you would have to shut down the Point Beach plant. You state that you already have approval for 12 dry casks. Is it correct that the current storage pad for the casks can fit up to 48 casks, and that the Environmental Impact Statement, which was the basis for approval of the first 12 casks, covers 48 casks? Would 48 casks allow Point Beach to operate through the end of its license?

Answer 1. The Wisconsin Electric storage facility at Point Beach power plant is sized to accommodate 48 casks and the Environmental Impact Statement for Point Beach does cover 48 casks. Those 48 casks would allow Point Beach to operate through the end of the licenses for both units at the plant.

Question 2. In your latest Annual Report you inform your shareholders, without mentioning the word "shutdown," that Point Beach "has sufficient temporary storage to complete the scheduled fall 2003 Unit 1 refueling outage," and in your latest Quarterly Report you describe plans to apply "in the spring of 1999 for authority to load additional casks." If you are concerned about a shutdown, why have you not directly told your shareholders of the possibility of a shutdown of more than 20% of your electricity generating capacity and analyzed for them the potential financial consequences?

Answer 2. Wisconsin Energy, the holding company whose principle subsidiary is the Wisconsin Electric Power Company, informed stockholders twice in 1998 that it only had sufficient storage for spent nuclear fuel at its Point Beach plant for operations through the year 2003. On April 3, 1998, in the Annual Financial Statements and Review of Operations that accompanied the Chairman's letter and Proxy Statement to shareholders and again in the 10-Q report from September of 1998, shareholders were informed of the spent fuel storage and disposal situation at Point Beach. Shareholders were informed of the operational ability that existing approved storage provided and were also informed of the plans at that time to seek additional storage approval from the State of Wisconsin to assure continued operation beyond the year 2003. Further, shareholders were also informed that Wisconsin Electric was "unable to predict when the DOE will actually begin accepting spent nuclear fuel" and that President Clinton threatened to veto legislation that would have established a temporary spent fuel repository in the State of Nevada but that the matter, at that time, was pending. Wisconsin Electric has every intention of pursuing all reasonable options to deal with our spent fuel storage situation so that Point Beach can continue to operate beyond 2004. Indeed, my testimony stated that, "We are exploring all reasonable options to keep the Point Beach plant operating by obtaining sufficient storage capacity for the spent nuclear fuel, and we are in a situation where we must explore all options in the hopes that one of them will succeed." This is our message to the House of Representatives and it is our message to shareholders in our statements to them.

OFFICE OF THE GOVERNOR
March 12, 1999

The Honorable JOE BARTON
Chairman, Subcommittee on Energy and Power
U.S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington, D.C. 20515-6115

DEAR CONGRESSMAN BARTON: Attached please find my response to the question posed by Congressman Markey of the subcommittee. If you or any other member of the subcommittee have any additional questions, please do not hesitate to contact me.

Sincerely,

KENNY C. GUINN
Governor

Question for Governor Guinn: The Nuclear Energy Institute, in its testimony, states that the radiation standard for Yucca Mountain in H.R. 45 "ensures the same level of public safety as the Nevada State radiation protection standard." Is this correct?

Response: Nevada as an agreement state under the regulations of the Nuclear Regulatory Commission, has adopted the Commission's radiation standard for the entire nuclear fuel cycle. That standard for the entire nuclear cycle from mining uranium through disposal, is 100 milirem. The Nuclear Regulatory Commission has apportioned 25% of this standard to waste disposal, or 25 milirem, which exceeds the standard proposed in H.R. 45 by a factor of 4.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF AIR AND RADIATION
March 11, 1999

The Honorable JOE BARTON
Chairman, Subcommittee on Energy and Power
Committee on Commerce
U.S. House of Representatives
Washington, D.C. 20515

DEAR MR. CHAIRMAN: Enclosed, for insertion into the hearing record, are the Environmental Protection Agency's (EPA's) responses to follow-up questions from the February 10, 1999 hearing on H.R. 45, the Nuclear Waste Policy Act of 1999 before the Subcommittee on Energy and Power. I hope this information will be useful to you and Members of the Subcommittee.

Thank you for providing EPA the opportunity to testify on this important issue. I trust that the enclosed information is helpful to you. Please feel free to contact me if you have further questions.

Sincerely,

ROBERT PERCIASEPE
Assistant Administrator

Enclosure

EPA'S RESPONSES TO FOLLOW-UP QUESTIONS

Question 1. When can we expect the EPA to release a draft rule on the radiation standard for Yucca Mountain? When does EPA intend to have the final rule completed?

Response: The Agency expects to send a draft rule to OMB in March of this year. The final rule will be completed within a year of publishing the proposed rule.

Question 2. The EPA testimony often cites the NAS report on radiation. The NAS report criticized EPA's approach toward human intrusion, stating "we conclude that it is not possible to assess the probability of human intrusion into a repository over the long term, and we do not believe that it is scientifically justified to incorporate alternative scenarios of human intrusion into a risk-based compliance assessment." This statement directly conflicts with your testimony (page 8). Please explain this inconsistency.

Response: The NAS report strongly supported the principle that there must be an analysis of the consequences of human intrusion as part of the licensing process for Yucca Mountain. The report stated that EPA should assume that human intrusion

will occur (NAS Report p. 111) and that EPA should require an assessment of the ability of the repository to retain the radionuclides at a safe level based upon a single scenario for that intrusion. (NAS Report p. 12) The NAS report recommended that EPA determine the human intrusion scenario during its rulemaking. (NAS Report p. 111) It is this recommendation that EPA was referring to in its testimony. H.R. 45 would eliminate the need for such an analysis by requiring NRC to assume that institutional controls at the site would prevent human intrusion or any action which would cause the radiation dose standard to be exceeded. H.R. 45 is thus inconsistent with the recommendations of the NAS report.

The section you quoted refers to the NAS report's recommendation that EPA not use in its Yucca Mountain Standard the same *approach* to human intrusion that EPA used in analyzing human intrusion at the Waste Isolation Pilot Plant (WIPP). In the WIPP analysis, EPA directed DOE to take the current drilling rates in the geologic area where the WIPP is located and to assume that those rates of intrusion would continue to occur in the future. EPA and DOE used an approach that randomly placed intrusion events in space and time, based on the rate of drilling events (number of intrusions per square kilometer per 100 years). In its Yucca Mountain rulemaking EPA is considering the best method for analyzing human intrusion at Yucca and is looking at alternatives to the approach it used at WIPP.

Question 3. There is also an inconsistency with the NAS on the question of an appropriate starting point for setting a radiation standard. On page 5 of your written statement, EPA claims that the NAS "suggested that the starting point for standard setting is consistent with a standard of 2 to 20 millirem/year," citing page 49 of the NAS report. The tables 2-3 and 2-4 referenced in the NAS report clearly indicate that a standard of 25 millirem (corresponding to a risk of 10^{-5}) is in widespread use domestically and internationally. It appears that EPA intentionally mischaracterized the NAS recommendations in order to avoid endorsing the widely-accepted 25 millirem standard. Please explain this discrepancy.

Response: The NAS did not directly suggest a starting point of 2 to 20 millirem/yr; it said that EPA should start by looking at a standard with an annual risk limit of 10^{-6} to 10^{-5}. In our testimony we converted this annual risk to an annual dose level to simplify comparisons with the standard in H.R. 45 and other dose based standards. In making that conversion, we used a conversion factor (5 chances in 100 of developing a fatal cancer for each "sievert" of dose) which the NAS cited on p. 47 of its report. Using that conversion factor, 2 to 20 millirem is the equivalent of the NAS risk range. This range is calculated as follows: First, each sievert is converted into rem (there are 100 rem per sievert), so that one rem represents a risk of 5 in 10,000 (5×10^{-4}). Second, there are 1,000 millirem per rem, so the risk per millirem is 1,000 times less per rem (or 5×10^{-7}). Therefore, the risk from 2 millirem is calculated as $2 \times 5 \times 10^{-7}$ or 10×10^{-7}, which is 1×10^{-6}. The risk from 20 millirem is ten times more or 1×10^{-5}.

The Agency accurately characterized the NAS recommendations. The only 25 millirem limit in tables 2-3 and 2-4 is EPA's original High Level Waste Disposal Standards (40 CFR 191) which EPA promulgated in 1985 and a Court vacated in 1987. However, that limit was based on outdated dosimetry and was summarized (to an unintentionally misleading effect) in the NAS report. In fact, that standard was 25 millirem to the whole body plus 75 millirems to any critical organ. While H.R. 45 does not state the type of millirem it is using, EPA assumed that it was a millirem effective dose equivalent, which are the units used in all standards currently being promulgated in the U.S. In order to provide equivalent protection to the public, in its 1992 rulemaking repromulgating 40 CFR 191, EPA established a new standard of 15 millirem effective dose equivalent. So, while the numeric value is lower, the underlying risk is the same. Also, please note that according to Table 2-3, the Nuclear Energy Agency, Canada, the Nordic countries, Spain, Switzerland, and the United Kingdom all have dose or risk limits below 15 millirem. The only country cited above the NAS range is Germany.

Question 4. The NRC explained at the hearing that the 100 millirem standard, as defined in H.R. 45, would be applied in practice at the 25 millirem level to members of the critical group population. Does that change EPA's objection to the standard proposed in H.R. 45?

Response: No, for several reasons. First, the bill could be misconstrued as a Congressional endorsement of a too lenient standard for radiation protection. Although NRC says that it will implement the legislation at 25 millirem, Congress would have endorsed a higher limit with the passage of H.R. 45. Second, a 15 millirem limit was applied to WIPP and it met that standard. Our success with WIPP shows that a properly designed facility, reasonably implemented, works and is still protective of public health. Third, we do not believe that there is a reason to allow higher exposure levels for Nevada citizens than for citizens of New Mexico and the rest of

the country. Since the people of Nevada must accept a facility that no one else wants, we should provide them with the same level of protection that the rest of the country receives from other regulated facilities.

Finally, and perhaps most importantly, under H.R. 45, the level of the individual protection is meaningless because it is unenforceable. Section 205(d)(2) requires NRC to assume compliance regardless of the actual limit. That section states: "The Commission shall assume that, following repository closure, the inclusion of engineered barriers and the Secretary's post-closure actions at the Yucca Mountain site, in accordance with subsection (b)(3), shall be sufficient to...(B) prevent any increase in the exposure of individual members of the public to radiation beyond allowable limits as specified in paragraph (1)." Therefore, the NRC must, by law, assume that no violation of the standard occurs. If the standard cannot be violated, the site cannot fail and the actual level of the standard is of no consequence. EPA believes any attempt by NRC to try to enforce any standard would be overturned in the courts because subparagraph 205(d)(2)(B) tells NRC to assume that no individual receives a dose in excess of the environmental standard set by Congress or the NRC under paragraph 205(d)(1). Paragraph 205(d)(1) sets the 100 millirem standard and gives NRC the ability to replace it with a 25 millirem standard.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF AIR AND RADIATION
March 25, 1999

The Honorable JOE BARTON
Chairman, Subcommittee on Energy and Power
Committee on Commerce
U.S. House of Representatives
Washington, D.C. 20515

DEAR MR. CHAIRMAN: Enclosed, for insertion into the hearing record, are the Environmental Protection Agency's (EPA's) responses to additional questions from Representative Edward Markey from the February 10, 1999 hearing on H.R. 45, the Nuclear Waste Policy Act of 1999 before the Subcommittee on Energy and Power. I hope this information will be useful to you and Members of the Subcommittee.

Thank you for providing EPA the opportunity to testify on this important issue. Please feel free to contact me if you have further questions.

Sincerely,

ROBERT PERCIASEPE
Assistant Administrator

Enclosure

EPA'S RESPONSES TO FOLLOW-UP QUESTIONS FOR THE RECORD

Question 1. Models suggest that maximum radiation exposure from repository releases would occur after roughly 300,000 years. Do you think radiation standards should extend to the time of the predicted maximum dose? What do the NAS recommendations, on which EPA's standard are based, say concerning the length of time to consider?

Response: The NAS recommended that the time over which compliance should be assessed be "the time when the greatest risk occurs, within the limits imposed by long-term stability of the geologic environment" (NAS Report p.7). The NAS defined this as "...a time scale that is on the order of 10^6 years at Yucca Mountain" (NAS Report p. 55). The NAS also made it clear, however, that it made this recommendation upon technical, not policy, considerations. We have considered several alternatives for the compliance period as we develop our proposed standard, among those is the time to peak dose within the period of geologic stability recommended by the NAS. As NAS also recognized, we must consider both the technical and policy issues associated with establishing the appropriate compliance period for the performance assessment of the Yucca Mountain disposal system. We will consider all factors—technical, legal and policy—as we establish the most appropriate compliance period in our final regulation.

Question 2. Please identify the areas in which the radiation standards in H.R. 45 differ from the Congressionally mandated NAS recommendations for Yucca Mountain radiation protection standards, including dosage, population, length of time, release causes, assumptions, and any other differences.

Response:

Level of Protection

The NAS recommended a starting point for standard setting be an annual risk limit of 10^{-6} to 10^{-5}. The NAS noted that this range is consistent with other U.S. nuclear regulations, and is therefore appropriate as a "reasonable starting point" (NAS Report, at 49). In our testimony we converted this annual risk to a annual dose level, using the conversion factor suggested by the NAS, to simplify comparisons with the standard in H.R. 45 and other dose based standards. This annual risk is consistent with a dose rate in the range of 2 to 20 millirem/year.

The 100 millirem/year in H.R. 45 is five times the *upper* risk limit recommended by the NAS. The 100 millirem/year is also inconsistent with international high level waste disposal standards which range from 5 to 30 millirem/yr. H.R. 45 would provide less protection to Americans than that afforded to citizens of other industrialized nations.

Length of Regulatory Compliance Period

As explained in the response to the first question, the NAS recommended the period of compliance to be the time when the greatest risk occurs within one million years from disposal. DOE's December 1998 Viability Assessment indicates that the peak dose would occur at about 300,000 years.

H.R. 45 establishes two regulatory time frames: (1) for the first 1,000 years the standard "will be met"; and (2) for the period from 1,000 years until 10,000 years "there is likely to be compliance" with the standard.

Protected Population

The NAS proposed using a "critical group" concept. The NAS defined this group to be "representative of those individuals in the population who . . . have the highest risk resulting from repository releases. The group should be small . . . and . . . homogeneous with respect to risk" (NAS Report p.53). Therefore, the NAS defined critical group can contain only those people who receive roughly similar doses. In this way, the standard is protective of the population as a whole because it applies to those individuals identified to have the highest level of risk.

H.R. 45 identifies the exposed population as the "average member of the general population in the vicinity of Yucca Mountain." This definition does not require that the group be either small or homogeneous with respect to risk. As explained in EPA's testimony, there are two concerns with this definition. First, the use of "average member" potentially allows those people closest to the facility to receive much greater risks than those who are at greater distances and/or who are not in the direct path of releases from the repository. Each person included in the "average dose" calculation who receives little or no exposure means that someone else can receive a much greater exposure. Second, the "general vicinity of Yucca Mountain" is undefined in H.R. 45. Currently, no one lives within twelve miles of the facility so the "general vicinity" would have to be at a considerable distance. This could be interpreted as meaning the largest population center near the facility which is about 75 miles away in Las Vegas. However, even assuming a much smaller 20 mile radius from the facility, more than 75% of the people within that radius would receive no exposure as they are not in the path of repository releases, but they would be included in determining the "average" exposure. Likewise, the remaining 25% of the people within this 20 mile radius are spread out over a distance of more than 8 miles and their doses can easily differ by an order of magnitude. Accordingly, the people living south of the site who receive the highest dose may receive as much as 40 times the 100 millirem/year standard, a fatal cancer risk of 2 in 25.

Human Intrusion

The NAS recommended ". . . that EPA should specify in its standard a typical intrusion scenario to be analyzed for its consequences on the performance of the repository." (NAS Report p. 108). The NAS made this recommendation because it believed that, despite the difficulty of accurately predicting future human intrusion, it is important to analyze the possible impacts of such intrusion on the repository's ability to contain the radioactive materials. The NAS found it unreasonable to assume that a system for post-closure oversight, based on active institutional controls, will prevent intrusions or releases in excess of allowable radiation release limits.

H.R. 45 ignores the NAS recommendation. Instead, H.R. 45 requires NRC in its licensing to assume that institutional oversight and engineered barriers "will prevent any human activity at the site that poses an unreasonable risk of breaching the repository's . . . barriers . . ." and will "prevent any increase in the exposure individual members beyond allowable limits . . ."

Question 3. Please estimate, roughly if necessary, how many people would die due to the repository if the maximum allowed exposure in H.R. 45 occurred than if the

maximum exposure in the EPA generic standards occurred. Please also explain any other health consequences from weaker standards.

Response: We estimate that the lifetime risk of a person developing a fatal cancer as a result of exposure to 100 millirem/yr in H.R. 45 is about 2 chances in 1,000, or 1 chance in 500. This is more than six times the maximum lifetime risk of 3 chances in 10,000 established through the dose limit of 15 millirem/year in EPA's existing generic standards for disposal of spent nuclear fuel and high-level waste. As explained in the example for the response to the second question, the "average member of the general public" can result in exposures forty times the 100 millirem/yr standard or more than 200 times EPA's generic waste disposal standard.

Unfortunately, it is difficult estimate how many deaths would occur if the releases from Yucca Mountain were at the exposure limit in H.R. 45. Among the variables are the size of the "general vicinity" identified in H.R. 45 (the larger the area, the more fatalities), the size of the population near Yucca Mountain (does it increase, decrease or stay the same) and the physical distribution of that population in the "general vicinity."

However, the following would approximate what is expected if one assumes the affected group to be the approximately 10 people at Lathrop Wells and 1,000 people in the Amargosa Valley. These calculations also take into account that H.R. 45 and EPA's standards are implemented differently. That is, H.R. 45 establishes an exposure for the "average member in the general population in the vicinity of the Yucca Mountain site," while EPA's standards limit exposure to the individual receiving the highest dose. If the population were to increase by a factor of 30, our best estimate is about 1 person would die under the EPA standard while about 60 would die if that population received the average exposure allowed in H.R. 45. It is important to understand that this is the number of deaths estimated in the first generation exposed to those levels from releases at Yucca Mountain. The number would need to be multiplied by the number of generations exposed to determine the total number of deaths.

Question 4. Please provide a brief explanation of why radiation protection standards are usually set significantly lower than background radiation levels.

Response: Environmental standards are designed to protect the public from the additional incremental risk that results from the regulated activity. Regulated activities, such as disposal at Yucca Mountain, typically result in some people being exposed to additional risk of cancer or other disease as a result of an activity which benefits others (in this case the users and producers of nuclear energy). Environmental regulations are designed to minimize this additional risk which is involuntarily imposed on other citizens.

Numerous risk communication studies have shown the public is willing to accept higher levels of risk that are voluntarily imposed (e.g., smoking), while they are not willing to accept risks imposed by others (e.g., releases from the Yucca Mountain repository). EPA typically regulates in the range of 1 chance in 10,000 to 1 chance in 1,000,000, a range the public is willing to accept from these involuntary risks. EPA's generic standard for disposal of spent fuel and high level waste is 15 millirem/year which is equivalent to a risk of 3 chances in 10,000, or at the upper bound of the acceptable range for involuntary risks.

Question 5. If the Yucca Mountain facility meets H.R. 45's standards, would that adequately demonstrate to the public that the site is a safe location for a permanent repository?

Response: No. As stated in EPA testimony, the individual lifetime risk of 1 chance in 500 of developing a fatal cancer at 100 millirem/year is unacceptably high. In addition, an equally important concern with this legislation is the way in which the standard would be implemented. The lack of a human intrusion analysis, the assumed adequacy of the effectiveness of engineered barriers and institutional controls, the lack of ground water standards and the preemption of environmental laws, and the short-circuiting of the NEPA process all contribute to an ineffective standard that virtually any location in the country could pass. H.R. 45 would set an inadequately protective standard, exclude public participation and would provide inadequate assurances that the repository will be safe.

Question 6. Please list the fatal cancer risks from standards in the major federal environmental laws and compare to the risk from the standards in H.R. 45.

Response: The following table identifies the allowable lifetime risk levels for various federal standards as well as the standard in H.R. 45. The chart indicates that the risk of fatal cancer imposed by the H.R. 45 standard would be clearly higher than all other environmental standards. The chart also shows that radiation standards are already set at higher risk levels than most chemical standards. The 100 millirem/year in H.R. 45 at best allows more than 6 times the risk and at worst about 2000 times the risk of the other environmental standards listed below.

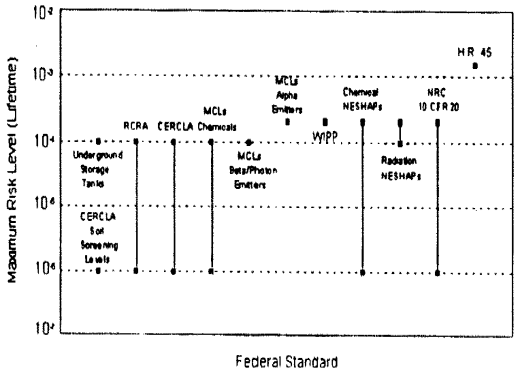
Question 7. Is there any scientific reason to assume that human intrusion into the repository will not occur for at least 10,000 years? Is there any scientific reason to assume that the likelihood of human intrusion is much lower than the probability of other release scenarios?

Response. No, EPA believes that there is no reason to assume that human intrusion will not occur for 10,000 years. It was NAS' opinion that human intrusion is plausible at Yucca Mountain and that institutional controls will not endure for more than a few centuries. The NAS concluded that the standards should, therefore, include consideration of the effects of human intrusion. The NAS thus recommended that the standard assume that an intrusion will occur and that EPA specify an intrusion scenario to evaluate the "resilience" of the repository.

There are two ways in which releases from the repository could occur. Either through undisturbed scenarios (natural events and processes) or disturbed scenarios (human intrusion). The undisturbed releases are a certainty and therefore are not based on probability; it is merely a matter of when it will occur and how much radiation will be released. Human intrusion scenarios are based both on the probability and the consequence of that intrusion. The NAS noted that it would not be possible to quantify the probability of human intrusion since it would be based on unknowable factors. Since it would be impossible to predict when a human intrusion event would occur, the NAS recommended it not be included in the undisturbed repository analysis. However should one occur, the releases from the repository and the impact on public health could be greater than that from any undisturbed release. The NAS therefore recommended the standard include and specify a type of intrusion analysis to assess the performance of the repository when such an intrusion occurs.

Allowable Lifetime Risk Levels for Various Federal Standards

Non-Occupational Exposures



THE NUCLEAR WASTE POLICY ACT OF 1999

FRIDAY, MARCH 12, 1999

HOUSE OF REPRESENTATIVES,
COMMITTEE ON COMMERCE,
SUBCOMMITTEE ON ENERGY AND POWER,
Washington, DC.

The subcommittee met, pursuant to notice, at 9 a.m., in room 2123, Rayburn House Office Building, Hon. Joe Barton (chairman) presiding.

Members present: Representatives Barton, Burr, Whitfield, Norwood, Shimkus, Shadegg, Pickering, Bliley (ex officio), Hall, Markey, Pallone, Gordon and Dingell (ex officio).

Also present: Representatives Gibbons and Barrett.

Staff present: Kevin Cook, science advisor; Joe Kelliher, majority counsel; Rick Kessler, majority professional staff; and Sue Sheridan, minority counsel.

Mr. BURR [presiding]. The hearing will come to order. The Energy and Power Subcommittee, in our continuing efforts to try to hear everything we can about nuclear waste, once again, we will try to find answers to questions. We welcome Secretary Bill Richardson from the Department of Energy.

At this time the Chair would recognize the chairman of the full committee for any opening statement he might have.

Chairman BLILEY. Mr. Chairman, since there are no votes today, and I know that members have travel plans, I also know that the Secretary has a lot of things to do, I would ask unanimous consent to put my statement in the record and also make a unanimous consent request that all members may put opening statements in the record.

Mr. BURR. Without objection. All members' opening statements will be made a part of the record.

[The statements follow:]

PREPARED STATEMENT OF HON. CLIFF STEARNS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF FLORIDA

Thank you, Mr. Chairman. I am pleased to have Secretary Richardson with us today. I know many of us have questions regarding the Administration's position on H.R. 45. Like many of other subcommittee members, I am also interested in learning of the Secretary's views on alternative approaches to interim storage. Finally, I would like to discuss with the Secretary DOE's funding strategy for the permanent repository program.

In the Secretary's testimony before the Senate Energy and Natural Resources Committee on February 25, 1999, Secretary Richardson reiterated his opposition to placing an interim storage site at Yucca Mountain prior to making a site decision based on sound science. He also stated that DOE is considering alternatives to interim storage, including taking title to the wastes and accelerator transmutation.

I would like the Secretary to explain to us his Department's new proposal for taking title to spent nuclear fuel at nuclear power facilities and providing reimbursement of costs to the utilities. Hopefully he can tell us how it might affect the current federal program for safely disposing of the nation's spent nuclear fuel and defense nuclear waste. I would also like the Secretary to explain to us in more specific terms the transmutation option. Unless that transmutation facility is located at a permanent repository site, I am concerned that we then run into the same difficulties encountered in siting interim storage and permanent repository facilities.

The Secretary in the past stated that transportation is a reason to not proceed with interim storage. I would like to know his views on the safety of transportation. Are there unique aspects about the proposed transportation of spent nuclear fuel and defense nuclear waste to a repository at Yucca Mountain that would lead to the expectation that it would be more or less safe than the current transportation operations?

I understand that DOE needs about $10 billion in funding during FY 2000-2010 to finish a nuclear waste repository by 2010. However, if we look at DOE's usual appropriations level of $350 million per year, DOE may receive only about $4 billion to construct such a repository. With such a shortfall it seems unlikely that a repository would open by 2010. That, of course would lead to increased potential liability for the federal government in lawsuits filed by State regulators and utilities. I hope the Secretary will be able to provide our subcommittee with a plan to address the funding shortfall, and thus avoid any resulting problems.

Again, I appreciate that Secretary Richardson is here to discuss these issues with us. I look forward to his testimony. Thank you.

PREPARED STATEMENT OF HON. TOM BLILEY, CHAIRMAN, COMMITTEE ON COMMERCE

Mr. Chairman, I commend you for your dedication to solving the problem of high-level nuclear waste, and for your persistence in urging Secretary Richardson to testify before the Committee. Secretary Richardson's input is essential to our progress on H.R. 45.

Mr. Secretary, it is good that you are here. I realize that you face many other problems, including a national security crisis. By comparison, it may seem that the problem of nuclear waste can be put off until tomorrow or the day after.

Mr. Secretary, do not make the same mistake some of your predecessors have made. This issue is a top priority. On January 31, 1998, the Department failed to meet its statutory and legal obligation to begin accepting spent nuclear fuel. As a consequence of that failure, the federal government is now facing an enormous liability. Someone, either the electricity ratepayer or the general taxpayer, will have to pay for the consequences of this failure. Every day that passes without a solution to this problem, this liability grows.

We are here today to solve this problem and avoid a showdown over nuclear waste. Your presence here before the Committee is a promising start.

At the end of January, Chairman Barton and I signaled our intention to move forward with legislation to resolve the nuclear waste problem. I am troubled that it has taken seven weeks, and several invitations to you, to hear that you are now ready to begin the dialogue. The American people deserve better than that. I hope you are prepared to share with us today some details, some substance on how the Department intends to address the nuclear waste problem, especially in light of the Department's mounting legal liability. We welcome your constructive views. However, the time for "beginning the dialogue" has long passed, and the time is here to put some substantive solutions on the table for our consideration.

We must also address the funding situation for the permanent repository. The Department has repeatedly said, in Congressional testimony and in public statements, that the permanent repository will begin operations in the year 2010. What the Department has not been telling us is how it would obtain the funding necessary to meet this 2010 milestone. Based on information provided by your Department, there are several years in the next decade when the Department will require funding far in excess of what you have historically been able to obtain through the appropriations process. In fact, for fiscal years 2005 through 2009, the permanent repository will require over one billion dollars in each fiscal year. Yet the total appropriations for this program have been far less, typically down around $370 million annually. How you expect to triple the rate of appropriations to this program, without violating appropriations caps and budget rules, is a mystery to me.

The problem is not just yours to solve. After all, Congress imposes the caps on appropriations, sets the budget rules, and establishes statutory limits on the amounts the ratepayers must contribute. All of these factors constrain the size of

the appropriations for the program. But, Mr. Secretary, I expect you to be candid with us about this problem—under current funding levels and your own cost estimates, DOE will not be able to open the permanent repository in 2010. I urge you to be constructive as well—if you have some legislative solutions in mind to address this problem, now is the time to share those with us. Together, we can solve this funding problem so that the permanent repository opens in 2010, but you first have to come forward and acknowledge that the 2010 date is not possible without major changes to the program budget.

Mr. Chairman, I look forward to the testimony of Secretary Richardson. Let's hope what he has to tell us was worth waiting for.

PREPARED STATEMENT OF HON. KAREN MCCARTHY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MISSOURI

I would like to commend the Chairman for extending an invitation to my good friend and our former colleague, Bill Richardson, who shoulders the primary responsibility for this critical issue. In addition, I would like once again to thank Secretary Richardson for his recent visit to the Kansas City area to tour the Allied Signal plant.

At the Subcommittee's February 10 hearing, questions were raised by witnesses from the Department of Energy and the Justice Department regarding the adequacy of the funding mechanism in H.R. 45. Specifically, Mr. Lake Barrett Acting Director of the Office of Civilian Radioactive Waste Management of the Department of Energy testified that the funding mechanism is no longer sufficient to provide for an interim storage facility without further delaying completion of the permanent repository. Mr. Stuart Schiller Deputy Assistant Attorney General of the Justice Department, in turn, raised serious concerns about the liability of the Department of Energy and/or the liability of American taxpayers given the recent decisions by the federal courts regarding the Department's failure to begin acceptance of spent nuclear fuel.

I am hopeful that this hearing will shed light on the recent proposal for the Department of Energy to take title to the spent fuel onsite at utilities' reactors. I am specifically interested in learning how this proposal will mitigate liability and shore up funds for the permanent repository. I am also interested in teaming whether or not legislation will be needed should the Administration move forward with taking title of the spent fuel. Finally, I would like to learn what legislation would need to include in order to come to the most satisfactory result on this vital issue. I would encourage that any future action be built upon a consensus for action. Such a consensus must include all stakeholders in the process in order to be meaningful.

Great strides on this critical issue have been made. We still have much work to complete. I am confident that Secretary Richardson, will outline the Administration's plans to handle the Department's liability in meeting its obligation to dispose of the spent fuel it is legally obligated to handle.

Mr. BURR. The Chair would recognize the ranking member from Michigan for any type of opening statement, Mr. Dingell.

Mr. DINGELL. Mr. Chairman, thank you. I am grateful to you for recognizing me. I will try and be as brief as possible. I will ask unanimous consent to put my full statement in the record.

Mr. BURR. Without objection.

Mr. DINGELL. Mr. Chairman, I want to welcome the Secretary and thank him for being here. It is important that he be present to discuss the Department's nuclear waste repository program. As a former member of the Commerce Committee, Mr. Secretary, we know you understand that this program has not operated as it should at all times. The program has been put under significantly sounder footing today than it was formerly, and it is important that the Congress not undermine the progress.

Mr. Chairman, as all know, I have been a strong supporter of legislation directing DOE to build both a permanent storage facility in Nevada and an interim storage facility there. These are necessary and complementary regrettably, because there has been so much delay in addressing the overall problem. I believe that the

enactment of legislation of this kind would enable the Department to commence accepting waste as soon as possible.

That approach has regrettably been opposed by the President, and differences of opinion exist on this matter. It is important, however, that discussions of the problems affecting the repository program and solutions take place at the earliest possible time, and for that reason I am particularly pleased, Mr. Secretary, you are here.

I would observe that there are major problems not only with the acceptance of title, but also the slowness with which the program has gone forward, difficulty in getting agreement with regard to what should constitute the final program and form, and difficulty in achieving any expectation as to when this program, both with regard to the temporary and with regard to the permanent storage program, can be completed.

There is also a very large Tucker Act liability for the Federal Government. And I want to stress that. The amount that we have heard mentioned is on the order of billions of dollars, billions of dollars in liability to the taxpayer if this matter is not correctly and speedily addressed. It will require not only the best work of this committee and our colleagues in the Senate, but also of the administration.

It will in like fashion require the necessary cooperation of the industry. And I would just tell my friends in industry that without their full cooperation on addressing the Tucker Act problems, it will be very difficult to get legislation out of this committee to address the problems of either temporary storage or a permanent repository. And I hope all in the industry are listening to that.

The cost and the danger to the taxpayer here are then significant, and I hope that all will address this with more than casual concern. I am grateful to you for your willingness to explore the new approaches, Mr. Secretary, to what you have expressed as the nuclear utilities' serious concerns about nuclear waste disposal. The costs of temporary storage weigh level on the companies and heavily on the ratepayers who have contributed billions of dollars to the Nuclear Waste Fund over the past 15 years. This money is now being diligently dissipated by the budgeteers and by the Appropriations Committee to the detriment not only of the interests of the Department, but also the interests of the industry, the interests of the American ratepayers and, very frankly, to the detriment of our attempts to resolve the questions which confront us here.

In any event, I am delighted you are here, Mr. Secretary.

I thank you for your courtesy to me, Mr. Chairman, and I hope that we will have a successful consideration of this matter, which will lead to a full and an open discussion of all of the questions which confront us today.

Thank you, Mr. Chairman.

[The prepared statement of Hon. John D. Dingell follows:]

PREPARED STATEMENT OF HON. JOHN D. DINGELL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

I am pleased that the Secretary is appearing before the Subcommittee today to discuss the Department's nuclear waste repository program. Mr. Secretary, you bear the heavy responsibility of keeping the repository program on track. You also are

the Administration's point man on the legislative front, and I am glad to have you with us today.

As a former member of the Commerce Committee, you know that this program has not always operated as it should. However, the program has been put on somewhat sounder footing today and it is important that Congress not undermine this progress.

As you know, I have been a strong supporter of legislation directing DOE to build an interim storage facility in Nevada, as a complement to the repository program, to enable the Department to begin accepting waste as soon as possible. This approach has been strongly opposed by the President, and those differences of opinion may persist. However, it is very important that discussions of the problems affecting the repository program—and possible solutions—do take place and I hope you will be able to take part.

At the Subcommittee's February 10 hearing, questions were raised by witnesses from DOE and the Justice Department about the approach taken in H.R. 45, which is based on legislation reported by this Committee during the past two Congresses. It is clear that circumstances have changed since the Committee last considered nuclear waste legislation.

In particular, the Department of Energy testified that the funding mechanism in the bill is no longer sufficient to provide for an interim storage facility without further delaying the permanent repository. The Federal government is also facing billions of dollars in damages from lawsuits filed by utilities, and these suits must be addressed. Also, the Justice Department testified that in light of the recent *Winstar* case, the bill itself could open the government to further damages under the Tucker Act. I want you to know that I am concerned about these questions, and believe it is essential that members get the answers *before* proceeding to a markup.

I also appreciate your willingness, Mr. Secretary, to explore new approaches to what you yourself have referred to as the nuclear utilities' "serious concerns" about nuclear waste disposal. The costs of temporary storage weigh heavily on these companies and their ratepayers, who have contributed billions of dollars to the Nuclear Waste Fund over the past 15 years. To date, these parties have received no benefit whatsoever, and it is understandable that they turned to the courts for relief. The courts have ruled DOE breached its contracts with the utilities, and billions of dollars in claims have been filed. The impact of these suits is difficult to judge at this point—if damages are paid out of the Nuclear Waste Fund, the repository program could be crippled. On the other hand, if damages are paid from the Judgment Fund, the taxpayer will pick up the tab. Neither of these is outcomes is desirable, and it would be irresponsible not to address this issue in any legislation.

Mr. Secretary, I know that these judicial developments have caught your attention. That is something we have in common. The issues are very complex, and I look forward to hearing how the Administration plans to address them. There is room for cooperation between the Administration and the Congress, and I am willing to explore any options you can suggest.

Mr. Secretary, I welcome you back to the Committee and look forward to your testimony.

Mr. BURR. The gentleman's time is expired.

The gentleman from Georgia Mr. Norwood.

Mr. NORWOOD. Thank you, Mr. Chairman. I realize that you are after brevity, and I have a 1½ hour opening statement, so I will just place it in the record. But I wanted to thank the Secretary very much for being here and point out that I would associate my remarks with Mr. Dingell's remarks so that we all know that this is a very bipartisan hearing.

And, last, I want to remind you, Mr. Chairman, this is the sixth time we have met on this, and I am wondering if there is some rule of the House if you have enough hearings, the job gets done. But this is our sixth one in 4 years and 2 months, and it is time, Mr. Secretary, for us to do what we need to do.

[The prepared statement of Hon. Charlie Norwood follows:]

PREPARED STATEMENT OF HON. CHARLIE NORWOOD, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF GEORGIA

Thank you, Mr. Chairman, for holding this hearing today on the nuclear waste problem in this country. Thank you as well, Secretary Richardson, for taking time out of your busy schedule to come before us today to discuss this important issue.

Although we are talking about nuclear waste here, this is not nuclear science. This is a simple issue, with a simple solution. The bottom line is that the federal government has an obligation to take 38,500 tons of spent nuclear fuel off the hands of the seventy or so nuclear power plants and defense sites around the country and store it in a safe, remote site. It has not done that and I still don't know why not.

Back in 1982, Congress directed the Department of Energy to provide for the safe and permanent disposal of spent nuclear fuel and high-level radioactive waste. It gave it 16 years to get this done. It also gave the DOE a way to pay for it by imposing a tax on energy consumers.

Now, 17 years later, the American taxpayers have paid almost $7 billion in higher energy prices—Georgia taxpayers alone have paid over half a billion dollars—into the Nuclear Waste Fund. But what has the federal government done during that time? Studied the problem. Now they want ten more years and billions of dollars more to study the problem some more! And the DOE *still* can't say whether or not it will be ready to take the spent nuclear fuel by then.

The one thing that I want to get from this hearing is: When will the Department of Energy begin taking nuclear waste out of the suburban and rural areas of this country and store it in a safe remote place like it's supposed to? It has the money, it has the technology, it has the location, it has had plenty of time. We have long passed the time for excuses; now it is time for action.

Mr. Chairman, thanks again for holding this hearing today, and I look forward to hearing from the distinguished Secretary.

Mr. BURR. The gentleman's time is expired.

The Chair recognizes Mr. Brevity himself, the ranking member on the subcommittee, Mr. Hall.

Mr. HALL. Mr. Chairman, I thank you for holding the hearing, and I realize you didn't do it, but you are acting chairman this morning, and we are honored to have you.

Mr. Secretary, it is good to have you. It is always good to have one of our own come back, as you know. I sat by you it seemed like 14 or 16 years or something like that, and I understand the President sat by you on the way back last night and that you were late getting in, so that is all of the more gracious of you to come and give us your time today.

When George Christian was selected as LBJ's press secretary, I sent him a note that I was really proud for him and everything. I said, you know, when someone that you know, as well as we know you and as I knew George, that gets appointed to a high position in government, you are always proud for your friend, but apprehensive for your government. We won't put that on you today, because we are not apprehensive about it with your background and everything. You have done a good job.

Just very briefly, I think we appreciate your willingness to solve any flaws that are in this bill, and after the six hearings that the gentleman from Georgia said, it is time, I think, to move this bill and do something with it. We need to help our government live up to its obligations in the Nuclear Waste Policy Act, which you helped pass as a member of this committee.

So my support of the nuclear industry is no secret, and it doesn't need repeating. I just welcome your participation here, and I thank you, and I hope we can come out with some good testimony to back good action of this committee in the not-too-distant future, because it is something we ought to do. It is something we said we would do, and I think it is something we will do.

I yield back my time.

[The prepared statement of Hon. Ralph M. Hall follows:]

PREPARED STATEMENT OF HON. RALPH M. HALL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Thank you Mr. Chairman, I will be brief as we are anxious to hear from the Secretary of Energy and our former colleague, Mr. Richardson—guess you don't call cabinet secretary Bill.

But I do thank you Mr. Chairman for agreeing to hold this essential hearing to further our efforts to deal with the issue of nuclear waste storage.

And, Mr. Secretary we welcome you and greatly appreciate your willingness to be with us this morning after arriving back in Washington late last night from your trip with the President. But most of all, we appreciate your willingness to help us solve any flaws in our bill to provide for interim and permanent storage of our countries spent fuel waste; and help our government live up to its obligations under the Nuclear Waste Policy Act which you helped us with as a member of this committee.

My position in support of our nuclear industry is no secret and does not need repeating. However, after two successful passages by the House of our bill—without the help of the Senate or Administration, time and the courts have taken a toll on our proposed solutions.

We welcome your participation on behalf of the Administration to bring these nuclear waste storage issues to a conclusion—a conclusion that will not only bring honor to the government in living up to its contract, but benefit our environmentally clean nuclear industry and thereby the American people.

Thank you Mr. Chairman.

Mr. BURR. The gentleman's time is expired.

The Chair would recognize Mr. Shimkus.

Mr. SHIMKUS. Thank you, Mr. Chairman. I, too, want to welcome the Secretary. And I am also looking for, you know, a full question-and-answer period on the proposals. I think that you have kind of laid out initially—and I think that is positive—that we start having this discussion. I, too, associate myself with the remarks from the ranking member of all of his lists of concerns.

As you know, Illinois has quite a large interest in this, receiving more electricity from nuclear energy, having more operating and closed facilities and more spent nuclear fuel and temporary storage than any State.

But this is good. I appreciate you coming in and, again, with it being late last night, and I look forward to this hearing and I yield back my time, Mr. Chairman.

Mr. BURR. The gentlemen's time is expired.

The gentleman from Tennessee Mr. Gordon.

Mr. GORDON. Thank you, Mr. Chairman. I will just quickly add my welcome to this Secretary to this very familiar room and acknowledge your special effort to get here today.

Let me also quickly say that I really don't know of any Cabinet Secretary that has been confronted with so many simmering issues that you walked into and want to compliment you on trying to move forward with many of these important issues.

I will have to say that I don't agree with your position in this case, but at least you put something on the table. At least the administration finally has a starting point so we can start talking, and I compliment you for that. And I am satisfied that reasonable folks can be able to sit down and finally get this worked out. So thanks for being here.

Mr. BARTON. The gentleman's time is expired.

The gentleman from Arizona Mr. Shadegg.

Mr. SHADEGG. As a fellow Westerner, I welcome the Secretary, and I associate myself with the comments of Mr. Hall; both his pride and his concerns.

A week ago today I was at Yucca Mountain, and I found it fascinating. I look forward to the testimony. I will put my full statement in the record, but I compliment you for being here this morning and having been in late last night. I look forward to the question-and-answer period.

Mr. BARTON. The gentleman's time is expired.

Who else?

The Chair would recognize Mr. Barrett for an opening statement.

Mr. BARRETT. Thank you, Mr. Chairman. And I appreciate you holding this hearing.

I want to welcome my good friend Secretary Richardson back. It is good to see you back here. And I want to personally thank you for the work that you have done trying to address the problems that have occurred in my State, Wisconsin Electric, sort of at the head of the line with some of the issues that are presently before us in terms of what to do with its nuclear waste. And I think that the Department has been extremely constructive in trying to deal with their problems. And I think I can say that the company feels that you have made a good faith effort as well to deal with this issue, and I think that that is the type of constructive dialog that we need.

I think that we will move a lot further toward addressing this problem in its totality by having your Department and, under your leadership, industry, environmental groups and consumers sit down. So I want to be here to thank you and let you know how much we appreciate that.

Mr. BARTON. The gentleman's time is expired.

The gentleman from New Jersey Mr. Pallone.

Mr. PALLONE. Mr. Chairman, I would just submit my statement for the record, if I could, at this time. And I want to welcome the Secretary for being here today. He is one of my favorite people, not only because of the substantive work that he does, but also because of his sense of humor.

And I have to tell you that I missed the opportunity when you came to New Jersey a couple of weeks ago with Congressman Rush Holt. I understand it was very good. He enjoyed it. And we appreciate the fact that you were willing to go over there in Princeton. Thanks, Bill.

[The prepared statement of Hon. Frank Pallone, Jr. follows:]

PREPARED STATEMENT OF HON. FRANK PALLONE, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

Mr. Chairman: I welcome this opportunity to review with Secretary Richardson his thoughts on how best to unravel what has become, over time, an ever more complicated issue—the dilemma of spent nuclear fuel and high level nuclear waste.

As many of the members are aware, during the 104th Congress, I participated in the development of legislation (H.R. 1020) that was overwhelmingly supported both within the Commerce Committee and the House.

A lot has changed since then.

For beginners, and perhaps most significantly, two separate opinions of the Court of Appeals for the District of Columbia have helped elucidate the nature of the contracts entered into between utilities and the Department of Energy. We now know that the DOE is in default on those contracts. And, we know that for every day that

passes, DOE's default—and their potential liability to contract holders—grows ever larger.

We also know that the Court of Federal Claims has, in at least three cases, determined that contract holders have been damaged by the DOE's default. Other cases with potential liabilities in the tens of billions of dollars are still pending.

We know that the DOE program at Yucca Mountain has made substantial progress. Much of the initial tunneling work at Yucca Mountain has been completed on time and under budget—a credit to the Department.

And, we know that the recently completed Viability Assessment has identified no "show stoppers" and that the Department is on track to complete work on its Environmental Impact Statement and a suitability determination during 2000 and 2001.

However, there is, perhaps, even more uncertainty about the appropriate path forward then ever.

In light of the Court decisions I noted just a moment ago, we do not know the extent to which contract holders might be entitled to damages. We don't know where the money to pay for those claims might come from—but we might surmise from the testimony of witnesses at our hearing last month that they might come from the Nuclear Waste Fund. Obviously, the payment of those claims from that fund would have quite an impact on the amount of money available to move this program forward.

We also have been made to think again about the approach taken in the legislation before us, with respect to radiation protection standards. I thought that the differing perspectives on that issue, presented in the testimony of the EPA and the Nuclear Regulatory Commission last month, was very instructive. Clearly, this is an area that begs for some creative thinking and perhaps a new approach.

Significantly, we now know that the funding mechanism that we were forced to create in previous Congresses doesn't work. The bill no longer raises sufficient funds for the program authorized in the bill. It also raises complex new issues that might well give rise to further taxpayer liabilities, if it is determined that we have exceeded our authority in forcing current contract holders to accept new obligations.

On this last point, the esteemed ranking member of our Committee, Mr. Dingell made some cogent remarks at our last hearing. He suggested that we review the bidding on this issue and perhaps fix the problem where it was created—that is, the way in which current budget rules affect the Nuclear Waste Fund.

Finally, of course, is Secretary Richardson's recent announcement about a new initiative whereby the DOE might "take title" to certain utility spent fuel.

There are, of course, a lot of questions concerning this proposal—but I want to applaud the Secretary for taking the proverbial bull by the horns and opening a dialogue with us and other affected stakeholders.

I look forward to his testimony and I look forward to working with you, Mr. Chairman, in an effort to re-establish the broad bipartisan consensus that is going to be necessary to solve this problem.

Mr. BARTON. The gentleman's time is expired.

The gentleman from Massachusetts Mr. Markey.

Mr. MARKEY. Thank you, Mr. Chairman, very much. And we welcome back our distinguished alumnus of this committee, and we are all very proud of his many achievements, and there are many more to come we are sure.

I am pleased that the hearings on the Nuclear Waste Policy Act have been extended so that we can hear from you, Mr. Secretary. I want to join in welcoming you here today, and I look forward to hearing the solutions that you are going to propose to a problem whose resolution has eluded us all thus far, and I know that you will give us a very thoughtful presentation.

We are here again because the nuclear industry is crying that the U.S. Government has not played fair; that it failed to keep its agreement to take the nuclear hot potato off their hands starting in January 1998, and it is just burning them up. Never mind they were the ones who lobbied and pushed for the bills that set artificial deadlines and then assured our committee in testimony that it was a deadline that could be met; never mind they haven't shown

that they have any safety problems storing the nuclear hot potato at their reactor sites for a few more years.

They want relief, and they chose not one, but two ways of getting their desired relief, legislation and litigation. The courts have ruled so far that while the government does not have to actually take the nuclear hot potato away, it does have to compensate nuclear utilities for their suffering. And although we here in Congress have twice defeated the industry's favored legislation, we really do hate to see a grown industry cry, so we have a bill before us again, H.R. 45, which would ship the nuclear hot potato by priority mail to Nevada.

Now, along comes the Secretary of Energy who hears the industry's cries and makes a modest proposal; perhaps the government can take some legal and financial responsibility for the hot potato, if industry accepts just one form of relief. I think we need to hear more details of the specifics of the proposal before passing judgment on it, but at least it has one clear benefit: It solves the problem industry says that it has.

Industry complains that DOE agreed to take title to the waste and that their customers have been paying for it, and under the proposal DOE would take title to the waste and pay for its storage at the reactor sites. I find it very interesting that much of the nuclear industry and some of its congressional allies have flatly rejected this proposal. According to the Nuclear Energy Institute press release issued the same day as the Secretary's Senate testimony, NEI President Joe Colvin said, ''this proposal ultimately will undermine the Nation's program . . . The end game of this proposal is that there will be no permanent facility for disposal of this fuel.''

Secretary Richardson suggested giving the nuclear industry what they say they need, but it turns out that is not what they really want. So what does the nuclear industry really want? Well, the NEI continues to press for a bill that would not only have DOE take title to the waste, but also ship 100,000 canisters of waste through communities in 43 States, gut environmental standards for a permanent repository, mock the environmental impact statement process, and stick the nuclear hot potato in a temporary storage facility in Nevada without a permanent solution.

And the nuclear industry also continues to pursue lawsuits for billions of dollars that would empty the Nuclear Waste Fund. Do not naively think the industry's law would stop the industry's lawsuits. NEI says, ''we believe litigation will continue to serve a necessary role in addition to the needed reform legislation.'' Such an approach would simultaneously ship the waste to Nevada and take back the moneys nuclear ratepayers contributed to pay for the waste disposal, leaving Nevadans with the nuclear hot potato and U.S. taxpayers with the bill.

There is an end game here in which, as NEI says, there will be no permanent facility for disposal of this fuel. And in the words of the cartoon character Pogo, ''sometimes when you point the finger of blame, you find it aimed squarely at your own chest.'' I would suggest that it is the industry's legislate and litigate, rather than the Secretary's, approach that poses the greatest current risk to funding and building the repository.

And so when I consider the alternatives, I have an open mind about the Secretary's proposal. I will be interested in learning more this morning about how it will be implemented, what its impact would be on the environmental and health and safety rules governing storage and transportation of spent fuel, and exactly how it would be paid for.

I, again, look forward to one of our greatest Americans, Bill Richardson, and his testimony before our committee today.

I yield back the balance of my time.

Mr. BARTON. I thank the gentleman for his opening statement. I would recognize the gentlemen from Mississippi Mr. Pickering for an opening statement.

Mr. PICKERING. Thank you, Mr. Chairman. At this time I will just listen, thank you.

Mr. BARTON. The Chair would then recognize himself for an opening statement.

Today we are going to hear testimony from the distinguished former member of this committee and subcommittee, currently the Honorable Secretary of Energy, Mr. Bill Richardson. This is our second hearing on the nuclear waste legislation. At our first hearing, the subcommittee heard testimony indicating that the Department's failure to fulfill its legal duty to begin acceptance of spent fuel by January 31, 1998, has had very significant consequences. That failure has resulted in a series of court defeats that expose the Federal Government and the United States taxpayer to the prospect of billions and billions of dollars in damage payments.

Those damage payments threaten the entire nuclear waste program. If billions of dollars are diverted from the Nuclear Waste Fund to pay for damages resulting from the Department's failure to fulfill its legal obligation to begin acceptance of nuclear waste, the nuclear waste program may come to a standstill. The prospect of damage payments of this magnitude are very real indeed.

These are problems that exist under the status quo. These are not problems that are created by the legislation pending before the subcommittee, H.R. 45. Legislation similar to H.R. 45 or H.R. 45 can mitigate these problems. Accelerating acceptance at an interim storage facility will reduce the potential liability to the Federal Government. The sooner the U.S. Government begins to fulfill its legal duty to begin acceptance of nuclear waste, the lower those damage payments will be. If less money is paid out in damages, more money will be available for the program.

Other problems exist under the status quo. According to figures provided by the Department of Energy, the nuclear waste program needs about $10 billion in funding between fiscal year 2000 and 2010 to construct a repository. Unfortunately, under the status quo, the Department can expect to receive less than $4 billion in funding during this period, since it is likely that appropriators will continue to fund the program at a flat annual level of approximately $350 million per year. By my mathematics, this means the Department will not have a repository operating in 2010.

It is clear to any observer the waste program is in serious trouble. Absent legislation, it is very unlikely the program will get the funds it needs to build a repository, and acceptance will be delayed

far beyond 2010, perhaps as far as 2020 or 2025. That outcome is simply unacceptable. We urgently need legislation in this Congress.

We are very glad to hear from the Secretary of Energy. I am pleased he wants to enter a dialog with the Congress on this issue. It is somewhat late in the day, but it is welcome nonetheless.

This subcommittee has been urging the administration to play a responsible role on nuclear waste legislation for the past 4 years. If the Clinton Administration had come to the table in 1995 when there was the first attempt to work on this issue, we could have prevented the breach of last year, and we might not be here today. However, that is water under the bridge, and we are here today.

In recent testimony before the Senate Energy and Natural Resources Committee, Secretary Richardson indicated the administration is weighing various alternatives to interim storage, including taking title onsite and a new option called transmutation. To be clear, the Clinton Administration has not taken a position on these options, but is simply studying them and has asked to enter into a dialog.

Mr. Secretary, we need to know exactly, if it is possible to know exactly, where the administration stands. We need a position, not a menu of options. We need you, who have been identified as the point person on this issue within the Clinton Administration, to put flesh on the bones of your Senate testimony. I hope you will do that today.

Our legislative goals are very clear. First, we want to accelerate the acceptance by providing for interim storage. Four years ago the subcommittee pursued this goal in order to prevent a breach of duty by the Department. That is no longer possible, but accelerating acceptance would mitigate damage payments by the Department of Energy and the U.S. taxpayer. It does not seem that the administration shares our goal, despite the string of recent court defeats, since it has yet to take any steps to accelerate acceptance.

Our second goal is to strengthen the repository program. As I indicated earlier, in my view, the current repository program is broken, since it is extremely unlikely the program will receive the funds it needs to build a repository if we continue on the current timeline of funding. The Department of Energy is aware of this shortfall, but until today has not offered any proposals to put the program on a sound financial footing. That makes me question whether the administration is truly committed to a strong repository program.

Our third goal is to protect consumers by halting the diversion of consumer fees from the Nuclear Waste Fund to fund other Federal programs. Once again, it does not seem that the administration shares this goal, but I think it is very possible that we could come to a common goal on this particular issue.

I want to digress from my prepared statement to say something. Secretary Richardson, you were a member of this subcommittee and this full committee for many years. You and I cosponsored quite a bit of legislation together. We have had quite a bit of fun playing against each other in the congressional baseball game. My record in the games that I pitched when you were playing third base, I won 4, you won 1; however, if we look at your batting average when you batted against me, I think you batted over .500. And

I don't remember that I ever struck you out, although I did get you out on a few occasions.

Now, if we can recapture the camaraderie and the cooperation that we had when you were in the Congress and a member of the committee, we can solve this problem. There are no technical problems that can't be solved. I don't think there are any political problems that can't be solved. But we need to begin to work together beginning in this hearing to come to a common goal. It is in the interests of the American people, it is in the interests of the electricity generation industry, and I think, quite frankly, it is in the interests of the world community that the United States of America be a leader in coming to a permanent decision on how to manage and store this high-level nuclear waste.

So, Mr. Secretary, I want to thank you for making time to come before the subcommittee. I welcome your written testimony, and I look forward to hearing from you.

That concludes my statement.

[The prepared statement of Hon. Joe Barton follows:]

PREPARED STATEMENT OF HON. JOE BARTON, CHAIRMAN, SUBCOMMITTEE ON ENERGY AND POWER

Today, the Subcommittee on Energy and Power will hear testimony from Secretary of Energy Bill Richardson on H.R. 45, the Nuclear Waste Policy Act of 1999.

This is our second hearing on nuclear waste legislation. At the first hearing, the Subcommittee heard testimony indicating the Department's failure to fulfill its legal duty to begin acceptance of spent nuclear fuel by January 31, 1998 has had very significant consequences. That failure has resulted in a series of court defeats, and those cases expose the Federal government and the taxpayer to the prospect of billions of dollars of damage payments.

Those damage payments threaten the entire nuclear waste program. If billions of dollars are diverted from the Nuclear Waste Fund to pay damages resulting from the Department's failure to fulfill its legal duty to begin acceptance of nuclear waste, the nuclear waste program may come to a standstill. The prospect of damage payments of this magnitude is very real.

These are problems that exist under the status quo, *not* problems that are created by H.R. 45. Legislation can mitigate these problems. Accelerating acceptance at an interim storage facility will reduce the potential liability of the Federal government. The sooner the Federal government begins to fulfill its legal duty to begin acceptance of nuclear waste, the lower the damage payments will be. If less money is paid out in damages, more money will be available for the program.

Other problems exist under the status quo. According to figures provided by the Department, the nuclear waste program needs about $10 billion in funding between fiscal year 2000 and 2010 to construct a repository. However, under the status quo the Department can expect to receive less than $4 billion in funding during that period, since it is likely appropriators will continue to fund the program at a flat annual level of about $350 million. By my math, that means the Department will not have a repository operating in 2010.

It is clear the nuclear waste program is in serious trouble. Absent legislation, it is very unlikely the program will receive the funds it needs to build a repository, and acceptance will be delayed far beyond 2010, maybe as far as 2020 or 2025. From my point of view, that outcome is unacceptable. For that reason, I believe there is an urgent need for legislation.

We are glad to hear from Secretary Richardson today. I am pleased to hear the Secretary wants to enter into a dialogue with the Congress on nuclear waste issues. It is a little late in the day, but I welcome it nonetheless.

This Subcommittee has been urging the Administration to play a responsible role on nuclear waste legislation for the past four years. I have to think if the Administration had come to the table in 1995, when we first tried to work with them, we could have prevented the breach last year, and we might not be here today. That is water under the bridge.

In recent testimony before the Senate Energy and Natural Resources Committee, Secretary Richardson indicated the Administration is weighing various alternatives to interim storage, including take title and transmutation. To be clear, the Adminis-

tration has not taken positions on these options, and has not identified other options it may have under consideration.

Mr. Secretary, we need to know exactly where the Administration stands. We need a position, not a menu of options. We need you to put flesh on the bones of your Senate testimony. I hope you do that today.

Our legislative goals are very clear. First, accelerate acceptance by providing for interim storage. Four years ago, the Subcommittee pursued this goal in order to prevent a breach of duty by the Department. Although that is no longer possible, accelerating acceptance would mitigate damage payments by the Department. It does not seem the Administration shares this goal, despite the string of court defeats, since it has yet taken any steps to accelerate acceptance.

Second, strengthen the repository. As I indicated earlier, in my view the current repository program is broken, since it is extremely unlikely the program will receive the funds it needs to build a repository. The Department is aware of this shortfall, but has offered no proposals to put the program on sound footing. That makes me question whether the Administration is truly committed to a strong repository program.

Third, protect consumers by halting the diversion of consumer fees to fund other Federal programs. Once again, it does not seem the Administration shares this goal, since the Administration has offered no proposals to end the diversion.

I look forward to hearing the Secretary's testimony.

Mr. BARTON. We now have Mr. Whitfield present.

Would you like to give a brief opening statement?

Mr. WHITFIELD. Mr. Chairman, I am just delighted that you are having a hearing on this important subject, and I look forward to hearing from Secretary Richardson.

Mr. BARTON. Okay. Mr. Gibbons, a member of the great State of Nevada congressional delegation, is not a member of the committee, but he asked to give a brief opening statement. And before we hear from the Secretary, we will recognize Mr. Gibbons.

I might also say that we offered the gentlelady from Las Vegas on the Democratic side the same option, but she couldn't be here this morning.

Mr. Gibbons.

Mr. GIBBONS. Thank you, Mr. Chairman. And I do want to thank you for the opportunity to be here today. Recognizing that I am not a member of this committee, I am grateful for the opportunity to have a chance to make an opening remark inasmuch as that I am the representative of the district into which this nuclear waste is directed to be stored.

I am beginning to get somewhat of the same feeling, I believe, that the Christians must have had when the Romans began to throw them to the lions. It seems that everyone is against you. And to my colleague, Mr. Norwood, who has indicated that we have already had six hearings on this, I am also reminded of a quote from H.G. Wells, which I find especially true today, and that is, human history becomes more and more a race between education and catastrophe. And I believe that six hearings may not be adequate in order to solve and understand the terrible issues that are associated with nuclear waste that we have presented to us today.

Mr. Chairman, I know that you are in an anxious mode to get on with this, and I will try to be brief, but I cannot sit idly by, nor can I sit quietly, without at least voicing my concerns for the State of Nevada. And, therefore, I am presenting my opening remarks to you, along with a letter from the Governor of the State of Nevada dated March 11, 1999, to you, which I would like to make a part of the record, if I may.

Mr. BARTON. Without objection.

[The letter follows:]

OFFICE OF THE GOVERNOR
March 11, 1999

The Honorable JOE BARTON
Chairman, Subcommittee on Energy and Power
U.S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington, D.C. 20515-6115

DEAR CONGRESSMAN BARTON: I would like to take this opportunity to thank you for your invitation to testify before your subcommittee last month. I believe that the hearing was beneficial and productive. Recently, as you are aware, Secretary of Energy Bill Richardson put forward an alternative approach to H.R. 45 that deserves careful consideration and analysis by your committee. The proposal, as I understand it, would allow the Department of Energy to take title to the spent fuel at the reactor sites, and, compensate the utility for its at reactor storage costs, until such time that a repository was licensed and ready to accept waste.

It would appear that this proposal would solve at least two of the utility concerns with the lack of a centralized interim storage facility or permanent repository. First, the proposal would address concerns over liability, transferring responsibility from the utility to the federal government, and second, it would insure that the ratepayers do not pay twice for the same service. Based on these two issues alone, I believe the Secretary's proposal deserves a thorough review and consideration as an alternative to H.R. 45.

Thank you for your time and consideration of this matter,

Sincerely,

KENNY C. GUINN
Governor

Mr. GIBBONS. And, Mr. Chairman, you know the Governor, the Nevada congressional delegation and perhaps overwhelmingly a majority of the citizens of Nevada oppose sending deadly high-level nuclear waste to the State of Nevada. I testified earlier before your committee and outlined why H.R. 45 is bad for America because of a number of reasons, including health, safety, and physical as well as environmental reasons.

I am encouraged by the Department of Energy today, and I want to also thank the Secretary for his diligent work and insight into this critical issue. And like most of us, I have grave concerns about the unnecessary transportation and the dangers created by a central interim storage facility in the third most seismically active area in the United States.

It is important to note that when Congress mandated that the Department of Energy begin accepting nuclear waste in 1998, that it was Congress with their political know-it-all attitude, not science, that created the current problem that is now—that now this country faces. Billion-dollar lawsuits are pending against the Department of Energy.

Science and common sense should be the driving force behind the problems asserted with current radioactive waste, but they are not.

After reviewing the Secretary's remarks that I have had before me and he gave before the Senate, I believe that he has come up with a way to ensure that our Nation's citizens, their safety and our Nation's highways remain safe from the deadly reality of a nuclear waste accident. Not only will this protect our communities, our schools and our homes, but it is a practical, cost-effective solution to the management of nuclear waste.

I would ask only that this committee and this Congress look past the emotional idea that we have to do something with nuclear

waste, and, therefore, the best solution is to bury it, to turn our eyes away and cover it and ignore it. And I hope that they look at the reality, because spent fuel can be stored safely at reactor sites, and it is quoted as such in H.R. 45.

As you may know, the Nuclear Waste Technical Review Board, an organization created by Congress to provide technical scientific evaluation of nuclear storage, concluded in their March 1996 report——

Mr. BARTON. Would the gentleman make his brief statement a little bit briefer, please?

Mr. GIBBONS. Mr. Chairman, I will wrap it up with the understanding that I can submit the complete copy of my remarks for the record.

But let me just state finally, Mr. Chairman, that in that 1996 report, that there is no compelling technical or safety reason to move spent fuel to a central facility, and that holds true today as it did in 1996 with their report.

And, Mr. Chairman, only to conclude, let me also state that, again, I want to thank you for the opportunity to voice my concerns. To be present here today means that Nevada has an interest in what is going on. We thank you for the opportunity, and I would ask if we do have questions, that we may be able to submit those questions for the record for the Secretary to answer to be made a part of the record later on.

And with that, Mr. Chairman, thank you.

[The prepared statement of Hon. James A. Gibbons follows:]

PREPARED STATEMENT OF HON. JAMES A. GIBBONS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEVADA

Mr. Chairman: I would like to thank you for this opportunity to join your distinguished Committee and to participate in this very important hearing. I would also like to thank Secretary Richardson for his diligent work and insight on this very critical issue.

Many times I have addressed the issue of high-level nuclear waste, and I often begin with a quote from H.G. Wells which I find to be especially true today.

He stated, "that human history becomes more and more a race between education and catastrophe," and I believe this statement should be the foundation for today's hearing.

As we all know, the Governor, the Congressional delegation, the citizens of Nevada and I—all, overwhelmingly oppose sending deadly, high-level nuclear waste to the State of Nevada.

I testified earlier this year, before your Committee, and outlined why H.R. 45, the Nuclear Waste Policy Act of 1999 is bad for America—because of health, safety, fiscal and environmental reasons.

Today however, I am encouraged by the Department of Energy and their solution to solving one of the major problems with H.R. 45—the unnecessary transportation and creation of a centralized interim storage facility.

It is important to note that it was Congress who mandated that the Department of Energy begin accepting nuclear waste in January 1998.

It was Congress in their political know-with-all, not science, that created the current problem this country now faces—the billion dollar lawsuits that are pending against the Department of Energy.

Science and common sense solutions should be the driving force behind the problems associated with current radioactive waste.

After reviewing the Secretary's remarks before the Senate I believe that he has come up with a way to ensure that our nation's citizens and highways remain safe from the deadly reality of a nuclear waste accident.

Not only will this protect our communities, schools and homes but it is a practical, cost-effective solution to the management of nuclear waste.

I would ask this Committee and Congress to look past the emotional idea that, "We have to do something with nuclear waste, and therefore the best solution is to

send it to Nevada," and look at the reality because, as H.R. 45 states, "spent fuel can be safely stored at reactor sites."

And as you may know, The Nuclear Waste Technical Review Board, an organization created *by Congress* to provide technical and scientific evaluation of nuclear waste storage concluded, in their March 1996 report, that *there is no compelling technical or safety reason to move spent fuel* to a central facility, and this holds true today.

If this nonpartisan Review Board, whose purpose was to look at irrefutable, unbiased science, made this determination, then I believe there is no justifiable reason to move nuclear waste from its current locations.

And that is why we should allow the Department of Energy—the Department that is responsible for the management of nuclear waste—to solve this issue **on their own.**

We do not need Congress to once again impose impossible goals and time lines, but we need to listen to the experts—allowing government and industry to work together to solve their problems.

You see, H.R. 45 will not reduce the number of sites currently storing nuclear waste. In fact it will only increase it by one, because none of the present sites will be closed before the site characterization of Yucca Mountain is completed.

I would anticipate that some industries would oppose Secretary Richardson's solution, I mean why not?

They would love to receive billions of dollars from the DOE for not taking their waste by January of 1998, and then they want the department to pay for the removal of waste from their facilities, to build an interim storage facility, and finally to pay for and build a permanent geological dumping ground.

Well, I am not sure where we are going to get the money to pay for all of this. Several billion here for compensation to utilities, a couple billion here to create an interim storage facility in Nevada, and a few billion to transport this deadly material?

I hope we don't expect the American taxpayer to pick up the tab. The people of Nevada do not have nuclear power plants, they don't want nuclear waste and they shouldn't be required to pay for it.

I would encourage Congress to look at the financial reality of this nuclear boondoggle.

In these times of tight budgets and fiscal responsibility are we going to back away from our promise to the American people, are we forcing ourselves into a budget deficit?

That is why we should truly listen to Secretary Richardson's proposal. If the government and industry can work together, cheaper, safer and more efficiently—then who are we to inject our will—the same will that got us into this mess.

Therefore, I fail to see the advantages of H.R. 45, and the Secretary's solution seems to be the right solution for America.

We all realize that few, if any problems, have become more challenging in recent years than the disposal of nuclear waste.

However, this Committee and this Congress must adhere to standards based on *sound science*, along with the protection and welfare of this nation's citizens. This should be the fundamental threshold we use when we address nuclear waste storage.

I encourage Members to step back from their elected positions and look through the eyes of their constituents.

Which option do you think they would choose—the option that protects the environment and the 50 million people who live along H.R. 45's transportation routes—the option that does not bankrupt our treasury or forces us to raise taxes?

Allow industry and government to work together to solve this problem. I encourage this Committee to give Secretary Richardson a chance to work with the utilities, I don't believe that is too much to ask—considering our alternative.

Again, Mr. Chairman I would like to thank you for the opportunity to testify before your Subcommittee, and would request that you include a letter from the Governor of Nevada and some additional written information to be added in the record as part of my testimony.

If I can be of any assistance to you or any other member of the Subcommittee, please let me know.

Mr. BARTON. Thank you, Congressman. And we certainly will allow you to submit some questions for the record, which is a courtesy we have extended to other Members and on other hearings that were not members of the subcommittee.

Mr. Secretary, we received your testimony last night at 9 o'clock. I actually have read it. I would have liked to have read it yesterday, but I did get a chance to read it. I would put it in the record. It is in its entirety, and we will recognize you for such time as you may consume to elaborate on it.

STATEMENT OF HON. BILL RICHARDSON, SECRETARY, DEPARTMENT OF ENERGY

Mr. RICHARDSON. Mr. Chairman. Thank you, Mr. Chairman——

Mr. BARTON. You need to really pull that up to you, Mr. Secretary.

Mr. RICHARDSON. Mr. Chairman, thank you for your very gracious remarks, as well as every member of this committee. It is good to be back home with you. I also, Mr. Chairman, want to endorse your call for trying to resolve this issue in a bipartisan way, alluding to our days in the past; maybe not—my past, certainly you are still playing.

Mr. Chairman, I would like to briefly discuss alternatives for managing our civilian nuclear power plant spent nuclear fuel until we are able to permanently dispose of it in a geologic repository.

The administration continues to believe that the overriding goal of the Federal Government's high-level radioactive waste management policy should be the establishment of a permanent geologic repository. Such a repository is essential for a number of reasons not only to dispose of commercial spent fuel, but also to dispose of spent fuel and high-level waste from the cleanup of the Department's nuclear weapons complex and spent fuel and high-level waste associated with the Navy's nuclear-powered fleet. A permanent repository is also essential to our nonproliferation goals.

Let me briefly talk about Yucca Mountain. I would like to briefly review how this administration has moved the Civilian Radioactive Waste Management Program forward in the last several years.

In many of the earlier years, it appeared that there was little progress toward siting a repository. In 1993, however, the Department broke ground at Yucca Mountain and began drilling the miles of tunnel needed for scientific investigations, completing the 5-mile loop in 1997. We also drilled a cross-drift at the horizon of the potential repository area. By reaching these areas, in other words, by getting inside the mountain itself, we are now able to verify model predictions that could not be confirmed before.

We are conducting three different thermal tests to evaluate how the heat of the waste could impact the surrounding rock and the repository structure. We are also now able to study water movement through the mountain. The verification of our models with real data from the mountain reduces potential uncertainties in our assessment of whether Yucca Mountain will work as a permanent repository. We are reaching the conclusion of our site characterization effort at Yucca Mountain.

In December 1998, I submitted the viability assessment to the Congress and to the President. The viability assessment revealed no technical showstoppers, but it did identify additional scientific and technical work needed before a decision can be made whether to recommend Yucca Mountain as a site for a repository. We will study the following three elements: one, the presence and move-

ment of water through the repository block; two, the effects of water movement on the waste package; and, three, the effects of heat from the decay of radioactive materials inside the waste packages on the site's geologic and hydrologic behavior.

It is important to underscore that the scientific and technical work being carried out at Yucca Mountain represents cutting-edge science on a first of a kind project.

The United States is at the forefront in developing a geologic repository, and the decisions we make will have impacts throughout the international community. We are on target, Mr. Chairman, to decide in 2001 whether Yucca Mountain is suitable to be the location of a repository and to submit a license application to the U.S. Nuclear Regulatory Commission in 2002.

So to restate our progress, since 1993, while we were not able to make up for time lost during the early years of the program, we have maintained steady progress and have met the key milestones of our program plan.

Let me discuss the Department's contractual obligation to take spent fuel from utilities beginning in 1998. Despite the progress being made at Yucca Mountain, the nuclear utility industry and State utility commissions are understandably concerned about the Department's inability to accept spent fuel on the schedule accepted back when the Nuclear Waste Policy Act of 1982 was enacted. The inventory of spent fuels in the United States continues to grow.

Spent fuel from nuclear power reactors is now stored at 72 commercial reactor sites in 33 States. We know that in some cases the existing storage pools are reaching their capacities. Each year, reactor sites will require additional onsite storage, either in pools or with dry cask storage. There are currently 10 utilities with dry storage facilities in 8 States. And many utilities are concerned about the costs and physical and regulatory limitations on their continued storage of spent fuel at their reactor sites.

As you are aware, the Department is in litigation with a number of utilities related to our contractual obligation to take spent fuel from utilities. The U.S. Circuit Court of Appeals for the District of Columbia has found that the Department has a contractual obligation to commence spent fuel disposal no later than January 31, 1998. The court, however, has twice rejected the request from utilities for an order directing the Department to physically move spent fuel from their sites and found that the contracts that the Department has with the utilities provided potentially adequate mechanisms for relief.

Pursuant to the ruling of the court of appeals, the Department announced that it would process claims presented to it under the contract, and we have entered into settlement discussions with several utilities. In addition, several utilities have come to talk to us about their specific problems. Some of these utilities have asked the Department to take title to their spent fuel onsite at their reactors. In separate litigation, 10 utilities have filed claims for damages. In the first three cases, the court found that the Department had breached its contracts, and the Department is now engaged in determining the amount of damages owed to these utilities.

The other Court of Claims cases are in very preliminary stages with potentially years of litigation still ahead. As indicated by the Justice Department in its testimony before this subcommittee on February 10, the damages that are being sought by the 10 utilities before the Court of Claims could total $8.5 billion. This is more than the existing balance in the Nuclear Waste Fund and is roughly 85 percent of the remaining costs to open the repository in 2010. Potential claims from other utilities could be many times this amount.

The Justice Department also stated that the decision on whether payments for these judgments would come out of the Nuclear Waste Fund is still pending. Let me state clearly that using the Fund to pay these claims would jeopardize the Department's ability to complete the repository program.

Let me turn to the administration's views of H.R. 45. The administration opposes this bill, which would require the Department to begin accepting waste at an interim storage facility in Nevada no later than June 30, 2003. Making a decision now to put interim storage in Nevada is not the right approach. It simply does not make sense to transport spent fuel across the country to Yucca Mountain until we have completed the scientific work and know where a final repository will be. Spent fuel is currently being stored safely at reactor sites under U.S. Nuclear Regulatory Commission oversight and can continue to be stored safely until a repository is open.

From a budgetary standpoint, enactment of H.R. 45 could also have several negative impacts on the repository program. First, it will add the costs of construction of an interim storage facility to the program budget and will advance the costs of transportation far earlier than now planned.

Between now and the year 2010, we estimate that H.R. 45 and the additional costs of the interim storage facility would add approximately $1.5 billion to the total costs of the Civilian Radioactive Waste Program. It would also require expending $2 to $3 billion for transportation before we know with certainty whether Yucca Mountain will be the site for a permanent repository.

In addition to these new budgetary burdens, and perhaps more significantly, H.R. 45 would not provide the Department or the Federal Government with relief from the billions of dollars of potential damages likely to be awarded through litigation. By imposing new statutorily defined obligations and deadlines, H.R. 45 would also create the potential for new litigation if the Department were unable to meet these requirements, or if it had the effect of altering the existing utility contracts.

For all of these reasons I have stated, the administration remains unequivocally opposed to the enactment of legislation requiring construction and operation of an interim storage facility at Yucca Mountain, and I would recommend a veto of any such legislation.

Let me now turn to our proposal to take title onsite. As the committee has requested, I will discuss it at this point. Let me emphasize first that the Department is only beginning to analyze this approach and discuss it with the utility industry consumers and environmental groups and other interested parties. However, we be-

lieve it appears to be a practical option that would provide a near-term solution to utilities' spent fuel storage needs and would be relatively easy to implement.

The chairman's invitation letter raised a number of specific questions, such as; one, how it would be funded; two, when it would be implemented; three, who would own and regulate these sites; and, four, how would it affect the Department's contractual ability. These are all very important questions that the Department is in the process of answering. Many of those answers will depend upon the specific needs of individual utilities.

Let me discuss briefly some of the concepts we believe are appropriate to consider as part of that discussion. Conceptually, the Department would offer to take title to spent fuel consistent with our schedule for acceptance under our contracts with the utilities. By taking title to the spent fuel, the Department could either assume financial responsibility for the utilities' continued management of the spent fuel or possibly assume physical possession and responsibility for management of the spent fuel.

We assume that based upon their individual circumstances, utilities may have different opinions on these alternatives. For example, a utility with a permanently shut-down reactor will have different concerns from a utility with operating reactors. While we could still have to address a range of issues, including liability, financial and operational responsibilities, we believe we could implement this proposal by modifying existing contracts with utilities. We want to hear from utilities and other interested parties on how taking title to spent fuel could most efficiently be implemented.

In return for the Department taking title and financial responsibility for the spent fuel, the Department would expect the utilities to terminate their litigation and claims, something that H.R. 45 does not address. This would end the uncertainty that continued litigation brings and ensure the continuance of a repository program. As I said before, the potential costs of current litigation damages already places the repository program in jeopardy. Consequently the cost to take title appears to be minimal compared to the potential costs of damages.

The cost of taking title onsite would depend on the final arrangements worked out with the utilities for spent fuel management. We have not done a detailed cost estimate; our rough estimate is that it could cost up to $2 to $3 billion between now and 2010. That cost estimate assumes that we would take title of the fuel in accordance with our contract acceptance schedule.

Let me deal with the program funding requirements. As we continue to discuss and develop the specifics of a take-title alternative to centralized interim storage, we would need to take a serious look as to how to pay for such a proposal without imposing undue burdens on either utility ratepayers or the taxpayers.

I also want to analyze further proposals that would ensure that the revenues raised by the nuclear waste fee remain available to complete the job of safe management and disposal of nuclear wastes. For some time both the administration and the Congress have been aware that the overall constraints of the Federal budget process have the potential to limit the availability of outyear funding for the nuclear waste program. Therefore, Mr. Chairman, I

would like to work with you and members of this committee to ensure that the repository program continues to be adequately funded.

If the Yucca Mountain site is found suitable, it is critical that funding is available after 2001 to meet our obligations as program demands increase, and to assure our ability to meet a date certain for disposal of wastes.

In exploring any funding alternatives, I want to preserve the two important objectives that I mentioned before: one, that we do not impose undue burdens on either utility ratepayers or the taxpayers; and second, that the revenues raised by the nuclear waste fee remain available to complete the job.

Let me conclude with this statement, Mr. Chairman: We are reaching the conclusion of our site characterization effort on Yucca Mountain. We know technical questions about the site remain. We need to finish our scientific and technical work. I know that you and many other Members of Congress are frustrated because we have not accepted spent fuel. We want to be responsive to utilities, State regulatory commissions, States, environmental groups, consumer groups that have had to tackle additional spent fuel management responsibilities.

But I want to reiterate the administration's view that enactment of interim storage legislation is not the solution. Shipping 10,000 metric tons of spent fuel to Yucca Mountain, as proposed in H.R. 45, is inconsistent with the process and principles established for making a decision on the permanent disposal of our Nation's spent nuclear fuel. I ask this subcommittee not to proceed with adoption of interim storage legislation. Instead, I want to take up your call, Mr. Chairman, to ask that we work together to fashion a more practical solution.

This legislation, H.R. 45, would place significant financial programmatic and legal liability on the department's civilian nuclear waste repository program. It would also prejudge the selection of Yucca Mountain, and it would not resolve the billions of dollars in claims arising out of the delay in accepting utility spent fuel.

There is no question that we need to address the utility spent fuel problems. The question instead is, how can we seize this opportunity to jointly explore alternatives to solving these problems?

Thank you.

Mr. BARTON. Does that conclude your statement?

Mr. RICHARDSON. Yes, sir.

[The prepared statement of Hon. Bill Richardson follows:]

PREPARED STATEMENT OF HON. BILL RICHARDSON, SECRETARY, DEPARTMENT OF ENERGY

Thank you, Mr. Chairman, and Members of the Subcommittee, for the opportunity to appear before you today to discuss alternatives for the management of spent nuclear fuel from civilian nuclear power plants until we are able to permanently dispose of it in a geologic repository.

The Administration continues to believe that the overriding goal of the Federal Government's high-level radioactive waste management policy should be the establishment of a permanent, geologic repository. Such a repository is essential not only to dispose of commercial spent fuel, but also to dispose of: spent fuel and high-level waste from the cleanup of the Department's nuclear weapons complex, unique commercial spent fuel transferred to the Department (such as Three Mile Island and Fort St. Vrain spent fuel), and spent fuel and high-level waste associated with the Navy's nuclear-powered fleet. A permanent repository is also important to our non-

proliferation efforts to demonstrate alternatives to reprocessing, important for the disposition of foreign research reactor fuel being returned to the U.S., and an option for disposition of surplus plutonium from nuclear weapons stockpiles.

YUCCA MOUNTAIN

Before addressing the proposed legislation—H.R. 45, the Nuclear Waste Policy Act of 1999—and an alternative approach, I would like to review quickly how this Administration has moved the Civilian Radioactive Waste Management Program forward in the last several years. In many of the earlier years it appeared that there was little progress towards siting a repository. In l993, however, the Department broke ground and began drilling the miles of tunnel needed for scientific investigations, completing the five-mile loop in 1997. We also drilled a cross-drift at the horizon of the potential repository area. Reaching these areas, we are now able to verify model predictions that could not be confirmed without being inside the mountain. We are conducting three different thermal tests to evaluate how the heat of the waste could impact the surrounding rock and the repository structure. We are also now able to study water movement through the mountain. The verification of our models with real data from the mountain reduces the uncertainties in our assessment of whether Yucca Mountain will work as a permanent repository.

We are reaching the conclusion of our site characterization effort at Yucca Mountain. In December 1998, I submitted the Viability Assessment of a Repository at Yucca Mountain to the Congress and to the President. This subcommittee received testimony on the Viability Assessment in February when the Acting Director, Lake Barrett, appeared before you.

The Viability Assessment revealed no technical "showstoppers," but it did identify additional scientific and technical work needed before a decision can be made whether to recommend Yucca Mountain as the site for a repository. Consequently, we have asked for close to a $50 million increase in the FY2000 budget for site characterization activities to address these concerns—a 17.4 per cent increase. We will study the presence and movement of water through the repository block, the effects of water movement on the waste package, and the effects of heat from the decay of radioactive materials inside the waste packages on the site's geologic and hydrologic behavior.

It is important to underscore that the scientific and technical work being carried out at Yucca Mountain represents cutting-edge science on a first-of-a-kind project. The United States is at the forefront in developing a geologic repository, and the decisions we make will have impacts throughout the international community.

We are on target to decide in 2001 whether Yucca Mountain is suitable to be the location of a repository and to submit a license application to the U.S. Nuclear Regulatory Commission in 2002. In short, since 1993, although we were not able to make up for time lost during the early years of the program, we have maintained steady progress and met the key milestones of our Program Plan.

CONTRACTUAL OBLIGATIONS FOR SPENT FUEL MANAGEMENT

I want to assure you that I am very conscious of the Department's contractual obligation to take spent fuel from utilities beginning in 1998. Notwithstanding the progress being made at Yucca Mountain, the nuclear utility industry and state utility commissions are understandably concerned about the Department's inability to accept spent fuel on the schedule anticipated at the time of enactment of the Nuclear Waste Policy Act of 1982. The inventory of spent fuel in the United States continues to grow. Spent fuel from nuclear power reactors is now stored at 72 commercial reactor sites in 33 states. We know some have already reached their capacity and many are reaching their capacity. Each year reactor sites will require additional on-site storage either in pools or with dry cask storage. There are currently 10 utilities with dry storage facilities in 8 states, and many utilities are concerned about the costs and physical and regulatory limitations on their continued storage of spent fuel at their reactor sites.

As you are aware, the Department is in litigation with a number of utilities related to the Department's contractual obligation to take spent fuel from utilities. The U.S. Circuit Court of Appeals for the District of Columbia has found that the Department has a contractual obligation to commence spent fuel disposal no later than January 31, 1998. The Court, however, has twice rejected the request from utilities for an order directing the Department to physically move spent fuel from their sites and found that the contracts the Department has with the utilities provide a potentially adequate mechanism for relief. Pursuant to the ruling of the Court of Appeals, the Department announced that it would process claims presented to it under the contract, and we have entered into settlement discussions with several utilities.

In separate litigation, ten utilities have filed claims for damages. In the first three cases the Court found that the Department had breached its contracts, and the Department is now engaged in determining the amount of damages owed to these utilities. The other Court of Claims cases are in very preliminary stages with potentially years of litigation still ahead. As indicated by the Justice Department in its testimony before this Subcommittee on February 10, the damages being sought by the ten utilities before the Court of Claims could total $8.5 billion. This is more than the existing balance in the Nuclear Waste Fund and is roughly 85 percent of the remaining cost to open the repository in 2010. Potential claims from other utilities could be many times this amount.

The Justice Department also stated that a decision on whether payments for these judgments would come out of the Nuclear Waste Fund is still pending. Should it become necessary to use the Fund to pay these claims, the Department's ability to complete the repository program would be in jeopardy. Ironically, claims against the Fund could also require a significant increase in the fee charged utilities to maintain the program, and could trigger yet another round of litigation and claims.

I also want to point out that several utilities have come and talked to us about their specific problems and proposed potential solutions. Some of these utilities have asked the Department to take title to their spent fuel onsite at their reactors.

ADMINISTRATION VIEWS OF H.R. 45

The Administration opposes H.R. 45, which would require the Department to begin accepting waste at an interim storage facility in Nevada no later than June 30, 2003. Making a decision now to put interim storage in Nevada is not the right approach. It simply does not make sense to transport spent fuel across country to Yucca Mountain until we have completed the scientific work and know where a final repository will be. Spent fuel is currently being stored safely at reactor sites, under U.S. Nuclear Regulatory Commission oversight, and can continue to be stored safely until a repository is open.

From a budgetary standpoint, enactment of H.R. 45 could also have several negative impacts on the repository program. First, it will add the cost of construction of an interim storage facility to the program budget, and it will advance the costs of transportation much earlier than now planned. Between now and the year 2010, we estimate that H.R. 45 would add approximately $1.5 billion to the total cost of the civilian radioactive waste program because of the additional cost of the interim storage facility. It would also require expending $2-3 billion dollars for transportation prior to knowing whether Yucca Mountain will be the site for a permanent repository.

In addition to these new budgetary burdens, and perhaps more significantly, H.R. 45 would not provide the Department or the Federal Government relief from the billions of dollars of potential damages likely to be awarded through litigation. By imposing new statutorily defined obligations and deadlines, H.R. 45 would also create the potential for new litigation if the Department were unable to meet these requirements or if it had the effect of altering the existing utility contracts.

As I stated in my introductory remarks, it is critical to many national goals that we develop the capability to permanently dispose of high-level radioactive waste and spent fuel. We believe H.R. 45 could seriously jeopardize our ability to carry out this effort. For these reasons, and because of the central fact that we have not completed the work necessary to make a decision to recommend Yucca Mountain as a permanent repository site, the Administration remains unequivocally opposed to the enactment of legislation requiring construction and operation of an interim storage facility at Yucca Mountain, and I would recommend a veto of any such legislation.

PROPOSAL TO TAKE TITLE ON-SITE

As the Subcommittee has requested, I would like to discuss the Department taking legal title to utilities' spent fuel at reactor sites until a repository is opened. Let me emphasize first that the Department is only at the beginning of the process of analyzing this approach and discussing it with the utility industry and other interested parties. However, it appears to be a practical option that would provide a near-term solution to utilities' spent fuel storage needs and would be relatively easy to implement. The chairman's invitation letter raised a number of specific questions such as how it would be funded, when it would be implemented, who would own and regulate these sites, and how it would affect the Department's contractual liability. These are all very important questions that the Department is in the process of answering, and many of those answers will depend upon the specific needs of individual utilities.

Let me discuss briefly some of the concepts we believe are appropriate to consider as part of that discussion. Conceptually, the Department could offer to take title to spent fuel consistent with our schedule for acceptance provided under its contracts with utilities. By taking title to the spent fuel, the Department could either assume financial responsibility for the utility's continued management of the spent fuel or possibly assume possession and responsibility for management of the spent fuel. We assume that utilities may have differing opinions on these alternatives, based upon their individual circumstance. For example, a utility with a permanently shut down reactor and no ongoing nuclear operations may want the Department to assume complete responsibility for the management of the spent fuel and storage facilities, while other utilities with operating reactors may prefer the Department only to take financial responsibility.

As part of an agreement to take title, the Department could agree either to reimburse the utility for the incremental cost of storing that spent fuel or to take a more direct role in the management of the spent fuel and storage facilities. We believe we could implement this proposal by modifying the existing contracts with utilities. We would still have to address a range of issues, including liability, financial and operational responsibilities.

While we want to hear from utilities and other interested parties on how taking title to spent fuel could most efficiently be implemented, our initial thoughts are that a continued reliance on the utilities to manage their spent fuel, rather than the Department, would be most practical and least intrusive on utility operations. Again, the purpose of initiating this dialogue is to better understand what the utilities think and to obtain other relevant perspectives on the issue. Under any approach, the Nuclear Regulatory Commission would continue to provide regulatory oversight of spent fuel storage activities at sites.

In return for the Department taking title and financial responsibility for the spent fuel, the Department would expect the utilities to terminate their litigation and claims; something that H.R. 45 does not address. This would end the uncertainty that continuing the litigation brings to all parties and ensure the continuance of a repository program. The potential cost of current litigation damages already places the repository program in jeopardy. If the Department is unable to proceed with a permanent solution, future costs could be even greater. Consequently, the cost to take title appears to be minimal compared to the potential cost of damages, which as I noted above could end up being assessed against the Nuclear Waste Fund.

The cost of taking title onsite would depend on the final arrangements worked out with utilities for spent fuel management. We have not done a detailed cost estimate. Our rough estimate is that it could cost up to $2 to $3 billion between now and 2010. That cost estimate assumes that we would take title of the fuel in accordance with our contract acceptance schedule. There may also be ways in which these costs can be reduced. For example, one of the major costs of continued onsite storage is the cost of dry storage casks. It may be possible to consider federal purchase or lease of these casks. Here again, we need to hear from the industry on their views on how we can best address these issues.

Funding for the DOE to take title on-site could be achieved through a variety of means, ranging from deferral of ongoing spent fuel disposal fee payments, to direct reimbursement for costs incurred, to advance payments for anticipated costs. As with other program costs, payments could come from a mix of Nuclear Waste Fund balances, current payments, or appropriated funds. Again, we need to hear from the industry on their views of payment and funding options.

PROGRAM FUNDING REQUIREMENTS

As we continue to discuss and develop the specifics of a take title alternative to centralized interim storage, we need to take a serious look at how such a proposal would be paid for without imposing undue burdens on either utility ratepayers or the taxpayers. I also want to analyze further proposals that would ensure that the revenues raised by the nuclear waste fee remain available to complete the job of safe management and disposal of nuclear waste.

Both the Administration and the Congress have been aware for some time that the overall constraints of the federal budget process have the potential to limit the availability of funding for the nuclear waste program in the out years. Therefore, I would like to work together with the Congress to assure the repository program continues to be adequately funded. If the Yucca Mountain site is found suitable, it is critical that funding is available after 2001 to meet our obligations as program demands increase and to ensure our ability to meet a date certain for disposal of waste.

In exploring any funding alternatives, I want to preserve the two important objectives I mentioned above : (1) that we do not impose undue burdens on either utility ratepayers or the taxpayers; and (2) that the revenues raised by the nuclear waste fee remain available to complete the job.

CONCLUSION

Mr. Chairman, we are reaching the conclusion of our site characterization effort. We know technical questions about the site remain. We need to finish our scientific and technical work. Ultimately, it is not only the Department of Energy, but also the Nuclear Regulatory Commission (NRC) that will need to pass judgment on whether a repository can be constructed and operated safely. Therefore, in completing the remaining work at the site, we need to ensure that we have an adequate technical basis to support a rigorous NRC licensing process. This will require a continued and sustained effort over the next couple of years. However, the completion of the characterization effort is in sight.

I know that you and many other Members of Congress are frustrated because we have not accepted spent fuel and want to be responsive to utilities and state regulatory commissions that have had to deal with additional spent fuel management responsibilities. I want to reiterate the Administration's view that enactment of interim storage legislation is not the solution. Shipping 10,000 metric tons of spent fuel to Yucca Mountain, as proposed in H.R. 45, is inconsistent with the process and principles established for making a decision on the permanent disposal of our Nation's spent nuclear fuel.

I ask this Subcommittee *not* to proceed with adoption of interim storage legislation and to work with me to fashion a more practical solution. This legislation would place significant additional financial, programmatic, and legal liabilities on the Department's civilian nuclear waste repository program. It would prejudge the selection of Yucca Mountain. And it would not resolve the billions of dollars in claims arising out of the delay in accepting utility spent fuel. We need to address the utilities' spent fuel problems, and I believe that we are at a point where there is a genuine opportunity to explore alternatives.

Mr. BARTON. Congressman Shadegg has an airplane to catch in 35 or 40 minutes. We will recognize Mr. Shadegg for 5 minutes; then we will go to Mr. Dingell, Mr. Bliley, and then go in regular order with Mr. Hall and myself.

So Mr. Shadegg is recognized for 5 minutes.

Mr. SHADEGG. Thank you very much, Mr. Chairman. And thank you, Mr. Secretary, for being here. As I indicated in my brief opening remarks, I was in fact a week ago today at this very hour at Yucca Mountain looking at the facility there and discussing with the people there their progress, the ongoing specific work. Indeed we looked at their ongoing work to assess the effects of water and the movement of water through the rock.

We looked at their ongoing scientific work to assess your second point, the effects of water on the containers and the effects of heat, and as a matter of fact, saw their current demonstration which simulates what the heat, which would be produced by the stored fuel, will do to the rock and what it is doing to the rock as they simulate that heat.

I take it that when you say that we are, in your testimony, "on track" and you say this at page 2—excuse me, page 3 of your testimony, in the second full paragraph, we are on target to decide in 2001 whether Yucca Mountain is suitable as the location of a repository, you are saying we are on target with regard to that specific work; is that correct?

Mr. RICHARDSON. That is correct, Congressman.

I believe that this scientific work which is done by excellent scientists from labs from around the country—and by the way, certified by many scientific boards; and if there is dissension, we have

always been prepared to fund others from universities that might have an opposing view. We are optimistic that under our current schedules we can meet the deadlines. The two key deadlines are a decision on suitability in the year 2001 and to submit a license application to the Nuclear Regulatory Commission in 2002.

Mr. SHADEGG. So you are not testifying to this fact, have there been any setbacks?

Mr. RICHARDSON. That is correct. In fact, the viability assessment—this is a scientific study, pure science, technical work that we submitted at the end of the year—basically said what you said in your statement, that we are continuing to study Yucca, that there are no showstoppers, that there is some water and other problems that we have to deal with before we make a final decision in 2001.

Mr. SHADEGG. I am glad you turned to the viability assessment, because it was my understanding that the administration's previous position was that as soon as we got the viability assessment, we could make these decisions and move forward and continue on track. And that now—at least to some of us, it appears like the goalposts are moving that although the viability assessment came in and said there are no showstoppers, there is still additional scientific work to be done and calculations to be made.

Nonetheless, there is nothing that stops our current planning; and I want you to explain to me why your proposal here today to look at this other issue, which concerns me greatly—the taking of title, the possibility of liability following that title, which I think is likely, and the additional cost—isn't a change of horses in midstream which will necessarily result in additional costs, quite frankly, I think, not to ratepayers but to taxpayers.

Because as I understand the court rulings and the positions of the various utility commissions. They are saying that the ratepayers have already paid for this, and any further delay is at the feet of the Federal Government, and it is going to be the taxpayers that will have to pay.

I guess my first concern is that by shifting to this alternative strategy, when the viability assessment came back as it did, aren't we in fact moving the goalposts and/or further delaying the process, and isn't that going to impact the taxpayers?

Mr. RICHARDSON. Congressman, we are not shifting the goalposts. What I did when I came into office was responded to many members of this committee and the Senate to enter a dialog with the Congress on how to resolve the problem. We had opposed interim storage, and we still do. We believe that that is not the way to go.

But what I have done on behalf of the administration is propose this alternative that we can jointly work together on. It is not perfect. It is not fully costed out. In fact, I wanted to hold off until I testified to see if there is interest in pursuing this dialog so that we can flesh out some of these remaining issues.

But in response to your question, this is not a policy shift. Our objective was in terms of determining the suitability of Yucca in 2001. We completed the viability assessment, but we also said additional technical work is needed to ensure that Yucca is suitable in 2001—if it is going to be suitable, a decision that we have not

reached. Afterwards, we proceed toward the licensing request in 2002, ultimately to have a repository ready by 2010.

Mr. SHADEGG. That takes me to the next question that I have before we will go into the title issues. If you are on target, as you say on page 3 of your testimony, to make the decision in 2001, what then is inconsistent with the provision within H.R. 45 that you would be required to accept waste in 2003 at the interim storage facility? It seems to me if you can make the decision by 2001 that Yucca is the suitable location, how then are we delaying or causing any damage if what we do is pass H.R. 45, which says that we are going to be accepting waste for interim storage in 2003?

Mr. RICHARDSON. Well, Congressman, I think what H.R. 45 does, which is why we oppose it, is it prejudges the final scientific decision on Yucca.

Second, it does not address, as I mentioned, the fact that our department, our government, all of us, have been sued, and we could lose millions of dollars.

And third, why do we want to transport this spent fuel to a facility that we have not decided on? So for those reasons, I think our policy decision is correct.

Mr. SHADEGG. I guess with the lead time that is required, it seems to me I didn't hear an answer to why we shouldn't pass this bill calling for the movement of waste there by 2003, if you are going to make your decision by 2001; but my time is expired, and so I will leave that to my colleagues to follow up on.

Mr. BARTON. The distinguished gentleman from Michigan, Mr. Dingell, for 5 minutes.

Mr. DINGELL. Mr. Chairman, I commend you for holding this hearing, and I thank you for recognizing me.

Mr. Secretary, let's summarize. You have here a potential liability of about $8.5 billion, which will grow by the amount that other utilities will add to that as they file suit under the Tucker Act and under other things for the failure of the Federal Government to act; is that right?

Mr. RICHARDSON. Mr. Chairman, that is correct. Ten utilities have filed claims in the Court of Federal Claims, seeking damages from $70 million to $1.5 billion, and totaling approximately $8.5 billion, so you are correct.

Mr. DINGELL. We do not yet know what the total amount of this growing liability will be, but it will be significant.

So then would it be fair to say that an early settlement of these questions is very much in the public interest?

Mr. RICHARDSON. That is correct, Mr. Chairman.

Mr. DINGELL. Now, Mr. Secretary, the Department of Justice testified that if H.R. 45 were enacted, utilities could claim that it altered their existing contract rights; and then went on to say this, and I quote, ''This change could constitute another breach of contract for which they are entitled to damages.'' Is that correct?

Mr. RICHARDSON. That is correct.

Mr. DINGELL. Mr. Secretary, your lawyers are looking at whether, in the light of recent court decisions, H.R. 45 could give rise to additional lawsuits under the Tucker Act?

Mr. RICHARDSON. That is correct.

Mr. DINGELL. Mr. Secretary, I would assume you would agree with me that the last thing we need is another series of lawsuits to impair the processing of this program and to impair the potential funding which would come from the Nuclear Waste Fund; is that correct?

Mr. RICHARDSON. That is correct.

Mr. DINGELL. Now, Mr. Secretary, you have indicated you have not come to a clear decision as to whether or not the Nuclear Waste Fund should be used to settle up damages that might occur or to address the cost of the lawsuits. Is that a fair statement?

Mr. RICHARDSON. That is correct. The Justice Department is studying the question. We don't know whether the funds would come from the waste fund or from our own budget.

Mr. DINGELL. Is it fair to say, Mr. Secretary, that the department does not have funds to build both an interim storage facility and keep the permanent repository program on track?

Mr. RICHARDSON. We do not have the funds to do both. This is why we have taken the position we have.

Mr. DINGELL. You are making that statement very clearly, that you do not have funds enough?

Mr. RICHARDSON. We do not have the funds.

Mr. DINGELL. And Mr. Barrett had indicated in earlier testimony the bill would undermine, and this is a quote, would "undermine the ability to open the new repository, as scheduled, in 2010." Do you concur with that statement?

Mr. RICHARDSON. I concur.

Mr. DINGELL. Can you give us any estimates as to how long the repository would be delayed under those circumstances?

Mr. RICHARDSON. Well, we believe that it would be inordinately delayed. It would be a substantial period of time.

Mr. DINGELL. Do you want to submit the answer to that, your best answer to that for the record, Mr. Secretary?

Mr. RICHARDSON. Well, my experts in the back here are telling me that it would severely cripple the facility and it would delay it extensively.

Mr. DINGELL. Mr. Secretary, if we were to come up with a settlement of this problem, and I want to make it very clear, I strongly favor the resolution by legislation at an early time, but that would necessarily entail some—in your view, and I think in the view of the Federal Government—a forgoing of the rights to continue to litigate the claims that have already been asserted against the fund in the amount of some $8.5 billion, and growing; is that correct?

Secretary RICHARDSON. That is correct, Mr. Chairman.

Mr. DINGELL. Because otherwise we face the cost of all the work that has to be done and we would then be adding to that the cost of legitimate claims that have been adjudicated in the courts; isn't that right?

Mr. RICHARDSON. That is right.

Mr. DINGELL. Mr. Secretary, you have proposed a very interesting concept for processing some of the issues plaguing this program. I understand you are proposing that DOE assume the cost for storing spent fuel onsite until the waste can be taken to the permanent repository; is that correct?

Mr. RICHARDSON. That is correct.

Mr. DINGELL. Your testimony estimates that onsite storage by DOE will amount to some $2 to $3 billion between now and 2010; is that correct?

Mr. RICHARDSON. Mr. Chairman, that is correct. These are very difficult to estimate, given individual negotiations with each utility on their specific situation. But that is our best estimate—the rough estimate right now.

Mr. DINGELL. This is significantly less than the $8.5 billion in claims pending against the Department in the U.S. Court of Claims under the Tucker Act; is that right?

Mr. RICHARDSON. That is correct.

Mr. DINGELL. Am I correct in concluding that your onsite storage proposal could be used to settle these claims and a cheaper cost could be worked out than fighting it out in the courts?

Mr. RICHARDSON. That is correct.

Mr. DINGELL. Am I correct in assuming that one purpose is to help reduce the drain in the Nuclear Waste Fund in the unhappy event that it is determined that the fund can be tapped, and I want to say that it can be tapped, to pay damages on ongoing lawsuits?

Mr. RICHARDSON. That is correct.

Mr. DINGELL. This would preserve the Waste Fund to complete the repository for the permanent storage of these nuclear wastes.

Mr. RICHARDSON. That is correct.

Mr. BARTON. The gentleman's time has expired. Would the gentleman indicate approximately to the Chair how many more questions.

Mr. DINGELL. Mr. Chairman, you will be pleased to note I have just completed my questions.

Mr. BARTON. Well, that was very well done.

The Chair would recognize the distinguished full committee chairman, Mr. Bliley of Virginia, for 5 minutes.

Chairman BLILEY. Mr. Secretary, it is my understanding that the proposal to take possession of this material and keep it onsite, that there are a number of sites, either through State regulation or for lack of space, that cannot physically do this. What is your proposal to deal with that?

Mr. RICHARDSON. Well, let me say, Mr. Chairman, my proposal would be, let's take two utilities, two States that have voiced support for our approach, I think Con Edison of Illinois and the Wisconsin Electric. What we would do, Mr. Chairman, is, as I said, try to work out individual negotiations with each of these utilities. Perhaps an option would be to enter into a discussion with a utility to purchase or lease space, or find some way to accommodate the concerns of some of these utilities that don't have space.

The last thing we want to do is have an across-the-board solution that affects every utility but does not respond to their individual needs.

Chairman BLILEY. You know, talking about taking permanent possession in 2010, how much is this request going to cost? Assuming that you get the go-ahead when you finish all of your studies in 2001 and you get your license in 2005, how much is it going to cost to build the facility out and to begin to take possession or to take possession in 2010?

Mr. RICHARDSON. Mr. Chairman, we don't have all the answers today, but, in concept, this is how we believe it would work. The costs would be up to $2 billion to $3 billion between now and 2010. No. 2, the funding could be done by deferring fee payments or direct reimbursements for cost. We would take title consistent with our contract acceptance schedule.

In other words, nothing new would change there. We could have utilities manage the facility or we could assume responsibility. These are details that we would want to work with this committee and with the utilities on how we can formulate this more effectively.

Chairman BLILEY. Well, it is my understanding that you need about $10 billion to construct the repository.

Mr. RICHARDSON. That is correct, about $10 billion.

Chairman BLILEY. And that you are receiving about $370 million a year, which would mean that you would have about a $6 billion shortfall.

Mr. RICHARDSON. Yes, the appropriation, your appropriations figure is correct.

Chairman BLILEY. Well, how do you propose to get from $4 billion to $10 billion?

Mr. RICHARDSON. Mr. Chairman, what we estimate, the construction of Yucca, the $10 billion is up to the point of opening. That is the figure that we have.

Now in terms of budget numbers, a lot of it depends on whether we bring the repository into operation. We cannot estimate the total cost between now and 2010 until we deal with the issue of suitability. Both the administration and the Congress have been aware at the time of the overall constraints of the Federal budget process and how that has the potential to limit the availability of funding for the nuclear waste program in the outyears.

In other words, Mr. Chairman, I can assure you of funding until 2002 with very solid projections. Beyond that, I think we have to work very closely together to determine what it is going to cost us in the outyears.

Mr. BARTON. Would the gentleman suspend?

We put this chart up. We have given you a copy of the chart, Mr. Secretary; and we are handing out copies to the members of the subcommittee.

The red line on that chart shows the historical funding profile from the appropriation committee, which is about $370 million a year. The bars by year are the Department of Energy's estimate for Yucca Mountain in terms of annual funding. It is obvious that, beginning in the year 2003, according to the most recent information that we have from the Department, that the funding request to build the repository, if it is built at Yucca Mountain, exceeds by orders of magnitude the funding that is going to be available.

Now those are not committee numbers. Those are official Department of Energy numbers. So we are going to have a funding problem regardless of the solution.

The chairman has just laid it out very well. The gentleman from Michigan, who left after asking his questions, asked you a similar question. So one of the things that we need to come out of this hearing, Mr. Secretary, is an acknowledgment that, whatever the

solution is, the permanent repository is going to require a change in strategy about funding. We cannot keep putting $660 million into the nuclear waste fund, take out $150 million, spend the rest on other Federal programs, and then wonder how we are going to pay for the repository. Do you agree with that?

Mr. RICHARDSON. Yes, I am here to acknowledge that.

And the chairman's question is well taken. Both the Congress and the administration entered into budget agreements that would necessitate that, after the year 2002, whether we go our interim storage way or your interim storage way, we are in the outyears going to most likely look at additional funding needs for Yucca. There is no question about that.

Mr. BARTON. I am going to——

Chairman BLILEY. I am finished.

Mr. BARTON. Before I recognize Mr. Hall, let me ask one question.

Mr. Secretary, we need specific proposals from your Department on this. We cannot wait until 2003. I mean, I do not expect you to put it on the table this second, but in the next week or 2 we would really like some proposals on how to fix this. Because this subcommittee, we are not sure exactly the parameters of the legislation that we are going to move, but we fully intend to move a bill within the next week or 2. So it would be nice—we will incorporate and work in a cooperative, bipartisan, executive-legislative branch way on this problem. And as far as I am concerned Mr. Secretary, any approach that your Department put on the table we will look at in an open way.

Mr. RICHARDSON. Well, Mr. Chairman, I welcome that. Because I told my staff that I did not want to come up to this committee hearing, which, as I understand it, would take the first step before the other body in dealing with this issue, and appear to have submitted a proposal fully fleshed out without consulting with you. So I welcome this ability to take a look at our proposal and see if we can flesh it out more and deal with the funding issues.

But I will say to you I think you summarized it well. We are going to have a problem on the funding issue, in the outyears, regardless of what position we take. We are ready to work with you on that and also on other issues. If you are ready, Mr. Chairman, to engage in a dialog on how we can flesh that out better, that is our proposal. We would be pleased to do that.

Mr. BARTON. The Chair would recognize Mr. Hall for 5 minutes.

Mr. HALL. Thank you.

Mr. Secretary, the U.S. Court of Appeals and the Court of Federal Claims has been pretty clear, I think, in pointing out DOE's unconditional obligation to remove the spent fuel from utility sites. How does your proposal to take title to it at the sites—how does that meet that obligation?

Mr. RICHARDSON. Let me deal with this this way——

Mr. HALL. And to make it a little easier for you, won't your proposal have the effect of creating I think, as you pointed out in your testimony, 72 de facto Federal spent fuel storage sites in 33 States? And wouldn't that constitute an endorsement by the Federal Government of what a lot of people think is an ill-conceived notion to simply leave the spent fuel at utility sites indefinitely? And what

are we going to do about those people that have no more storage at these sites?

Mr. RICHARDSON. Congressman Hall, you are right. There are 72 reactor sites located in 33 States. Ten of these States have dry cask storage facilities in addition to pool storage—South Carolina, Maryland, Virginia, Ohio, Michigan, Minnesota, Arizona and Wisconsin.

My proposal, our proposal, what we are advancing here is consistent with environmental law. The Nuclear Regulatory Commission licenses these facilities. The utilities have done a good job of keeping these spent fuel casks or pools safe.

Now, our proposal, Mr. Hall, says this. It does not make sense to transport spent fuel around the country until we complete the scientific work and know that Yucca is going to work. We, again, think that spent fuel is currently stored at these sites in a safe way. We can continue to keep these safely stored until we open a repository.

I mention again, they are operated and licensed and regulated by the Nuclear Regulatory Commission. Most of these reactors have dry cask storage facilities on their site. They have licenses specifically for storage of spent fuel. The take-title proposal is not a permanent solution. It is a temporary solution, a near-term solution that addresses our contractual obligation to utilities. It is practical. It would be safe to implement.

And I worry because like I know you do, Congressman Hall, in the first three cases decided by the court dealing with shutdown reactors, the Department was found to breach its contract. We lost $288 million. We haven't lost it yet, but the court claims said that this is the amount claimed.

What I want to do is find a way to take title, take responsibility, take liability and have the utilities stop suing us, to resolve these disputes by the utilities taking back their lawsuits. We are all liable here. Whether it is the ratepayer using the Nuclear Waste Fund to pay for what we are doing, or it comes from appropriations.

Mr. HALL. Well, I think you are very logical in being concerned about the litigation, because it is piling up on us. And it seems to me that an interim storage facility, though, at Yucca Mountain might help you settle those lawsuits or at least it might limit the period during which the committee is in breach of a contract. It would seem like that would be a help to you. Why wouldn't it?

Mr. RICHARDSON. Well, Congressman, because the legislation does not say that the utilities have to drop their lawsuits. It does not address it, and they continue to sue us. The utilities—only a few have approached us and wanted to settle—they see the courts moving their way, and they are not settling.

I don't want this country or the Department of Energy or the taxpayer to have to pay for this. We have acknowledged our slowness in delivering. Now, it is important that we correct the problem, and I think our proposal deals with that problem. In H.R. 45, one still has to pay damages, and we do not think that that is in the best interest of the taxpayer.

Mr. HALL. Thank you.

Mr. BARTON. The Chair would ask unanimous consent that the gentleman from Texas be given 1 additional minute.

Mr. HALL. Thank you, I will take another.

Are you optimistic about being able to reach a settlement with the utilities that have filed suits? And if you do, what authority are you going to need in this act or in an act from Congress to be able to effect settlements? I mean, you are going to have a settlement of some type; and if you can mitigate it as much as possible, you will be doing us a great service. Or maybe your lawyers are still studying this.

Mr. RICHARDSON. Congressman Hall, we want legislation. We believe we cannot act on what I have advanced without legislation. And we would want, if legislation is ultimately drafted to basically limit or terminate the utilities' ability to sue the government if we are going to take title.

If we have H.R. 45 and it passes, Congressman, we will still be liable. We are now liable at $288 million. These are the first three cases decided by the court. Ten utilities have filed claims seeking damages anywhere from $1.5 million to $70 million, totaling $8.5 billion.

Let's assume the courts rule in favor of all the utilities. We have dissipated the Nuclear Waste Fund. So one of the reasons that we have advanced this proposal is to eliminate the enormous liability that we all face.

Mr. HALL. I thank you, Mr. Chairman.

Mr. BARTON. The Chair recognizes himself for 5 minutes.

Mr. Secretary, let's kind of cut to the chase here. I have got a number of questions, but Congressman Hall just asked a very good question, and you answered it I think in a fairly good way. If we were to include liability limitation for these liabilities in this legislation and work out the funding problems, would the administration remove its veto threat?

Mr. RICHARDSON. Mr. Chairman, we still have the problem of moving the waste, transporting to the site. We still have the issue of not having completed the scientific work at Yucca, suitability in 2001.

Mr. BARTON. I understand that, Mr. Secretary. We are talking about an interim solution while we work on the permanent repository. I am not asking you to stipulate before the fact that the repository permanently is going to be at Yucca Mountain, because the scientific data is not in. This is an interim bill.

Now, we are closer than you think. We both agree, the administration and the Congress has agreed, there needs to be an interim solution. The Congress' interim solution is to consolidate the waste in one location. The administration's interim solution is to take title at 72 locations, or however many locations there are. Neither side is saying there shouldn't be an interim solution. We are just arguing over where it should be.

Now, according to the Departments's own numbers, the in situ take-title solution costs $2 billion to $3 billion. The consolidation in one location solution costs $1.5 billion, according to Department numbers, plus transportation. But the transportation number is, in a way, a phantom number because you are going to transport at some point in time to a permanent repository. So I don't necessarily agree that that ought to be included as part of the calculation.

So, again, this should be a solution hearing, or it could be. I want it to be, and I think you want it to be. So if we work on what Mr. Dingell was talking about and Mr. Bliley and Mr. Hall, we can work out this funding profile problem, which I think we can. And if we can work out the problem that you have repeatedly enumerated in your testimony about liability because the Department has not taken title, I think we could get a bipartisan agreement to put some sort of a limited liability section in the bill.

But my position is going to be we cannot do that if we do not get a veto threat revocation. There is no reason, quite frankly, for us to agree to what you are wanting—not you personally, but the administration—if you are still going to veto the bill.

Mr. RICHARDSON. Well, Mr. Chairman, we still have to let science dictate whether Yucca is suitable——

Mr. BARTON. And we are not——

Mr. RICHARDSON. [continuing] and that has not happened. I have got my scientists right here. All they do is study this issue. And Congressman Shadegg was there with them. That is all they do. They told me that they cannot make the decision until 2001.

So what I am saying is our proposal to take title is an interim solution that would cause minimal problems, would remove our liability, would keep the Nuclear Waste Fund intact, and would also, in our judgment, protect the public. These are NRC licensed facilities. I don't think it is fair to characterize our proposal is having 72 sites. These sites are already there. They are properly licensed.

Mr. BARTON. But by your own testimony there are 72 sites.

Mr. RICHARDSON. That is where they all are right now.

Mr. BARTON. We want to put it in one place. You want to put it in 72 places.

Mr. RICHARDSON. Mr. Chairman, under your proposal we have to transport in 33 States. All of them going straight to Yucca. That is an additional cost.

Mr. BARTON. Well, you are going to have to transport it at some point in time to a permanent place. You agree with that?

Mr. RICHARDSON. Yes, but why do it twice before you know whether or not Yucca is safe? We don't know that yet.

Mr. BARTON. I don't want to use up all of my time, but what I just put on the table is a real deal, but you have got to put something on the table, too.

Mr. RICHARDSON. Well, I did. And, Mr. Chairman, I think, assuming the utilities are going to come all of a sudden and say we are going to drop all the lawsuits——

Mr. BARTON. Now, we haven't even talked to them about that, but we can. It is possible. The first amendment gives me the right to talk to utilities, and they can talk back to me.

Does the administration support a permanent repository beginning to take waste by 2010? Is that a goal of your administration?

Mr. RICHARDSON. Yes, to open it by 2010, a repository, yes.

Mr. BARTON. Okay. You do support that?

The Chair would ask unanimous consent for 2 minutes to run through some math.

Mr. SHIMKUS. New math or old math?

Mr. HALL. Who are you asking?

Mr. BARTON. I am asking the committee. My time has expired, and I would like 2 additional minutes to run through some math. Okay. The Chair is recognized for 2 additional minutes.

I want you to get your pen and pad of paper there, Mr. Secretary; and any members of the subcommittee that want to follow along are welcome to.

The Department of Energy's number for the permanent repository construction is $10.7 billion. So put $10.7 billion down. The Department of Energy's interim number based on H.R. 45 is $1.5 billion. Put that down. That adds up to $12.2 billion. The Department of Energy's number for interim transportation charges is between $1 and $3 billion. So we will put the bigger number, we will put $3 billion. That adds up to $15.2 billion. Is that what you get, Mr. Secretary?

Mr. RICHARDSON. Well, Mr. Chairman, you added an extra billion there on mine. We estimate it will be $2 to $3 billion.

Mr. BARTON. I am talking the interim, not your onsite. I am talking if we do the interim location under H.R. 45. Your testimony says it will cost about $15 billion. So that gives us $15.2 billion. Now, we are taking in $660 million a year in the nuclear waste fund. Multiply that times 12 and you should get $7.92 billion. Is that what you get?

Mr. RICHARDSON. Well, not as rapidly as you did, but I will take your word for it.

Mr. BARTON. Okay. We have $8 billion in the fund. So if you add $8 billion to $7.9 billion, you get $15.9 billion. Is that what you get?

Mr. RICHARDSON. Yes.

Mr. BARTON. Is $15.9 billion a bigger number than $15.2 billion? Is it, Mr. Secretary?

Mr. RICHARDSON. It is bigger.

Mr. BARTON. Okay. Then I will stipulate, Mr. Secretary, that if we work together on the funding problem, we can come up with a solution to build the repository and locate an interim storage facility within the nuclear waste fund. And if we can do that, we can go to the utilities and work with them on a legislative solution to your liability problems that you put on the table.

Mr. RICHARDSON. Mr. Chairman, you are still proposing that spent fuel be moved to Nevada and that a decision be made in advance of a suitability decision.

Mr. BARTON. The chairman is saying—you will agree, though, that the math works?

Mr. RICHARDSON. Mr. Chairman——

Mr. BARTON. A simple yes or no?

Mr. RICHARDSON. Right at this moment, your math is a little better than mine.

Mr. BARTON. All right. The Chair would recognize Mr. Markey for 5 minutes. Thank you, Mr. Secretary.

Mr. MARKEY. Thank you, Mr. Chairman.

Now there are a lot of variables here. As we know, the more the free market principles hit the nuclear industry, the more likely that these nukes are just going to shut down and shut down soon so that their contributions to the nuclear waste fund is not going to be as significant over a 12-year period. So there are a lot of vari-

ables here, including what we do on electricity restructuring and what a lot of the individual States do.

Now, Mr. Secretary, I remember when Newt Gingrich used to say that Bob Dole was the tax collector for the welfare State. And it seems to me that we have got pretty much the same situation in our committee right now, and it results from the fact that the Budget Committee and the Appropriations Committee apparently views the Commerce Committee as the tax collector for their energy and water pork barrel projects for their members on their committee.

Because, in other words, there are goals set by the Budget Committee that are imposed on the Appropriations Committee which keep spending caps as low as possible. Then the appropriators have to raid the waste fund in order to pay for all of the water projects that are out in the Appropriations Committee members' districts. And so that red line that goes across is the line which is set by the Appropriations Committee, notwithstanding the good work which is done by the Commerce Committee in establishing a program that would generate significantly more revenues to be able to deal with the problem.

Now, of course, I don't think that most of these water projects that are built are in our districts. And I understand the way the game is played, and I don't like being the tax collector for the Appropriations Committee. That then doesn't solve our problem but results in lawsuits being brought by utilities saying that our law does not work because what we should be doing is declaring war on the Appropriations Committee and bringing bills out on the floor demanding that they stop creating conditions which make it almost inevitable that utilities are going to sue the Department of Energy because we have given them an impossible act to fulfill.

You know, if the aviation committee came in here and testified—if the aerospace industry came in here and testified 15 years ago that it was absolutely possible, as the utility industry did on nuclear waste to bury it safely, that it would be possible to have commercial travel to Pluto by the year 2002, and then we went ahead with this program and they signed up 100 million people with nonrefundable tickets and we somehow or other couldn't build spaceships to Pluto by this time, they would sue us to collect on the nonrefundable tickets which they had contracted with all their consumers.

So here we are now depending on the electric utility experts who testified in 1979 that we could build a permanent repository and pass legislation, and it was to, of course, undertake the goal of performing an impossible act in such a period of time. So impossible, by the way, that we picked Nevada. We picked Nevada in this committee in 1988. Let us not forget that. To make it even more impossible. We picked it. We picked Nevada. Not the experts, not the scientists, the committee, us.

We thought it should be in Nevada mainly because they only had one Congressman and two Senators at the time. We pulled the thermonuclear Queen of Spades right out of our pocket. Now we are getting sued. And, of course, the appropriators say, by the way, we are not even going to give you all the money that you were in-

tending on raising for this project; and good luck, Mr. Secretary. Try to solve this problem for us.

So I think what we have to do here is look at a bill that Mr. Upton introduced about 3 years ago that would solve this funding problem. Do you remember that bill, Mr. Secretary? Would you recommend to this committee that we pass Mr. Upton's bill? Do you think that would be advisable?

Mr. RICHARDSON. No.

Mr. MARKEY. You don't?

Mr. RICHARDSON. We would oppose it.

Mr. MARKEY. The Upton bill that dealt with the funding issues. Are you familiar with that bill?

Mr. RICHARDSON. Is that H.R. 45?

Mr. MARKEY. No, not H.R. 45. Another bill that was submitted, H.R. 1174.

Mr. BARTON. The gentleman's time has expired.

Mr. RICHARDSON. We would oppose it.

Mr. MARKEY. You would oppose that bill, too? Thank you.

Mr. BARTON. We appreciated that monologue.

Mr. Burr is recognized for 5 minutes.

Mr. MARKEY. Can I ask unanimous consent for an additional 2 minutes?

Mr. BARTON. You may.

Mr. MARKEY. I thank you, and I very much appreciate it. I have got to get these things off my chest.

Mr. BARTON. Is there objection to the unanimous consent request for 2 additional minutes?

Hearing none, the gentleman from Massachusetts is recognized. We hope that there will be a question in this next 2 minutes.

Mr. MARKEY. There will be. As you know, most congressmen's questions come in the form of answers, so that is a problem for each of us.

Now, the radiation release standards that EPA established for the waste repository in New Mexico set a limit of 15 millirems a year for the most exposed group. H.R. 45 would set it at 100 millirems a year for the average person in the vicinity of the site. Do you think there should be a lower standard for people in Nevada than there is for people in New Mexico in terms of their exposure?

Mr. RICHARDSON. Congressman, we are right now working with EPA to set that standard. The final determination has not been made.

In principle—as you know, I sat on this committee—no citizen from any State should be treated any differently than any other State. But, again, this requires a balance, internal dialog that is going on between the agencies. There have been different approaches by the various agencies. These are very technical issues that involve a number of standards. What we want to do is have a geological disposal decision to protect our natural resources and our people.

Mr. MARKEY. In principle, should they have the same standard, though?

Mr. RICHARDSON. The site in New Mexico is a transuranic waste site. The site in Nevada is different. But, in principle——

Mr. MARKEY. We are only talking about exposure to radiation, not the place in which the radiation is stored. Do you think there should be a similar standard?

Mr. RICHARDSON. Let me say, Congressman, that I think that it is very important that we not treat any citizen differently than others. These are different sites. You have to give me that qualification. New Mexico's site, the WIPP site, which gives me more problems than this site, is transuranic waste site. This site is high-level waste. EPA certified the New Mexico site. We agreed to open the New Mexico site after strict EPA standards. Those EPA standards were advanced last year. For some reason, the State of New Mexico keeps providing obstacles that prevent the site from opening.

Right now, we are working on an EPA standard for Yucca. There are a lot of scientific, technical issues that we have to determine, that we have to decide we want to have an interagency process. We are having it right now. But I think that reflects the balance of different agencies. DOE does science. EPA looks at the environmental protection issue. We want to look at public safety. We want to look at health issues. But, in principle, no citizen is different than——

Mr. BARTON. I think we have heard the Secretary on that issue.

The Chair would recognize the gentleman from North Carolina for 5 minutes.

Mr. BURR. Thank you, Mr. Chairman. I actually found some similarities between a spaceship to Pluto and a permanent repository.

Mr. Secretary, let me walk through what I have heard you say on the proposal for taking title. You tell me whether this is, in fact, correct.

You are proposing to use the ratepayer money that is in the fund to fund the transfer of the title to leave the spent fuel at 72 sites around the companies if the companies will agree to waive their current or future litigation to save the American taxpayer money.

Mr. RICHARDSON. That is correct.

Mr. BURR. Mr. Secretary, I have got to tell you that the disconnect between ratepayer money and taxpayer money—I mean, this is a right- and left-hand thing. I have got to tell you personally, and this is not directed toward you but toward the Department, I think the bar is being raised. I think the testimony from the Department of Energy in the past did say, when we finished last year's report, which came out, it would send us to firming up a decision. And I think that, in fact, the decision to move to 2001 now is inconsistent with the Department's testimony in the past.

But let me move past that. Mr. Bliley asked you a question relative to the current storage capabilities that exist onsite. In many cases, companies are past their capacity; and I think you said we will work this out. Let me ask you, do you see in that Federal condemning of land to be able to increase the storage sites at these facilities?

Mr. RICHARDSON. No. I would see a negotiation with States or utility to secure land. No, I don't envision a hostile negotiation. We would want to respond to the needs of each individual taxpayer or utility.

And, Congressman Burr, let me just tell you that I think there is not that much difference between the ratepayer and the taxpayer. When we are sued—and I mentioned that it is $288 million

that we are now—we have lost cases; and if it goes to $8 billion, it is uncertain whether this money, from the Justice Department's vantage point, should come from the Nuclear Waste Fund or from appropriated funds or our budget. S so either way the taxpayer is vulnerable.

Mr. BURR. Would you acknowledge the fact that if you increase the size of a storage facility that it has an effect on the property values in a given area?

Mr. RICHARDSON. I think——

Mr. BURR. Let's put safety aside for a second. It impacts an area, doesn't it? It impacts an area through land value and impacts an area because there is no local tax on Federal——

Mr. RICHARDSON. Congressman, all we are talking about is possibly a transfer of paper that gives title to the Department.

Mr. BURR. So would the Department take all spent fuel onsite?

Mr. RICHARDSON. Yes.

Mr. BURR. One hundred percent of it?

Mr. RICHARDSON. No, no, we would take title to the fuel destined for Yucca.

Mr. BURR. So how would we manage where DOE has responsibility for maintenance of part of the fuel in a storage facility and the company has responsibility for the other part, which means that you have got dual licensing in the same storage facility?

Mr. RICHARDSON. You have to work it out in each case. You have to—in accordance with our specific contract with that utility. We have individual contracts and schedules with each of these utilities. This is something you work out. This is something that, with the standards on the safety, you work out with the NRC. You work it out to make sure that what we are talking about, which is—I almost can tell you that, in most cases, would be a paper transfer. For if it is not—let's say Wisconsin, I have not thought it through, but what we would envision is perhaps working something out where the utility people that have done this——

Mr. BURR. But you would have to have a license because you held title with the Nuclear Regulatory Commission, wouldn't you?

Mr. RICHARDSON. It is already licensed. These facilities are already licensed.

Mr. BURR. They are licensed to the company.

Mr. RICHARDSON. By the NRC.

Mr. BURR. To the company.

Mr. RICHARDSON. To the utility.

Mr. BURR. You take title from the utility who needs a license for that spent fuel; right?

Mr. RICHARDSON. Yes. Well, the utility would maintain this.

Mr. BURR. The utility would maintain, but the license is going to be in the name of the person who holds the title, isn't it?

Mr. RICHARDSON. No, no, not necessarily.

Congressman, you know I advanced this proposal about 10 days ago. Maybe it is a little longer. It is complicated. You have all been dealing with this issue for years and you challenged me to come up with an alternative and not say that we are just going to veto H.R. 45. I have done that.

My proposal is not perfect. It needs to be costed out. We need to talk to the utilities. But they are holding back until they get a sig-

nal from you whether you are interested in my proposal. Because I would think they would prefer H.R. 45, they can continue their suits and their problem is taken care of. Our problem is not taken care of, the ratepayer, the taxpayer, the Department of Energy.

Mr. BURR. Two yes-or-no answers, because my time has run out.

Mr. BARTON. Would the gentleman yield on his expired time on that point?

Mr. BURR. I would be happy to.

Mr. BARTON. Mr. Secretary, you keep telling us that you are trying to enter a dialog. We appreciate that, and you are entering a dialog. But we cannot act on dialog. Are you prepared to say you are going to produce a legislative proposal as an alternative for this subcommittee to look at?

Mr. RICHARDSON. Well, I am the Secretary of Energy. I have said there is an alternative. I have kind of indicated I kind of like it. If you are ready to work with me on legislation in the direction that I am talking about, of course I am ready.

Mr. BARTON. Well, we are ready to see a legislative proposal that has your stamp of approval on it.

Mr. RICHARDSON. Well, I don't know how much clearer I can be.

Mr. BARTON. You could, actually.

Mr. RICHARDSON. We will take title of the spent fuel. We want the utilities to drop their suits. We could pay for this from the utility fund. We would negotiate with each utility if they have a storage problem. You have to give us flexibility to negotiate it.

Mr. BARTON. Let me give you a legislative primer, Mr. Secretary. It is obvious that you have been out of the legislative arena so long that you have forgotten. But you get a Democratic Member of Congress, preferably on this subcommittee, you talk to them, they call the Office of Legislative Cunsel, they actually put words to paper, title of the bill, section 1, findings. We have something in writing we can look at. Okay?

You are a good man. You put good ideas out. We cannot vote on the ether of good ideas.

Does the gentleman from North Carolina wish additional time?

Mr. BURR. Two quick yes-or-no questions. If in 2001 scientific proof is that Yucca Mountain is a suitable place for permanent storage——

Mr. RICHARDSON. Is or is not?

Mr. BURR. Is—would the Department of Energy be willing to then set up an interim storage facility for spent nuclear fuel and defense waste at a Yucca Mountain site?

Mr. RICHARDSON. No, because we have to abide by the legislation. The Nuclear Waste Policy Act is very clear on its goals. We still have to continue taking a number of safety measures. We have to continue ensure funding—you have pointed out the funding problem. We cannot have various solutions here. We believe the ultimate objective should be to site a facility in—in other words, open it up.

Mr. BURR. So even if the decision is made that Yucca Mountain is a permanent place, you would never see endorsing Yucca as an interim storage facility?

Mr. RICHARDSON. That is a speculative answer that I would have to give you, Congressman. I think we have to look at—what I want to avoid——

Let me also say this to the chairman, because I think he has been very gracious. I don't want to have a legislative train wreck on this issue. I want us to see if we can resolve it. Maybe it takes a little more time to enter into a dialog. I don't want to just put forth a bill and you all vote against it and do your bill.

This is your choice. You are the legislative branch. I want to know if you are interested in exploring my proposal, the Department of Energy's proposal, and I am kind of getting mixed messages from this side sort of yes, although—and from you, I am getting a mixed message. And I would like to come back and continue this dialog, Mr. Chairman. I know you have to move toward legislation. I respect that. But what I don't want is another huge division. Because I can tell you we will oppose H.R. 45, and we will veto it. We will be exactly where we were before.

Mr. BARTON. Well, we are going to mark a bill up very soon, and it won't be H.R. 45 that is currently pending, but it will be similar, and it will be on paper. And if we can work with you, we can change it in a way that the administration finds acceptable.

The Chair would recognize Mr. Norwood.

Mr. NORWOOD. Mr. Chairman, before we start that clock, may I ask you a question? Are we going to have a second round of questions?

Mr. BARTON. If the gentleman from Georgia wishes, we will. Sure.

Mr. NORWOOD. Mr. Secretary, again, thank you for being here.

I want to ask you about this statement. The Department of Energy objects to the use of Yucca Mountain as an interim storage site because it was not based on objective, scientific-based criteria. Is that statement attributable to the Department of Energy? Is that a true statement?

Mr. RICHARDSON. Congressman, I don't know who said that. Did I say that?

Mr. NORWOOD. I am asking, is that the position of the Department of Energy, that interim storage at Yucca Mountain is not possible because you do not have science?

Mr. RICHARDSON. Well, yes, I would support that.

Here is my reasoning, Congressman. That we believe that it makes no sense to have a temporary site until you have settled on the final site; and, second, we have the transportation problem that we would have to deal with. So, in essence, yes. I believe that if I said that, along the lines that you discussed, I can support——

Mr. NORWOOD. That is the large part of the reasoning, lack of science?

Mr. RICHARDSON. Transportation and—no, not lack of science. Transportation and the fact that we do not believe you should site a facility temporarily until you have made a final decision on Yucca.

Mr. NORWOOD. Do you believe we cannot move nuclear waste, nuclear materials in this country safely?

Mr. RICHARDSON. I believe the Department of Energy has the safest and best achievable way of moving waste safely. I think we can. We have done it for years. We have done it in your area.

Mr. NORWOOD. Yes, you have; and they have in Britain and France. So the actual movement of goods through the transportation system is not a real problem. It is just a problem you don't think we ought to do it right now?

Mr. RICHARDSON. It is not the safety, Congressman. It is the question of why move it when you don't have to, not the safety issue.

Mr. NORWOOD. All right. Let me go over this statement again. The Department of Energy objects to the use of Yucca Mountain as an interim storage site because it was not based on objective, scientific-based criteria, and I read that over and over again. And here what it says and sounds to me like, the Department of Energy has decided to use Aiken, South Carolina and Burke County, Georgia and 70 other sites around the country as interim storage sites. That is how the words read to me.

When you made the decision not to do it there, you have made the decision to keep 72 interim storage sites, and part of my question would be, if science is part of the problem, do you have any other objective science-based criteria saying that it is the thing to do to leave it in 72 sites around the country? And if so, I would request a copy of that science.

Mr. RICHARDSON. Well, Congressman, the NRC, the Nuclear Regulatory Commission, which this committee oversees and which I think we all agree is good at safety and science, certifies that these sites, the storage, the pools, the casks are safe.

Mr. NORWOOD. So we are satisfied that we are very safe in the 27 sites?

Mr. RICHARDSON. Yes.

Mr. NORWOOD. But we can't possibly be safe in the Yucca Mountain site as interim storage?

Mr. RICHARDSON. It is not the safety issue. It is, I mentioned, it is why move it when you don't have to, and prejudge the same——

Mr. NORWOOD. There are good reasons why we probably have to. I won't belabor that, because I want to get quickly into an area which I think is probably a smoke screen, but it really interests me a great deal, and that is transmutation. High-energy accelerators can be used to convert spent fuel into waste with much shorter half-lives, maybe on the point of several hundred years.

Now, I am less interested in the half-lives than I am in the volume. When you are talking about using an accelerator for transmutation, what are you really talking about in volume? And my understanding is that you reduce the volume down to about 6 percent, and I wonder, is that a true statement?

Mr. RICHARDSON. You are really getting into the very detailed scientific areas, which I admit, but I will answer.

Mr. NORWOOD. I understand. It is okay. Look, let the guy , the scientist back there. But I may not want that.

Mr. RICHARDSON. Let me answer your question, Congressman. Under the appropriations act we are obligated to spend funds, $4 million, on research, on transmutation of waste. We think this is

intriguing research. We are going to do that, possibly at the facility——

Mr. NORWOOD. Unanimous consent for 2 more minutes, Mr. Chairman, so I can follow just this train of thought on transmutation.

Mr. BARTON. Without objection, 2 transmuted minutes will be added to your time.

Mr. NORWOOD. Get me the answer on volume reduction, because I think that is very, very important. If we can transmute—and it is a theory, it is a mathematical theory, is it not?

Mr. RICHARDSON. Yes.

Mr. NORWOOD. We don't know that we can do it, but I suspect that we can do it.

Mr. RICHARDSON. We don't know the answer to that, Congressman. We have got our best people at Los Alamos and at your facility nearby in Savannah that are working on that.

Mr. NORWOOD. I am sorry, Bill. Part of the question though here is, if you transmute the material, what is the difference in volume if you transmute the material, burn the material, if you will, as it is, versus burning the material after it could be reprocessed and made into mixed oxide fuel? Is there a large volume difference between burning it as is or burning after it has been reprocessed?

Mr. RICHARDSON. Congressman, I will ask my scientist to answer that question, as long as he just sticks to the science and leaves the policy and the politics to me.

Mr. NORWOOD. Here is where I am going, Mr. Chairman.

Mr. BARTON. Would the gentleman yield just a second on that point? The Chair would ask unanimous consent, before we get the answer to the question, to put into the record a technical paper entitled ''Accelerator-Driven Destruction of Long-Lived Radioactive Waste and Energy Production,'' i.e., transmutation, by Stan O. Schriber on behalf of the Los Alamos ATW team. And in this paper it states that it would take at least 65 years and cost $60 billion, and you would still have a high-level waste problem to deal with.

Mr. NORWOOD. Which the volume, I am asking the question, that makes the difference.

Mr. BARTON. Is there objection to putting this into the record? So ordered.

[The document referred to appears at the end of the hearing.]

Mr. NORWOOD. The other part of this for me is that if an accelerator can be used for transmutation, can that same accelerator, with alterations, I am sure, be used to produce tritium? And if that is true, then—well, there is a good point here—if that is true, then we can have a complete circle to eliminate the volume that Jimmy has got to take out in Yucca Mountain, because if you do mix oxide and reduce the volume, and you transmutate and reduce the volume, and at the same time produce medical isotopes and tritium, you have got a pretty neat package right there. I am wondering what the possibility of this is.

Mr. RICHARDSON. Congressman, you are being very skillful in linking all of these issues. I have made my decision on tritium because it is by far the cheapest, it gives us the most flexibility.

Mr. NORWOOD. I am not asking you to change it. But I know you are a good enough man, if we come up with a better solution and

deal with this waste as well as making tritium, and could package it and save the taxpayers a lot of money, but more importantly, reduce the volume that Jimmy has got to take, we might have a deal.

Mr. BARTON. Let us get a technical answer to that question, and then we are going to let Mr. Shimkus have his first 5 minutes.

Mr. BARRETT. Regarding—Lake Barrett, DOE—regarding the volume, the most concentrated part of the toxic material would be a reduced volume. There would also be a volume increase of the lower level actinides as well. On one part, it is better; on the other part, it is not. This would depend upon reprocessing, you know, fairly complicated nuclear processes.

Mr. NORWOOD. I am going to need a lot more. I will put it in writing.

Mr. BARTON. The gentleman from Illinois is recognized for 5 regular minutes.

Mr. SHIMKUS. Thank you, Mr. Chairman. I would love to have played baseball against the Secretary, probably a cagey batter. I would have loved to call signals beyond the plate.

Mr. BARTON. He was a good batter and third baseman too. He was, very, very good.

Mr. PICKERING. Would you yield just a second? As Secretary he is still eligible to play, isn't he, as a former Member?

Mr. RICHARDSON. No, I can't. You are very exclusionary unless you are a sitting Member.

Mr. PICKERING. We have some Senators play.

Mr. BARTON. We would waive the congressional rules if the Secretary wishes to come out. I might even come out of retirement.

Mr. SHIMKUS. They need you, need you desperately on the other side, Mr. Secretary.

Mr. BARTON. We are going to start your 5 minutes over.

Mr. SHIMKUS. Thank you, Mr. Chairman. Representing the State of Illinois, I will set the record straight on Commonwealth Edison. I think they are lukewarm to the proposal. And I am looking at some hybrid. I don't think you can characterize them as doing backflips about it at this time.

The second thing is, I have to respond to my good friend and colleague Ed Markey, I am not so pessimistic about the nuclear power industry. If we move on the issue of global warming, nuclear power will have a significant role in our Nation's energy needs, and it does today, I don't know, 40 percent of the energy production or something to that effect.

And also in response to my good colleague from Massachusetts, the spending caps were agreed upon by the administration in the Balanced Budget Act that I voted for and the President did sign.

Mr. Secretary, I need to move to this moving of the goal posts issue. Based upon, you know, my brief tenure here and my research, and I have the Congressional Record on October 1, 1997 where Director Raines in OMB says, and I quote, ''Therefore, the President has stated that he would veto any legislation that would designate an interim storage facility at a specific site before the viability of a permanent geological repository, Yucca Mountain, has been determined.''

Okay, and we have already passed that. Now we are having a debate over if we get to the suitable site, will then the administra-

tion accept an interim storage site, which I think in your opening statements you said, you know, that is the time when we are going to start looking at what we can do and how do we move waste. But then in the question and answer period you have stated that even if the site is deemed suitable, we still may not consider locating an interim site at Yucca Mountain.

So the goal post has moved, and it has moved three times, and I don't think anybody can say that it has not. If you would, I would like to get out that same piece of paper that Congressman Barton had us mark on and put down two numbers, 2001 and 2003, and ask the question, which is the earlier year?

Mr. RICHARDSON. Between 2001 and 2003?

Mr. SHIMKUS. Yes, sir, Mr. Secretary.

Mr. RICHARDSON. 2001.

Mr. SHIMKUS. Now I think we have got a good opportunity for an agreement. Based upon the suitability of the site, H.R. 45 says the acceptance of waste at an interim site would occur in the year 2003; is that correct?

Mr. RICHARDSON. Yes.

Mr. SHIMKUS. I am a cosponsor.

Mr. RICHARDSON. Yes.

Mr. SHIMKUS. The suitability of the site will be determined at the year 2001.

Mr. RICHARDSON. Right.

Mr. SHIMKUS. Don't you think we could come back at the year 2001, if the site is deemed not suitable, and halt the interim site?

Mr. RICHARDSON. No, because first, Congressman, I want to set the record straight. This administration said we would never—that we wouldn't support interim storage. I mean we have always been consistent there. After viability, we have always opposed interim storage. Our position has been let us do the major event, and that is the permanent repository. That has always been our policy.

What I am saying, Congressman, if you look at the Nuclear Waste Policy Act, if Yucca is not suitable, you all have to change the law and we reopen the issue once again. That is what I want to stress to you.

Mr. SHIMKUS. Won't we have to do that anyway?

Mr. RICHARDSON. No.

Mr. PICKERING. Would the gentleman yield just a second? And again I would give up some of my time.

Mr. BARTON. The Chair will give the gentleman from Illinois 2 additional minutes, and then if he wishes to yield to the gentleman from Mississippi, he may.

Mr. SHIMKUS. I would yield.

Mr. PICKERING. Can we not write in H.R. 45 a trigger mechanism so that we would not have to come back and reopen an act, but simply say we would move to interim storage in 2003, dependent upon or contingent upon scientific determination of suitability in the year 2001? So that the trigger is there that if it is not suitable, then that vetoes, in essence, doing an interim storage site in 2003. Would that not address both of our concerns without prejudging the decision?

Mr. RICHARDSON. Congressman, I don't think so, because the point has always been the same. We don't want to make a decision

now on interim storage in advance of the science decision at Yucca. Now, if we did the Congressman's initiative of the trigger and the 2003, we need to start right away to build permanent and interim storage to meet the 2003 deadline, and we would invite more litigation.

See, what the utilities need is a signal from you that you think my proposal on taking title makes sense. Otherwise they are just sitting back and trying to find what is the deal for them financially and whether they can get enough support in the committee, so we are at a standstill.

Congressman, I want to resolve the problem that you posed, a very good summary, right now and take title now, deal with the problem now, with minimal risk; and I believe funding-wise, after we do broad projections, even beat the chairman's money line, but not expose ourselves to more litigation. We are not addressing litigation issue as much as I wanted to in this hearing.

We are being sued. We, the government, the Department of Energy, the ratepayer, the taxpayer, you, are losing. And we believe that our initiative deals with that problem most effectively. And while you have triggers and others, I have not yet heard of ways of dealing with the utilities and their losses.

Mr. SHIMKUS. Mr. Secretary, I have to agree, I think we have come two directions in this hearing already. We have, one, said that we could write into the legislation what was requested, which would be a great savings, to address the litigation of the utilities. And I think that the chairman was very clear on that, and I think that was part of the addition exercise we had.

The second thing we moved on is a possible trigger in line with previous statements by the administration on viability, then suitability, and now post-suitablility. I think this is a very important exercise, and I think we are making a good faith effort, and I hope that the Department of Energy would do so also.

And I would yield back my time, Mr. Chairman.

Mr. BARTON. The Chair would recognize the gentleman from Mississippi for 5 minutes.

Mr. PICKERING. Thank you, Mr. Chairman.

And, Mr. Secretary, I do appreciate your efforts. You come with a reputation, and the administration has obviously seen your ability in sending you on peace missions to the U.N. and now to the Department of Energy, you have the reputation as a problem solver, as a peacemaker, and as the good Bible says, blessed are the peacemakers. So I do hope that we can find a way—and it is going to be in that spirit that I want to go through some questions, establish some premises, and then try to ask you, is there some consensus that we can build?

The first question goes back to something that Chairman Barton raised, and that is realistic funding. I am going to come back and talk about those questions you raised on liability and different things that hopefully we can work around. But again, based on the figures provided by DOE, the nuclear waste program would need as much as $1.3 billion during the outyears shown in this chart. That is $1 billion above the current funding levels.

Given the appropriations cap, do you seriously think appropriators will slash other programs, including other DOE programs, by

$1 billion per year and shift the funds to the nuclear waste program?

And, you know, if you look at the total numbers that you are talking about through 2010, you are basically talking—and if you went with your proposal on interim storage in 72 sites—an additional $2 to $3 billion for a total of $12.3 billion, about a $4 billion funding level. So you are almost $10 billion above what is necessary, and I am afraid no one on this committee feels like we will be able to achieve those funding levels.

My question is, given the likelihood of DOE projections saying that under those current funding levels, we won't have permanent storage until 2020, 2025, and that just increases the costs of your proposal, what is a way that we can do a better job, given the funding constraints? And do you think we can get the funding to meet your 2010 deadline?

Mr. RICHARDSON. Well, Congressman, you have very articulately posed the problem, and I am willing to acknowledge that. I did so to the chairman and the ranking member. And that is that after 2003, regardless of what solution we adopt, interim, Yucca, permanent, we are going to have funding problems in the outyears, and we are ready to work with you to deal with that. We believe that if we have been able to resolve the problem, that Congress in its wisdom, with the administration, would give us the funds to do the job. But I am acknowledging that it is a problem.

Mr. PICKERING. And this gets back to, you know, our basic core problems, as I sit and listen: your immediate liability, litigation costs and problems; as we look out, the long-term funding issues, and what could be a possible middle ground between the proposal that you have made and H.R. 45.

Let me walk through something and ask—and again I am not doing this, and this is my own individual initiative, so whatever I say, take it in that context. But if we said at the beginning you take title to the spent fuel in the 72 sites around the country to address the immediate liability issue; 2001 there is a determination made on the viability and the suitability of Yucca Mountain; 2003, now if we have to give longer lead times because of the construction and the permitting issue that you have raised, perhaps we can work with you. But once the 2001 suitability determination is made, we then trigger the interim storage at Yucca Mountain.

And so there is a combination of your immediate issue with going to an interim storage, and it is realistic on the outyears of the funding. If we are going to be 2015, 2020, 2025 on permanent storage, this proposal, one, reduces environmental and safety risks, it will be a lower cost, and it addresses your immediate liability needs.

Would you work with us on that type of framework?

Mr. RICHARDSON. You know, Congressman, I have said that this is a decision that needs to be made on science and no other factors. I think the people of Nevada deserve to know that science in 2001 says that in their State, in the air they breathe and the ground that is theirs, that we have told them that we can have a safe permanent repository at Yucca.

Now, I can't tell you this right now, although you mentioned a viability assessment which my scientific experts just concluded in

December, that was mandated in the law and we brought it in on time, that said there are no show-stoppers but there are some problems that need to be resolved, namely in the area of water. I can't posit and make a decision now until I know the science is going to say Yucca is ready and scientifically sound.

Mr. PICKERING. Mr. Secretary, we wouldn't ask you to do that. We would simply say in the law, if the determination is made, no prejudgments, no bias, no prejudice, if a decision is made, then we could move on the interim. But in the immediate concern that you have raised, we possibly can work with you on taking title, assuming the title of the spent fuel until we make that determination, and then we have the transition to an interim storage, and then we tack a realistic view of long-term funding for the permanent repository.

Mr. RICHARDSON. Well, Congressman, you are moving in my direction then. You are, I think, if I heard you correctly about the take title. What I would like to do, Mr. Chairman——

Mr. PICKERING. If we make movement to you on the title in the first 5 years, would you make movement to us in the next 5 to 10 years on the interim?

Mr. RICHARDSON. You are a tough negotiator, and I appreciate your nice words that you said before. But I think if this is truly the good-faith effort that I hope exists, I would hope, Mr. Chairman, that you give us time to talk to utilities, and you should do so, too, environmental groups, consumer groups, the State of Nevada, and see if our proposal, which I would obviously like to be the starting point, can be improved.

Mr. BARTON. It can be improved.

The Chair is going to recognize the gentleman from Kentucky for 5 minutes. But we share the same good-faith effort, I want to assure the Secretary.

Mr. WHITFIELD. Mr. Chairman, thank you very much.

And Mr. Secretary, I also appreciate your being here and helping us try to come up with some solutions to very a difficult and costly problem. I want to just clarify a couple of things.

First of all, because of legislation, Yucca Mountain was identified, and so if because of scientific and technical reasons, the Department would make the decision that Yucca is not an appropriate site, we would be back to square one having to identify a new site. Do you agree with that?

Mr. RICHARDSON. That is right, yes. That is in the law.

Mr. WHITFIELD. Okay. Now, I know that you have stated a number of times that damages are a significant issue, which is obvious to all of us. What specifically—I notice in your testimony you talk about contractual obligations that the department did not meet, and because of that were found liable for damages. What specific contractual obligations did the Department not meet?

Mr. RICHARDSON. Well, to take the spent fuel in 1998. In other words—and this is why the courts ruled against us—that we would take it in January 1998.

Mr. WHITFIELD. And that was because of legislation that required it?

Mr. RICHARDSON. It is in the contract. It wasn't your fault. It was the law, and then we put in the contract.

Mr. WHITFIELD. Okay. So pursuant to the law, you entered contractual agreements with them and you were not able to meet those deadlines?

Mr. RICHARDSON. Yes.

Mr. WHITFIELD. Okay. And then what the Department has come up with as a solution to this is taking title to the spent fuels at this time. That is what you are recommending?

Mr. RICHARDSON. A solution that needs perfection, it needs work, that we want to enter into a dialog, yes.

Mr. WHITFIELD. When you say needs perfection, is there something we need to do to make that work, or is there something that only you need to do?

Mr. RICHARDSON. Well, we need to talk to the utilities. We need to talk to the environmental groups. We need to talk to the people in Nevada. We need to talk to consumer groups to make sure that some of the legitimate questions that have been raised about the dry casks and the pools, and whether some utilities have storage problems, how we deal with their problems. Each utility, each State is different. Yours is different than others.

Mr. WHITFIELD. Okay. So taking title is a possible solution, but we have a long way to go to make that work as well, it sounds like. I mean there are a lot of variables out there.

Mr. RICHARDSON. Yes. The answer is yes, Congressman, because the utilities are still holding back, and they haven't come to us in droves and said, "We love your proposal" or "We hate it." You know, they are all covering themselves.

There is one organization, Nuclear Energy Institute, that goes and blasts my proposal and then calls and says, "Oh, we really didn't mean that." Then there are others, Wisconsin, and I guess I shouldn't say Illinois any more, that have been favorable. Others are holding back.

We have all of these secret channels that come to us saying, "Hey, we want to talk, but we are not going to talk to you unless the Congress, this committee, thinks your proposal is viable." They would rather jump on H.R. 45 and move with that one. That is understandable. But I think you need to give a signal, the chairman, on where we proceed from here, and then maybe we can start actual serious negotiations.

Mr. WHITFIELD. But as a possible solution to this, I am assuming you do not view the accelerator transmutation in progress as a priority way of solving it?

Mr. RICHARDSON. No, it is important. We have to—it is intriguing research, but I don't want to send a signal that that is a substitute to the work we are doing right now.

Mr. WHITFIELD. Okay. How do countries like France and others that have nuclear power take care of their spent fuels on a permanent basis? I mean what technology?

Mr. RICHARDSON. Many of them have different initiatives. France reprocesses it, for example. It goes country-to-country, Congressman. But we are acknowledged to scientifically have the more viable solution in terms of how we deal with nuclear waste, that is generally acknowledged, ultimate solution.

Mr. WHITFIELD. Would we be the first country that would use a Yucca Mountain-type solution?

Mr. RICHARDSON. Yes, we would be the first.

Mr. WHITFIELD. Okay. I see my time has expired, Mr. Chairman.

Mr. BARTON. Well, you have waited patiently all morning. If you need another—we have given others 2 minutes. If you need additional 2 minutes, we would be happy to yield it to you.

Mr. WHITFIELD. You are very kind, but we will let someone else ask questions.

Mr. BARTON. The Chair notes that the word has gone out that additional baseball talents are needed. The former catcher for the Democratic baseball team wearing the Cleveland Indians uniform, the Honorable Mr. Eckart of Ohio, has entered the room to backstop the Secretary in case you need it.

Mr. RICHARDSON. Who is a very good catcher.

Mr. BARTON. He was a good catcher.

The Chair would recognize the gentleman from Michigan for a second round of questions of 5 minutes.

Mr. DINGELL. Mr. Chairman, thank you for your courtesy.

Mr. Secretary, I will be submitting to you shortly a letter requesting a rundown on how we have done in terms of the expenditures versus the demands, the future, and how far the program has slipped over time. This will be done without criticism of you or without an attempt to abrade your feelings, but simply to establish how far we have fallen back both in terms of costs and in terms of reaching an expected completion date.

But I want to ask you something now, Mr. Secretary. I note that the funding chart over there before us shows clearly that the future payments to the Nuclear Waste Fund cannot pay for the full costs of the repository program. Even if they did, it would be fair to say that the historical pattern of the appropriations process would not give the Department of Energy the full amount contributed in future years.

It seems to me, then, that we need two reforms to this fund to fund the program fully. First, we need to make sure that the future revenue stream is protected, because we have diverted money from this revenue stream in the past.

Second, we need to recover the $8 billion which has been built up by the ratepayers in the Nuclear Waste Fund. I would note that this could be translated to mean that, in other words, we need to ensure that every dollar that has been paid and will be paid to the Nuclear Waste Fund goes to the program. This would restore the program to the original status.

What are your feelings on that statement?

Mr. RICHARDSON. I would agree with your statement, Congressman Dingell. I would also state that at the earlier part of your statement, the reason we have these appropriations-related problems is because of the budget caps that we would need to—regardless of what solution we jointly pick, we would have to deal with those outyears. It is a problem that is there regardless after 2003, but I would agree with the premise of your question.

Mr. DINGELL. I think it is also a fair statement, Mr. Secretary, at least from my view, that we need to take this off-budget simply to get the hot little hands of the budgeteers and the appropriators off of these moneys. What are your feelings on that statement?

Mr. RICHARDSON. Well, as a former authorizer, a member of this committee, I would agree with you. As a member of the administration, I think we would have to find a way to deal with the outyears. There is no question about—we have to resolve the problem that you just posed.

Mr. DINGELL. If I remember Gilbert and Sullivan, the Great Poobah at one point spoke in a capacity of a number of different officers of the government, and you remind me a bit of that this morning. I would observe, however, that as a concerned citizen, you would be very much concerned about the fact that these folks keep dipping into this fund as a cookie jar——

Mr. RICHARDSON. Yes, I am.

Mr. DINGELL. [continuing] to spend money on sweet little things that they would like to spend money on, that they could very well finance.

Mr. RICHARDSON. Yes.

Mr. DINGELL. Well, I just want everybody to know that I am thinking very strongly of making a real effort to try and see to it that these moneys are protected against those hot little hands, and that we are threatening the sanctity of this Fund and its ability to carry out the original congressional intent because of depredations by the Appropriations Committee and the Budget Committee.

Mr. BARTON. Would the gentleman yield?

Mr. DINGELL. I would be happy to yield.

Mr. BARTON. In the gentleman's absence, we discussed something very similar to what you just discussed with the Secretary, and there was a willingness on my behalf as the subcommittee chairman to work with you and the Secretary and other interested parties on that issue. That is something that we have put on the table while you were out of the room.

Mr. DINGELL. I am pleased to hear that, Mr. Chairman. I didn't have any reason to feel that we wouldn't feel about the same way about this matter.

Mr. Chairman, I thank you for your courtesy to me.

Mr. Secretary, it has been a pleasure to see you. Welcome back to the committee. You served here with distinction for a long time, and we have missed you, but we have followed your progress with pride and pleasure.

Thank you, Mr. Chairman.

Mr. RICHARDSON. Thank you, Congressman Dingell.

Mr. BARTON. The Chair recognizes himself for what I think will be the last round of questions. I am just going to turn the clock off, since I am the only member of the subcommittee still here.

First, Mr. Secretary, at the hearing that we had earlier on this issue where your representatives were present, we submitted a list of questions that we asked that they give answers in writing by March 1. As of yet we have not received those. Can you use your good offices to accelerate the receipt of those answers to our questions?

Mr. RICHARDSON. Mr. Chairman, we are working on these responses. We will provide them early next week. I understand that in the interim that the department has briefed members of your staff, provided copies of preliminary answers, especially with respect to the funding scenarios, so that you would have information

before this hearing. But as I said, early next week we will get you all the answers.

Mr. BARTON. In response to a previous question of mine, you said that the department does support the construction and the operational beginning of a permanent repository by 2010; is that correct?

Mr. RICHARDSON. Yes.

Mr. BARTON. I just wanted to make sure of that.

Mr. RICHARDSON. Yes.

Mr. BARTON. As long as you are Secretary of Energy, do you personally also support that goal?

Mr. RICHARDSON. Yes.

Mr. BARTON. Well, that is good. I want to try to summarize where I think we are. We have common goals on the permanent repository. We have a legislative proposal before the Congress on an interim storage facility that would be located at Yucca Mountain, that the department opposes and has said it will veto.

You have put forward, on behalf of the Clinton Administration, a proposal of interim storage—not interim storage, but interim ownership of the waste onsite. That proposal has not been fleshed out, nor has it been put in writing.

You have asked repeatedly in this hearing what the Congress thinks of that, and I think that is a fair question. At this point in time I don't think very highly of it, because it costs twice as much, using your own budget numbers, as the H.R. 45 proposal. It does not vitiate the pending litigation that has already gone against the Department of Energy. There would have to be some sort of a voluntary negotiation with each of the affected utilities for that issue to be taken off the table.

So I can only speak for one member of the subcommittee, but as of this point in time, if you want to send a response to the utilities, if they are waiting for a response, I don't think—I know I don't support the proposal that you have initiated the dialog on, and I didn't see a lot of support except from Mr. Gibbons, who unfortunately is not a member of the subcommittee.

But we will work, if you are willing to put it in writing, and flesh it out, we are certainly willing to work on that. The issues that we agree on, we need to work on the funding profile, regardless of what we do. I think we have established that. We agree that we have a date certain for the permanent repository to go into operation. We agree with that. We agree that we need to continue to do the science and make all decisions based on the best available science at the time that the decisions are made. We agree upon that.

So I guess to summarize, Mr. Secretary, I am reminded of the elephant mating ritual. Both parties have the same goals in mind, but how to get there is a very delicate question and has to be handled very carefully.

I am going to talk to Chairman Bliley early next week. I was under instructions to move this bill in February. And at your request, I told you that we would give additional time to engage in this dialog, and I have done that. Chairman Bliley told me earlier this week that he wants me to mark the bill up next week.

Now, if we can show real convergence, we might be able to put that off, but it would require you as the administration's point person on this issue to really come to the table on some issues, one of which would be the willingness to forego a veto if we could reach a bipartisan agreement between the executive branch and the legislative branch. And so I think that is where we are.

Would you like to—I will give you the courtesy as the Secretary of having the last word, if you wish to take advantage of that.

Mr. RICHARDSON. Well, Mr. Chairman, I think at least this hearing has lowered the temperature, and you have been very gracious, as have been members of the committee. I think there are some deep differences as to how we approach this issue. We are willing to engage in a dialog with you and your staff.

I guess what I was looking for is you saying "I like your proposal"—well, maybe not "I like," but "I am willing to discuss your proposal." I think what I just heard is that you don't like my proposal, but you want me to like your proposal with some slight modifications. I think that is what I am hearing. And perhaps we may not reach agreement, and everyone has to go their own way.

What I would like to do is, if you are interested in hearing more about our proposal, you need to signal that. I think that would trigger the utilities, keep them from being so cautious. They are holding back. They want the best of all worlds. They want——

Mr. BARTON. I have never been a United Nations Ambassador and I never had to represent the United States of America at the Security Council like you have, so I am not as good at this as you are, but let me clarify. I do not like your proposal as a substitute for interim storage in one location. I may be willing to "like it," to use your verb, if we combine the two: We do an onsite take title while we work on the interim storage, so that we work them together and have an interim storage facility located before the permanent repository is operational. So there is some room to work together on that.

Mr. RICHARDSON. Mr. Chairman, I am not sure——

Mr. BARTON. It is your turn.

Mr. RICHARDSON. Mr. Chairman, I am not sure there is, but——

Mr. BARTON. Now, I am trying every way I can, Mr. Secretary, to keep the administration at the table. I mean we really have—we have got two ways to do this. We can just put our shoulder pads and helmets on and just flat try to get 290 votes in the House and 67 in the Senate and beat the veto; or we can say, well, maybe we can really work together.

And I don't see anything out there that we really cannot work together on. I would rather work with you than have to try to prove that my shoulder pads are bigger than yours. But I have got to make a decision in the next 2 weeks. I have got to go to Chairman Bliley, as you well know, and the Speaker, and say, you know, we have got to start the legislative process, and I think you understand that.

Mr. RICHARDSON. I understand.

Mr. BARTON. I am not telling you anything that you don't know very, very well. So we have put a lot on the table, Mr. Secretary, and we would like to hear you say something that would indicate

that the administration wants to meet us, if not halfway, at least part of the way.

Mr. RICHARDSON. Well, Mr. Chairman, you know, you had previous Secretaries of Energy that have testified before you that said, "We are going to veto interim storage," and I am a Secretary of Energy that has come back to you and said, "We don't like interim storage because of the science, but I have a proposal." And I have advanced that, and I think you have to give the administration credit for that. You don't obviously think much of it.

But I am ready to engage in a dialog with you. I don't know exactly what that means. I don't want to trigger or signal that I am ready to significantly alter my proposal. I am ready to discuss it more. I think, Mr. Chairman, our fundamental position is that because of science, we don't think we can make a suitability decision on Yucca until 2001.

Mr. BARTON. Mr. Secretary, is it your understanding that the administration's position is that you are never going to support interim storage at all, even based on science that is validated by the——

Mr. RICHARDSON. I have advanced a proposal that deals with the issue of interim storage, Mr. Chairman. Taking title is an interim storage proposal of sorts.

Mr. BARTON. Okay. Well, then, let me ask the question another way. Is it your understanding that the Clinton Administration would never support temporary consolidation at a central location on an interim basis, even if the science validated that?

Mr. RICHARDSON. Well, if we have science dictate our answer, Mr. Chairman, we can't come to an agreement on interim storage if it means making a decision before science does at Yucca Mountain.

Mr. BARTON. That is not my question, Mr. Secretary.

Mr. RICHARDSON. Well——

Mr. BARTON. I am not trying to play verbal gymnastics with you. I am honestly trying to see if there is a way we can meet. I don't think this committee , and I could be wrong, but I don't think this committee will accept this warm and fuzzy take-title at all of these various locations until 2010 or 2015. I don't think that will work.

So I think we can probably, possibly combine the two, but we have to—you know, you keep saying you want to hear from us—we have to hear from you as the spokesperson for the Clinton Administration that at some point in time, under certain conditions, that the centralization of the waste on an interim basis is acceptable.

Mr. RICHARDSON. Mr. Chairman, rather than continue this, I would suggest that we talk next week and decide how we proceed, and recognize that we may be heading in different directions and do so with the utmost respect. I think you have treated my proposal, this committee, with extreme courtesy and graciousness and consideration, and we respect the views of the Congress.

If my proposal is not garnering much support, then you may wish to move the way you want, but at least we have put our proposal on the table. I would urge you to look at it more. We will try to answer more questions about it and discuss next week where we go from here.

Mr. BARTON. We will have a number of questions for the record, Mr. Secretary. And in order to, as you put it, look at your proposal, we do need to see it in writing. I think that is fair.

Mr. RICHARDSON. Okay.

Mr. BARTON. And we will go from there. All members will have a requisite number of days to put their written statements in the record if they weren't here in person.

The Chair would ask unanimous consent that the Honorable Shelley Berkley of Nevada, that her opening statement be put into the record. And we want to thank the Secretary for his courtesy of attending. Thank you, Mr. Gibbons, for monitoring the hearing on behalf of the great State of Nevada. This hearing is adjourned.

[Whereupon, at 11:50 a.m., the subcommittee was adjourned.]

[Additional material submitted for the record follows:]

PREPARED STATEMENT OF HON. SHELLEY BERKLEY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEVADA

Mr. Chairman, Members of the Subcommittee: Thank you for allowing me to submit this statement.

The time has come to declare H.R. 45 dead and move on in the search for an effective, practical, cost-effective and safe method of dealing with nuclear waste. I find it incredible that the House is still discussing a bill that would create the risk of shipping high level waste through 43 states and hundreds of cities and towns. I find it incredible that we are still considering spending billions of dollars on a temporary nuclear dump in Nevada that is not needed and would not be safe. And I find it incredible that this discussion continues even though the Secretary of Energy opposes a temporary dump and is proposing a promising solution to the temporary storage issue.

H.R. 45 is a measure that abandons well-established radiation safety standards, and allows radioactive contamination up to 25 times the level that is currently allowed at nuclear facilities in this country and around the world. H.R. 45 is condemned as a dangerous proposal by experts in the fields of transportation, public health, and the environment.

We should be devoting our time and energy to pursuing Secretary Richardson's proposal to maintain spent nuclear fuel in safe storage at reactor sites. This proposal enables the Dept. of Energy to fulfill its mission without creating the terrible risks and expenses associated with H.R. 45.

This proposal would enable the federal government and the scientific community to continue a fair and objective search for a safe, effective and permanent method of disposing of high level nuclear waste. Given its obvious merits, I strongly urge that as a matter of national interest we immediately begin reviewing Secretary Richardson's proposal as an alternative to the ill-advised approach of H.R. 45.

Thank you.

Accelerator-Driven Destruction of Long-Lived Radioactive Waste and Energy Production

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Abstract. Nuclear waste management involves many issues. ATW is an option that can assist a repository by enhancing its capability and thereby assist nuclear waste management. Technology advances and the recent release of liquid metal coolant information from Russia has had an enormous impact on the viability of an ATW system. It now appears economic with many repository enhancing attributes. In time, an ATW option added to present repository activities will provide the public with a nuclear fuel cycle that is acceptable from economic and environmental points of view.

1. INTRODUCTION

The nuclear waste disposal issue for spent fuel from nuclear reactors is one that has a large impact on public acceptance of nuclear power generation and of long-term storage options. To a lesser degree, this issue has an impact on the costs of generating electricity, and the shipping, handling and transport of highly radioactive materials. Various options for long-term storage are being considered by different countries, but most schemes result in a geologic repository that has to be licensed and certified for a lifetime in excess of 100,000 years. Much investment has been made in repositories and their capabilities, with significant progress and rational solutions. Many individuals state that a geologic repository is a good solution and one that can work well. Others express concern over the time needed to protect such facilities from overt or covert actions, either from natural effects or by planned intrusions. Some express concerns about passing a serious legacy to future generations and about the loss of an energy generating resource from the heavy elements in the stored spent fuel. These are all difficult issues to consider and require well thought-out solutions to effect a win-win outcome for a country, its leaders, industry and the populace.

The Accelerator Transmutation of Waste (ATW) system is a repository enhancing option that should be considered because of the benefits it provides; no matter where the repository is located and no matter its status. The ATW option can be employed whether the spent fuel is fully buried, monitored and retrievable, or in interim storage ponds at nuclear installations. ATW supports the premise that a repository is a very good solution and assists this solution by making more efficient use of the capacity. A comparison can be made of flying across the Atlantic Ocean from North America to Europe in a propeller driven plane versus a modern jet aircraft. A traveler spends less time getting across, the higher flight path is usually less impacted by the weather and the turbulence, and the economics are better because of improvements in technology; even though the propeller driven aircraft is safe and gets to the destination. Both are acceptable solutions, but the jet aircraft is preferred by most individuals because of economics, technology enhancements, time spent and other associated benefits. Successful development work on jet engines and associated technologies allowed the introduction of this option into air travel.

Estimated benefits to be accrued for an ATW assisted repository include the following:

- Radiotoxicity and radioactivity are significantly reduced. An ATW assisted repository has a lower toxicity (and activity) after 300 years than an unassisted repository after 100,000 years.
- Because of the above improvement, it may be possible to license a repository for 300 years rather than the present anticipated 100,000 years plus.
- The amount of transuranic material introduced into a repository is reduced by more than three orders of magnitude. In the USA this means that the 600 tons of transuranics, contained within the 70,000 tons of spent fuel estimated to be handled by 2015, is reduced to less than 0.3 tons.

- At the same time that the transuranic material is being transmuted in the ATW system, it is generating useful energy that can be coupled to the electrical grids.
- At no time during the operation of the ATW cycle are weapons materials separated or made available in the processing streams. In that sense, the processes are proliferation resistant.
- Two of the most worrisome fission products, Tc and I, are transmuted and minimized to the point that they are no longer major concerns for repository licensing.

Over the past decade many technology alternatives for an ATW system were studied. It is intriguing and interesting that the international community has evolved to the same three basic components for an ATW system. These three components are pyrochemistry for the chemical processing, the liquid lead bismuth eutectic (LBE) used for both the target and the coolant, and the high-power linear accelerator that provides the protons for the spallation process in the target. Other common features used in the design of an ATW include solid fuel, fast neutron spectrum and a sub-critical assembly. Previously studied elements that are no longer considered include molten salt, thermal neutron spectrum, liquid fuels and centrifuge separations.

We have reached the stage in the development for an ATW system where it makes sense to take the next step –to start significant funding over the next five years to develop and test the concepts to the point such that an informed decision could be made by policy makers on whether this technology should be taken to the next stage, a demonstration ATW plant of the 1000 MWt class.

An outcome of the five year development program would not only be the concepts and the feasibility of an ATW system, but would include the technology that could be used in other applications. The pyrochemistry, the LBE target, a LBE-cooled fast reactor concept and the accelerator technology could all be of benefit to programs which have as part of their infrastructure items such as spallation neutron sources and targets, future nuclear stations, and high-power proton accelerator applications including radio-isotope production, muon colliders and neutron scattering. Some have even suggested that the technology developments in LBE and pyrochemistry could be the bridge to future nuclear systems that may have the following advantages: simplified operation, minimal waste streams, more efficient use of heavy element resources and reduced costs.

2. SYSTEM DESCRIPTION

As mentioned above, an ATW system consists of three major building blocks. These are the high-power proton accelerator, a liquid LBE target and cooling system, and pyrochemistry processing. Our studies and those of our international colleagues indicate that economics for an ATW-assisted repository appear to be favorable. This economic indication has been verified by industrial partners who have completed simple systems studies; not detailed economic analysis based on item-by-item component lists, scheduled deliveries and supplier quotes. We have not reached the state in our studies to be able to provide such detailed information. Information of this nature would be part of the outcome from the five year technology development program planned for the future.

Choices for the three major building blocks are based on the following information. The subcritical burner uses liquid LBE and is based on solid fuels and extensive Russian nuclear reactor work with liquid LBE. The pyrochemical processes are based on significant work at ANL and LANL on efficient processes that have the potential for proliferation resistance and low environmental impact. The linear accelerator is based on work underway within the USA for an Accelerator Production of Tritium (APT) accelerator (170 MW of continuous beam power), and the innovations and developments achieved earlier under the Strategic Defense Initiative (SDI) ion beam programs. These three recent developments have revolutionized the ATW capabilities and have made it possible to consider significant advantages for an ATW-assisted repository.

ATW assists waste disposal options by transmuting waste. The process starts by accelerating protons to about 1 GeV in an efficient linear accelerator. Accelerator economic studies using real hardware costs have shown that 1 GeV is an optimum energy for this application, within a rather large minimum cost band. These energetic protons produce copious neutrons from the spallation process when they impinge on a high

atomic number spallation target. At the proton beam energies and LBE target of interest, each proton produces about 30 neutrons. Having this source of neutrons allows an ATW system to operate sub-critical and thereby assist the nuclear system in transmuting transuranics by causing them to fission, and transmuting fission products (mainly Tc and I) by neutron absorption to other isotopes. Subcriticality and pyrochemistry enable the destruction of actinides and fission products safely, without isolation of weapons-grade material, without extensive separations and in a single-purpose device. Aspects of handling and transportation are minimized by having most of the activities completed at the ATW site. The proton beam impinges on a liquid LBE target that is also the coolant for the nuclear system consisting of transmutation solid fuel assemblies. The choice of liquid LBE for the target and coolant is based on the more than 75 reactor years of experience in Russia for liquid LBE-based nuclear reactors that were mainly used for their "Alpha-class" submarines. The solid fuel assemblies are made from first decladding spent fuel and then performing several stages of pyrochemistry involving direct oxide reduction, electrorefining and electrowinning of the materials. Fuel assemblies are then fabricated from the material coming from the electrowinning process and from the Zr that was declad from the spent fuel.

Transmutation assemblies spend about a year within the transmutation burner core, being shuffled between the three zones of the core during this period. After this shuffling cycle is completed, the rods are allowed to "cool" and then go through a similar process as for the spent fuel to provide separations and material streams that eventually lead to a reduction of three orders of magnitude in the transuranics that would be put into a repository.

Operational parameters for the liquid LBE coolant (340°C inlet and 540°C outlet with 400°C to the steam generator) permit efficient conversion of heat to electrical power. About 10% of the power generated would be fed back to the accelerator to provide the necessary power to operate it and its ancillaries.

3. REPOSITORY ENHANCING SCENARIO

A scenario has been developed using information available at this time for the performance of the ATW system described in this paper. This scenario is based on the 70,000 tons of reactor spent fuel expected to be accumulated within the USA by the year 2015. Assuming that this material should be transmuted within a reasonable time-frame and that the number of ATW systems shouldn't be too complex or costly, the following attributes are possible. No optimization of the transmutation complex has been completed, nor has any inference been made about continuing ATW-type systems after the campaign -- this scenario is provided only to give an indication of possibilities that can be accrued. Over a 65 year period it is possible to convert the 70,000 tons of reactor spent fuel (with 600 tons of transuranics) to:

- 67,000 tons of uranium (could be considered as LLW (Low Level Waste) -- radioactivity of natural U) which would be a small addition to the present LLW uranium.
- Less than 0.3 tons of transuranics.
- 3,000 tons of fission products (with minimal Tc and I).
- 560 GWe-year of electricity generation assuming an overall 35% plant efficiency (including thermal conversion). Even at 20 mils per kW/hr this represents a sizable return on the investment -- about $100 Billion over the 65 years.
- No significant Pu or Np.

Because of this conversion only about 3000 tons of material needs to be transferred to the repository (a reduction of a factor of 20 from the initial 70,000 tons), a situation that seriously impacts the needs for additional repositories in the future. This impact is realized because the repository storage efficiency is improved by the transmutation process, by the types of materials to be stored, and by the changes in the heat load and radiotoxicity -- all leading to decreased long-term risks.

The 65 year scenario involves the commissioning and installation of twenty 2000 MWt transmutation burners, staggered over a 25 year period and each with a 40 year lifetime, such that the transmutation campaign ends after 65 years. This scenario could be realized by utilizing three locations with seven transmutation burners at each of the

locations, with only one location functional for the last ten years of the campaign. A very rough investment cost of this three location scenario for the 25 years is in the "ball park" of $60 B with average operating costs "guesstimated" at $2 B per year. Much work needs to be done to refine these "ball park" numbers and their implications.

4. TECHNOLOGY CHOICES

As stated above, the three major choices for the accelerator, subcritical assembly and the chemical processing were made on the basis of recent technology developments and information releases, all of which make the ATW system a very interesting option to be considered for assisting repositories in the future. Development work is still needed to bring this technological application to a state of maturity such that reasonable decisions could be made on whether this option should be pursued further.

4.1 Chemistry And Fuels

Based on significant work at ANL and at LANL in pyrochemical processing and because of difficulties encountered with waste streams from aqueous processing, pyrochemistry was chosen as the appropriate method for processing reactor spent fuel and the transmutation assemblies. Some of the pyrochemical processes are interpolations of systems that have been demonstrated, whereas the majority involve extrapolations which appear to be within reasonable bounds. Although within reasonable bounds, they still need to be demonstrated on a larger scale than at present. This is part of the five year development program planned for the future. We are using process models and simulations that have been verified with data from systems that have operated at ANL and LANL.

The pyrochemical process is considered to be proliferation resistant because the transuranics are separated as a group to be transmuted within an ATW burner. At no time are weapons-grade materials made available during the processing. Obviously, international controls will have to be employed to ensure that chemical processes are not altered in a significant manner.

Figure 1 shows a chemical processing flow chart for reactor spent fuel on the left and transmutation assemblies on the right. Within the processes, secondary wastes are minimized and waste materials destined for the repository are segregated in a manner that assists preparations necessary prior to repository transport.

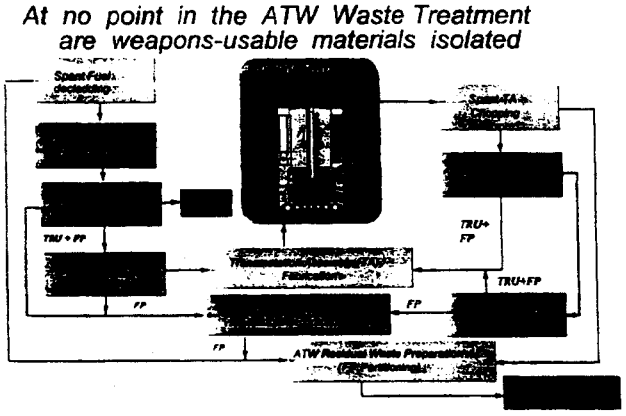

Figure 1 ATW Process Chemistry Flow Chart

The spent fuel decladding process provides the feed material for the direct oxide reduction process. Zr from the cladding is used as feed material for fabrication of

transmutation assemblies. Within the oxide reduction process, Sr and Cs are left in the molten salt, oxide fuel is converted to a metal for further treatment and offgasses are collected as in the decladding process. Electrorefining accomplishes uranium separation in a manner to ensure no other actinides are transferred with it. Electrowinning provides the feed material for fabrication of the transmutation assemblies. A reductive extraction process is used to remove the rare earths from the molten salt. At most, three plants would be required to accommodate the 65 year transmutation scenario described above and each of these could fit within a 5000 square foot building.

In a similar manner, the spent transmutation assembly chopping provides the feed material for the electrorefining process. Here the electrorefining process separates the U, transuranics and the fission products. These processes could fit within the building mentioned above.

The high melting point transmutation assemblies consist of non-fertile actinides (15%) and Zr (85%) with 316 SS cladding, and are compatible with the pyrochemical processes mentioned above. There are many issues that need to be addressed for the assemblies including swelling, bonding compatibility, and other irradiation effects.

4.2 Liquid Metal Coolant

Using the same fluid for the spallation target as well as the core coolant results in many improvements including elimination of a target cooling system and associated mechanical assemblies. Liquid LBE is an excellent spallation source because of the high atomic number, very "hard" neutron spectrum generated and very low neutron absorption.

Russian advances in the use of liquid LBE for nuclear reactor cooling showed the importance of oxygen control, and the instrumentation for monitoring oxygen to the levels required has been developed by them. Liquid LBE is an excellent coolant for this application, as well as for future fast reactors, because liquid LBE has the following properties:

- Maintains the "hard" neutron spectrum.
- Has a very low neutron absorption, which can lead to core design improvements.
- Is a very effective radiation shield for the outer walls.
- Has the potential to enhance natural convection.
- Has no violent reactions with water or air.
- Has low melting and high boiling temperatures.
- Has a potential for self-plugging leaks.

4.3 Accelerator

Using a high power proton accelerator to drive a subcritical assembly enables effective nuclear waste disposal. The accelerator-produced spallation neutrons allow much flexibility for a system that needs to handle many types of nuclear waste forms. This frees the designer to concentrate on advantages for the transmutation core without invoking constraints that could lead to specific designs for specific spent fuel assemblies or severely constrain end-of-life inventory burn down. Advantages for a subcritical system include the following:

- Power control is linked to accelerator drive, not to control rods, reactivity feedback and delayed neutrons.
- Fertile materials are not needed for the core. Pure transuranic cores ensure a minimum of further transuranic production.
- The burner operates independent of fuel composition to first order.
- End-of-life inventory is not limited by criticality criteria.
- Neutronics and thermohydraulics are effectively decoupled.

Design for the ATW accelerator driver invokes a number of design constraints including high conversion efficiency of electrical power to beam power, current variable by a factor of two, extremely low beam loss, minimal length, minimal operating and capital costs, and high availability and reliability. Maximum proton beam power required for each 2000 MWt burner is 40 MW at 1 GeV.

The accelerator design constraints have led to selection of a modest linac, 355 m in length, which employs superconducting structures to accelerate the proton beam from 21 to 1000 MeV. The "front-end" employs conventional room-temperature structures

and injectors for which all of the necessary performance characteristics will have been demonstrated when the "front-end" Low Energy Demonstration Accelerator (LEDA) operates with proton beam before CY 1999 as part of the APT program. Work on the "spoke" cavities employed for acceleration from 21 to 100 MeV will be required as part of the five year development program. Table 1 lists the parameters for the linear accelerator. Combining benefits of room-temperature and superconducting technology exploits the advantages of both systems for the maximum benefit of the "driver". Room-temperature technology is employed to 21 MeV in order to provide excellent emittance control and minimize halo generation. After this, superconducting technology is employed to minimize rf cavity losses, provide large beam apertures, reduce accelerator length, and provide flexibility for rf phasing, error tolerances and beam current variations.

Table 1 Accelerator Parameters for 1 GeV ATW Proton Linac

Parameter	Value
Injector	0.075 MeV
RFQ	0.075 MeV - 6.7 MeV
CCDTL	6.7 MeV - 21.2 MeV
S/C Spoke Cavities	21.2 MeV - 100 MeV
S/C Elliptical Cavities	100 MeV - 1000 MeV
Maximum Gradient	4.4 MV/m
S/C Cryomodules	5 / 26
Cryoplant Load	15 kW
Maximum Beam Power	40 MW
Total RF Power	42.3 MW
Linac AC Power	95 MW
Peak Coupler Power	200 kW
1 MW Klystrons	3 - 350 MHz / 53 - 700 MHz
Aperture Radius	1 / 4 / 7.5 cm
Focusing lattice	FODO
Room Temperature Quadrupoles	210
Superconducting (S/C) Quadrupoles	165

4.4 Nuclear System

A schematic for a 2000 MWt nuclear transmutation burner is shown in Figure 2. The proton beam impinges on the liquid LBE (44.5% Pb/ 55.5% Bi) from the top with the transmutation area consisting of transmutation assemblies surrounding this target area. Liquid LBE cools the burner with pumps and heat exchangers co-located in the nuclear system. LMR experience is used in the design of the nuclear system incorporating hexagonal canned assemblies. The core is about 3 m in diameter and 2 m in height fitting into a nuclear system with an overall diameter of 10 m and an overall height of about 17 m. Maximum keff is 0.967 and maximum power density is 0.34 MW/l. A three zone concept is envisioned with fuel assemblies being moved from the outer zone to the center and then to the inner zone during burnup fuel cycle changes.

5. ATW DEVELOPMENT PROGRAM

With industrial input, a five year development plan has been determined that will provide the technical support for large-scale integration and deployment of ATW technologies. This $115 M program over five years focuses on issues of importance to enable a logical decision to be made at the end of the five year development program as to whether a further five year program should be pursued. This second five year program would focus on construction and operation of a 5 MW Subcritical Test Facility to be driven by a 1 MW proton beam, design of an ATW Processing Facility geared toward full scale pyrochemical processing and design of a 1000 MWt Demonstration Plant that could be located at some strategic location.

The first five year program plan focuses on materials verification studies and experiments, liquid LBE performance verification including spallation product

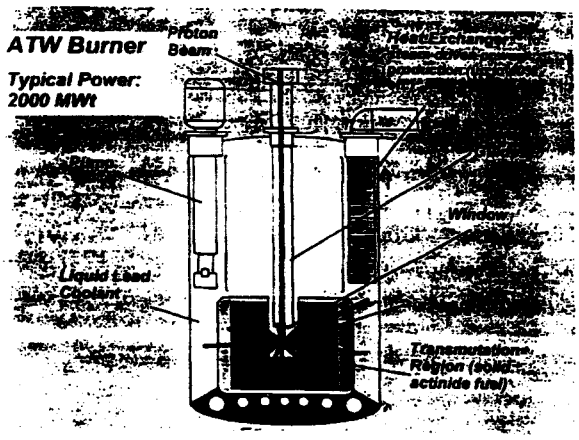

Figure 2 Schematic of 2000 MWt ATW Burner

measurements, nuclear design, chemical database, chemical processes at up to 10 kg scale, mass flows, accelerator design, system studies and some design work to determine characteristics necessary for a future Demonstration Facility.

6. COLLABORATIONS

Considerable interest in ATW has developed within laboratories, institutions and industries around the world, not only because of ATW but because of technologies spinning-off from this program which have many other applications. Within the USA we have formed a team consisting of LANL, LLNL, Sandia, Savannah River, Bechtel, Northrup-Grumman, Westinghouse-STC, UC-Berkeley and U. Illinois. Funds to this point have been forthcoming from each institution participating, with LANL recently investing $1.7 M for each of the three years ending in 1999.

A common technical approach has emerged within the international community and this common approach has assisted collaborations in a significant manner. Europe and Asia are investing considerable amounts of manpower and money in order to put ATW technology on a firmer foundation than at present. Within Europe, countries including the Czech Republic, France, Italy, Spain and Sweden have shown considerable interest and within Asia, S. Korea and Japan have started investigations. Collaborations exist between Russia, CERN, CEA, KAERI, Sweden and the USA team.

7. CONCLUSIONS AND SUMMARY

An ATW system could assist a repository by enhancing its capability. An ATW-assisted repository has many other worthwhile features that need to be investigated in more detail. Work on repository solutions should not be stopped. However, options that could make a repository even better in the future should be investigated to the point that logical decisions based on complete information can be made. For this reason it is suggested that a five year development program should be vigorously pursued. Enough information is available at this time to indicate that there are no known "show-stoppers". Some development work will lead to further technology selections, but this does not appear to indicate that ATW is not possible, nor that it isn't within the economic "ball park".

The major components of an ATW system are based on proven technology or on those that will be demonstrated very soon by other programs. Performance drivers that have been used in determining the present ATW system are safety, proliferation

resistance, low environmental impact, fast burn rates and low inventories. All of these goals are met in the system described above.

A logical path has been shown for developing an ATW system with opportunities to make future decisions for continuing or stopping.

8. ACKNOWLEDGMENTS

Many people have been working in the ATW area for the past ten years and they have made significant contributions to the needed technology base and understanding. Their legacy will allow others in the future to build on this strong base -- one that is well documented with many international connections. This program is truly an international effort and one that requires international collaborations to succeed. Resources from the many laboratories, institutions, universities and industries around the world have played an important role in advancing the technology to the point that it makes sense to take the next steps requiring modest government funding. It is difficult to acknowledge everyone who has had an impact on making this ATW option more visible within the world community. However I'd like to express my grateful appreciation to Carlo Rubbia, Massimo Salvatores, Yuri Orlov, Waclow Gudowski, Curt Miliekowski, Vladimir Kazaritsky, and Edward Arthur for their foresight and willingness to push hard against what appeared to be "closed" doors. We have come a long way on this ATW journey and many new individuals have joined the throng. Although we are of differing opinions, Charlie Bowman needs to be singled out because he has had a significant influence on the program and the understanding of the technology choices.

Within the USA, I am particularly indebted to the ATW team led very ably by Francesco Venneri. This team has put together the promising technology and a system that has many exciting attributes. I am grateful for contributions from members of that team: Mark Williamson (chemistry), Ning Li (LBE), Mario Carelli (nuclear system), Mike Houts (nuclear design), George Lawrence (accelerator), Tim Myers, Tom Wangler, Keith Woloshun, Valentina Tscharnotskaia, Michael Bjornberg, Joey Donahue, Steve Wender and Ann Schake. Others that I would like to thank are Sam Harkness, Bob Taussig, Mike Kreisler, Arthur Kermin, Pete Lyons, Nestor Ortiz, Pete Miller, Tony Favale, Reed Jensen, Rulon Linford, John Ireland, Mike Cappiello, Edward Heighway, Bill Bishop, Greg VanTuyle, Paul Lisowski and John Browne for recognizing the many implications of this program.

RESPONSE OF DAVID JOOS TO QUESTIONS OF CONGRESSMAN BARTON

In my testimony, I observed that current calculations suggest that DOE's liability for its failure to perform its legal responsibilities could total $56 billion for spent fuel related costs. I did not suggest that the electric utilities customers' payment to the Nuclear Waste Fund should be used to pay additional utility costs and other damages occasioned by DOE's nonperformance. Such a step would further penalize utility customers for DOE's misdeeds.

The $56 billion of potential liability for damages would be the result of a complete failure by the federal government to meet its obligation to accept spent nuclear fuel. Others have variously estimated this liability in the range of $40 billion to $80 billion. Because such a failure is due to the failure of DOE to perform its duties, the responsibility to pay these damages should lie with the federal government, and not the ratepayers. It is the government that failed to perform and it should bear the costs of its nonperformance, not utility customers.

Question. Are current nuclear plant payments into the fund sufficient to cover this sum?

Answer. No. The fund would not be sufficient to cover these damages, nor was that its purpose. It was intended to fund the activities specified in sections 302(d), 142(b), and 406(a) of the Nuclear Waste Policy Act, not to serve as a governmental hold-harmless mechanism. It would not be appropriate for ratepayers to pay these costs.

Question. In light of this potential liability, do you think the payments should be increased to ensure the viability of the waste disposal program?

Answer. No. Payments should not be increased because damages should not come from the Nuclear Waste Fund. The responsible party is the federal government and the federal government should bear this loss. The fund is adequate to pay the entire life-cycle costs for the purpose for which it was intended. It was never intended to be used to provide liability coverage for the government's failure to perform.

Question. If payments are increased to pay for damages and for interim storage, could utilities then sue for additional breach of contract?

Answer. I do not believe it would be appropriate to increase the fee charged to utility customers for the ratepayers to have to sustain these damages. I believe the industry would challenge any use of the Nuclear Waste Fund and any increases the Nuclear Waste Fee imposed to fund the government's failure to perform.

DEPARTMENT OF ENERGY
WASHINGTON, DC 20585
April 9, 1999

The Honorable JOE BARTON
Chairman, Subcommittee on Energy and Power
Committee on Commerce
U.S. House of Representatives
Washington, DC 20515

DEAR MR. CHAIRMAN: On February 10, 1999, Lake H. Barrett, Acting Director, Office of Civilian Radioactive Waste Management, testified regarding H.R. 45, the Nuclear Waste Policy Act of 1999.

Enclosed are the answers to questions submitted on behalf of you and Representatives Dingell and Markey to complete the hearing record.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Barbara Barnes, on (202) 586-6341.

Sincerely,

JOHN C. ANGELL
Assistant Secretary, Congressional and Intergovernmental Affairs

Enclosure

QUESTION FROM CHAIRMAN BARTON

Q1. Does the Administration have any legislative proposals, as alternatives to H.R. 45, that would:

a. Accelerate acceptance of spent fuel prior to 2010;

b. Strengthen the repository program by assuring adequate funding; and

c. Protect consumers by halting the diversion of consumer fees?

A1. The Administration has no alternative legislative proposals. However, on February 25, 1998, the Secretary testified that he is considering ideas put forth as alternatives to centralized interim storage. One such alternative could be to have the Department take title to spent nuclear fuel and assume the management responsi-

bility for the fuel on-site at the reactor. This could continue until a permanent geologic repository is ready. The Secretary, as he has said before, wants to open a dialogue to address the Department's obligation to dispose of spent nuclear fuel.

Q2. What intensity of earthquake is the repository designed to withstand? How do the recent earthquakes in the vicinity compare to this design standard? Does this recent seismic activity pose any technical reason to invalidate the Yucca Mountain site for the permanent repository?

A2. The Department of Energy is designing a repository to withstand stresses from earthquakes in accordance with building requirements for modern mines, tunnels, and power plants that are located in seismically active areas. Our design basis for repository structures, systems and components that are important to safety is ground motion of 0.67 g. This is equivalent to an earthquake that registers magnitude 6.5 on the Richter scale at a distance of less than 5km.

On January 25 and 27, two earthquakes of magnitudes 4.3 and 4.7 on the Richter scale occurred on the eastern edge of the Nevada Test Site near Frenchman Flat, approximately 25 miles from the Exploratory Studies Facility at Yucca Mountain. The ground motions from these earthquakes were less than 0.01 g.

The recent seismic activity at Frenchman Flat is consistent with our understanding of the tectonic framework and seismic hazard at Yucca Mountain. We base our seismic hazard analysis on an extensive database of information regarding earthquakes and active faults near Yucca Mountain. We are assuming for purposes of our planning that earthquakes, such as those at Frenchman Flat, will occur again.

We believe that these earthquakes do not pose any technical reason to invalidate the Yucca Mountain site for a permanent repository.

Q3. There is recent evidence suggesting relatively rapid groundwater transport at the repository site and elsewhere at the Nevada Test Site. Please summarize this evidence. Does this information pose any technical reason to invalidate Yucca Mountain as the site for the permanent repository?

A3. No. The information available does not warrant invalidating the site. The recent evidence suggesting rapid groundwater transport is based on presence of chlorine-36, an isotope produced by atmospheric nuclear weapons testing. In April 1996, the Department reported that trace quantities of chlorine-36 were found at the proposed repository depth. This suggests that water from the surface transported the isotope to the repository level in approximately 50 years.

The mere presence of chlorine-36 at the repository level does not pose a technical reason to invalidate Yucca Mountain as a site for the permanent repository. Those who propose invalidating this site, refer to a provision in the Department's Siting Guidelines which state "a site shall be disqualified if the pre-waste-emplacement groundwater travel time from the disturbed zone to the accessible environment is expected to be less than 1,000 years along any pathway of likely and significant radionuclide travel."

The total systems performance assessment presented by the viability assessment does not support a finding that ground water travel is less than 1,000 years along a pathway of "likely and significant radionuclide travel." Geologic, geochemical, and geochronologic analyses provide some evidence suggesting that the age of water beneath the repository level is several thousand years. However, as cited by many who have reviewed the viability assessment, more studies on this issue are needed before a decision to recommend or disqualify Yucca Mountain can be made.

Q4. EPA and NRC have differing opinions regarding an appropriate radiation standard for Yucca Mountain. From the perspective of the agency that is responsible for designing, building, and operating the repository, what is the practical effect of a 15 mrem standard versus a 25 mrem standard. What impacts will this difference in radiation standard have on the cost, schedule, and long-term performance of the repository?

A4. Chairman Jackson testified during the February 10, 1999, hearing that there are no significant differences between a 15 mrem and a 25 mrem standard in providing protection of the people who may live near the Yucca Mountain site. The differences between NRC and EPA on the value of the individual protection standard are not significant to our longterm performance analyses, and would not be expected to have cost or schedule implications.

Q5. To meet its current plan of constructing and operating the repository by 2010, the Department will need much higher funding levels than it received in the past. How much will the agency need to build the repository by 2010? Will you need more revenues than are generated by the one mill fee—$660 annually—in some of the years? What is the source of any funding received during these periods beyond the revenue generated by the one mill fee? Does the department assume it will get complete access to the Nuclear Waste Fund in peak years, although a large portion of

those funds has always been inaccessible? Does the agency assume the defense contribution to the program rises sharply?

A5. The attached table provides staff estimates of the funding profile for the period FY 1999-2010 (i.e., the commencement of waste emplacement operations) for the repository program, based on cost estimates that have been provided in the recently issued Viability Assessment (VA) and the Total System Life Cycle Cost (TSLCC). Based on historical appropriation patterns, the program would need an additional $4-5 billion from additional funding sources above funding projections to meet the 2010 emplacement schedule identified in the VA and TSLCC. Further, the program projects that between FY 2000 and FY 2010, the projected commencement date for repository operations, about $6.5 billion would be needed to complete the site characterization program and construct a repository. These estimates assume: (1) the discretionary appropriations level for the program continues at the FY 1999 level; (2) the defense appropriations totaling approximately $1.5 billion are paid by 2010 to fund the balance owed to the program to support the waste acceptance by 2015; (3) $85 million is released in FY 2002 at the time of the site recommendation and 4) neither the Nuclear Waste Fund balances nor the investment income from the fund is available until after FY 2010.

DRAFT
BUDGETARY AUTHORITY - YEAR OF EXPENDITURE DOLLARS
CASH FLOW FUNDING PROFILE FOR CURRENT PROGRAM (AS OF 02/08/99)
($, MILLIONS)
W/RAILROAD

2010 REPOSITORY

CATEGORY	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	TOT(00-10)	AVE(00-10)
YUCCA MOUNTAIN	305	359	334	309	400	423	923	1020	1030	740	620	359	6312	392
OWAST	2	2	22	35	408	421	150	150	150	150	300	300	2084	189
PROG. MANAGEMENT	47	48	50	50	50	50	50	50	50	50	50	50	548	50
SUBTOTAL	354	409	406	394	850	900	1125	1220	1230	940	970	709	9144	831
RAILROAD	0	0	0	0	15	35	60	65	65	250	250	220	960	
TOTAL PROGRAM	354	409	406	394	865	935	1185	1285	1295	1190	1220	929	10104	919
AGGREG. APPROP.	354	409	406	394	865	935	1185	1285	1295	1190	1220	929	10104	919
DEFENSE CONTRIB	-189	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-200	-2200	-200
DEFENSE CATCHUP	0	-55	-52	-40	-200	-200	-200	-200	-200	-200	-160	0	-1507	
APPROPRIATION-NWF	-166	-154	-154	-154	-154	-154	-154	-154	-154	-154	-154	-154	-1694	-154
TOT. GROSS APPROP.	-355	-409	-406	-394	-554	-554	-554	-554	-554	-554	-514	-354	-5401	
DEFICIENCY	0	0	0	0	311	381	631	731	741	636	706	586	4703	
MAND. FEE	1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	12.0	1.0
OFFSETTING COLLECTION		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
MILLAGE FEE EQUIVALENT		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0
NECESSARY OFFSET													4494.0	
EXCESS OVER RESOURCES													4494	
EXCESS OVER 1MILL														7.1

NOTES:

- This table assumes historical appropriations patterns for the program.
- This table assumes a defense catchup of $1.52 billion by FY 2007.
- This table assumes the discretionary appropriations level for the program continues at the FY 1999 enacted level. (FY 1999 revised to include $12 million from FY 1998).
- This table assumes that Nuclear Waste Fund balances and investment income are not available until after FY 2010.
- The annual spending profile could be modified if construction and procurement strategies are altered.
- The Yucca Mountain and transportation/waste acceptance projects are based on the VA/TSLCC cost estimate of 12/18/98., for 70,000 MTU through 2010.

Q6. Your testimony states the Administration is comniitted to the permanent repository. The question is how to accelerate acceptance of spent fuel in order to avoid the prospect of massive payments to utilities. Is it possible for the Department to pursue both interim storage and repository development, if funding were adequate to do both?

A6. The Administration continues to oppose interim storage at Yucca Mountain before completing the scientific and technical work necessary to make a decision on whether the site is suitable as a permanent geologic repository. If legislation were enacted authorizing interim storage and given enough funding, the Department would then be able to pursue development of both interim storage and geologic disposal.

Q7. In the past, the Administration has opposed interim storage siting before completion of the viability assessment. That was the position the Administration took before Senate consideration of nuclear waste legislation in 1996. Is that still the Administration's position now that the viability assessment is complete?

A7. The Administration's position on the interim storage legislation has not changed. There is nothing in the viability assessment that would change the Administration's position that the President would veto any bill similar to the bills passed in the 105th Congress. The Administration believes that the Federal Government's long-standing commitment to permanent geologic disposal should remain the basic goal of high-level radioactive waste management policy. The Administration believes that interim storage placed in Nevada, as proposed in H.R. 45, would undermine our progress toward permanent geologic disposal of our Nation's nuclear waste and weakens the credibility of regulatory and institutional activities required to maintain the public's confidence in any siting decision.

Q8. Is there any way DOE could accelerate acceptance under its current legal authority? Can DOE accept spent fuel earlier than 2010 under current law, or is legislation needed to begin acceptance earlier?

A8. The 2010 date to receive and emplace spent nuclear fuel at a geologic repository has been the Department's schedule since 1989.

Any acceleration to accept waste would require significant increases in resources dedicated to the program beyond the budgetary caps that have been historically provided to the program and a modification to NRC regulations.

The Administration's Fiscal Year 2000 budget request supports our schedule to complete a draft repository environmental impact statement in July 1999; a final repository environmental impact statement in 2000; and a decision on Yucca Mountain site suitability in 2001. If the site is suitable, providing the necessary funding after a suitability decision would maintain our schedule to submit the license application for repository construction to the Nuclear Regulatory Commission in 2002 and, if licensed, begin emplacement of waste in the repository in 2010.

QUESTIONS FROM REPRESENTATIVE DINGELL

Q1. On November 30, 1998, the Department issued a "Response to Query" on the Supreme Court's decision not to review cases on DOE's contractual duties to the utilities. It indicated that, as a result of this ruling "The Department is concerned about the potential adverse impact of the ruling on the program's ability to develop a permanent solution for the management of the Nation's radioactive waste."

(a) Please describe the impact this ruling might have on the repository program. Does this refer to the potential drain on the Nuclear Waste Fund if it is determined that this source can be used to pay any damages awarded by the U.S. Court of Federal Claims in breach of contract suits brought by nuclear utilities?

(b) Has DOE considered the financial impact of having to adjust equitably the fees paid into the Nuclear Waste Fund, as referenced in Article IX(B) of the Standard Contract (10 CFR 961.1)? If so, what is the impact? How would the Department administer an equitable adjustment to the fee under the user fee mechanism envisioned in H.R. 45? Would some utilities pay a significantly higher fee than others if the Department was forced to equitably adjust the user fee for some utilities?

(c) The Department testified that an outside auditor has already stated that the Department's potential liability ranges from $500 million up to $45 billion. How would the best, worst, and middle case damage scenario affect funding for the program as currently authorized? What would be the impact for each scenario on fee adequacy under the current program?

A1 (a). In its "Response to Query" on the Supreme Court's denial of the government's request for a review of the Court of Appeals decision in Northern States Power, the Department expressed its concern about the potential adverse impact of the ruling on the high-level waste program, based upon the uncertainty as to the source of the funds that would be utilized to pay any damages in breach of contract

suits brought by contract holders. As was stated by Deputy Assistant Attorney General Schiller of the Department of Justice at the February 10, 1999, hearings before this Subcommittee, the Office of Legal Counsel is currently reviewing whether the Judgment Fund could be utilized to fund these judgments against the government, or whether such claims must be paid from the Nuclear Waste Fund. If it is determined that the Nuclear Waste Fund is to be the source of funds to pay damages awarded by the U.S. Court of Federal Claims, the Department is concerned not only about the impact that such expenditures could have on the adequacy of the current 1.0 mil per kilowatt hour fee, but over its ability to secure funding to both pay damages and obtain the funding required to implement the current program plan for development of a high-level radioactive waste repository within current Departmental budget limitations.

A1 (b) The Department has received one request for an equitable adjustment from a contract holder as a result of its delay in beginning waste acceptance. Neither that proposed request nor any contract holder currently in the U.S. Court of Federal Claims has yet provided the government with the sufficient factual support for its monetary damages. As a result, the Department is unable to assess the impact that such request or claims would have on the fees paid into the Nuclear Waste Fund. If the Department were to provide contract holders equitable adjustment to their fees in the form of credits to ongoing Nuclear Waste Fund payments, it would review the impact that such adjustments may have on the adequacy of the 1 mil per kilowatt hour fee, taking into account the reduction in ongoing revenues. Under the user fee mechanism envisioned in H.R. 45, if an adjustment to the fee were required in order to assure full cost recovery, adjustments would be universal and apply to all contract holders. Some contract holders no longer generate nuclear electricity or some contract holders might receive considerable equitable adjustments to their contract. In these situations, some contract holders may pay less for disposal of their spent fuel, while other contract holders who continue to generate nuclear electricity or who do not receive an equitable adjustment under the contract may pay more.

A1 (c). As stated in our response to 1(b), no contract holder currently in the U. S. Court of Federal Claims has provided the government with their basis for monetary damages. An evalution of the financial impact on the program from the ongoing litigation is described in the attached pages from Department's auditor's Financial Statement which was issued September 30, 1998.

(11) Transactions With Other Government Agencies

The NWPA established the Office of Civilian Radioactive Waste Management (OCRWM) within DOE to carry out the provisions of the NWPA and created a separate fund in the Treasury of the United States. All of the investment and borrowing powers of the NWF are limited to transactions with the U.S. Treasury. In discharging its obligations under the NWPA, DOE contracts for services with numerous contractors including other Federal government agencies. Further, significant administrative services are provided by DOE.

As of September 30, 1998, OCRWM owed other government agencies $1,813 for services and costs provided to OCRWM. For the year ended September 30, 1998, OCRWM had incurred costs of $16,606, for services and costs provided by other government agencies.

As discussed in note 2, OCRWM is owed $1,175,211 as of September 30, 1998 from DOE for the disposal of defense high-level waste in civilian repositories. This receivable is comprised of a current portion of $194,660 and long-term portion of $980,551.

(12) Litigation

DOE's Waste Acceptance Obligation

OCRWM is involved with various matters of litigation relating to its obligation in a standard contract (Standard Contract) with utilities to initiate waste acceptance by January 31, 1998, the date specified in NWPA of 1982, as amended. A summary of those actions is included below.

Indiana Michigan and Northern States Cases

The Court of Appeals for the District of Columbia Circuit has ruled that the Standard Contract (1) imposes an unconditional obligation on DOE to initiate waste acceptance by January 31, 1998 and (2) offers a potentially adequate remedy for the failure of DOE to meet this obligation. Indiana Michigan Power Co. v. U.S. Department of Energy, 88 F.3d 1272 (D.C. Cir. 1996); Northern States Power Co. v. U.S. Department of Energy, 128 F.3d 754 (D.C. Cir. 1997). In addition, the Northern States decision precludes DOE from invoking the unavoidable delays clause of the Standard Contract; and from asserting traditional sovereign acts defenses in any suits for damages in the Court of Federal Claims. DOE did not appeal the decision in the Indiana Michigan case. DOE and the State of Michigan filed petitions for certiorari in the Northern States case, which the Supreme Court denied on November 30, 1998.

The Indiana Michigan and Northern States cases do not have a direct impact on the NWF because no contractual damages were sought and the court denied equitable relief, such as an escrow of funds. All other cases discussed in this section, however, are based on the holdings in these two cases.

(Continued)

It is too early to evaluate the ultimate impact on OCRWM of claims based on the decisions in the Indiana Michigan and Northern States cases. Resolution of any such claims will involve highly fact-specific and individualized decisions about the costs incurred by each contract holder as a result of the delay of the Department in meeting its obligation under the Standard Contract. The potential impact, however, is significant. The Department has estimated possible damages to be between $500 million and $1 billion if all utilities filed claims. Some utilities' representatives have estimated damages totaling $45 billion.

Claims based on the decisions in the Indiana Michigan and Northern States cases could impact the NWF in one of two ways. First, if a court determines a contract holder can and must pursue its contractual remedies and proceed under the delays clause of the Standard Contract, the contract holder may be found eligible to receive equitable adjustments of its on-going nuclear waste fees. This "equitable adjustment" of fees would reduce revenues to the NWF. Alternatively, if a court determines a contract holder can pursue a damage suit for breach of contract, the contract holder may obtain a judgment against the Department for money damages. It is unclear whether such a judgment would be paid out of the Judgment Fund, the NWF or some other source of funds. If a judgment were paid out of the Judgment Fund, there is a possibility the Judgment Fund would ultimately be reimbursed by the NWF or other funds appropriated to the Department. If the size of the NWF were to be substantially affected by either equitable adjustments or payments of judgments, the Department might then be obligated to propose fee adjustments pursuant to the NWPA's "full cost recovery" provision, 42 U.S.C. 10222(a)(4). Any such fee adjustments would be "across the board" and applicable to all utilities with currently operating reactors.

Pending Cases: U.S. Court of Appeals for the District of Columbia Circuit

As discussed in detail below, several utilities have brought cases in the U.S. Court of Appeals for the District of Columbia that contain claims based on the decisions in the Indiana Michigan and Northern States cases. The Department believes that, after the exhaustion of any administrative remedies under the Standard Contract, the U.S. Court of Federal Claims is the proper venue for claims based on the decisions in the Indiana Michigan and Northern States cases and anticipates that the Court of Appeals will agree with this view. If, however, the Court of Appeals permits these claims to proceed, it is too early to evaluate their likely outcome. As discussed previously, a judgment against the Department could affect the NWF.

Consolidated Edison Company of New York v. U.S. Department of Energy, case no. 98-1358.

Several utilities filed a petition for review of the Department's fee adequacy determination. In addition, they sought leave to file a complaint in the D.C. Circuit seeking damages and specific relief for the Department's failure to commence disposal of their spent nuclear fuel. These cases were held in abeyance pending disposition by the U.S. Supreme Court of petitions for certiorari filed in Northern States, discussed above. The denial of certiorari on November 30, 1998 has revived the cases. The utilities have filed a motion for appointment of a special master to hear the case which the Department opposed. Briefing of jurisdictional issues will begin in January 1999.

General Electric Company v. U.S. Department of Energy, case no. 98-1356; Arizona Public Service Commission v. U.S. Department of Energy, consol. cases no. 98-1346 and 98-1348.

Theses cases involve petitions filed in the Court of Appeals for review of the Department's failure to commence disposal of spent nuclear fuel in an attempt to ensure that the decision in the Northern States case applies to utilities that were not parties to that case. On January 5, 1999, the Court of Appeals ordered the petitioners to show cause why their petitions should not be dismissed in light of the decision in the Northern States case that the Standard Contract provides a potentially adequate remedy. While the Department believes it is likely the petitions will be dismissed, it is possible the utilities then will file suit in the United States Court of Federal Claims or pursue an administrative claim with the Contracting Officer for the Standard Contract.

Pending Cases: U.S. Court of Federal Claims

As discussed in more detail below, several utilities have brought cases in the U.S. Court of Federal Claims that contain claims based on the decisions in the Indiana Michigan and Northern States cases. In the first three cases, the Court of Federal Claims has found that the Department has breached its contracts with the three utilities, each of which has only one shutdown reactor, and that no contractual remedy exists because these utilities are not paying ongoing fees. The Department currently is engaged in discovery to determine the amount of damages to be paid. It is too early to evaluate the ultimate amounts of the judgments against the Department in these cases. As discussed previously, these judgments could affect the NWF.

In the other seven cases, the Court of Federal Claims has not issued any final decisions. The Department is taking the position in these cases that the utilities, which have operating reactors and are subject to the payment of ongoing fees, must exhaust the administrative process at the Department before filing suit in the Court of Federal Claims. It is unclear whether there ultimately will be a contractual remedy or a court judgment in any of these cases. As discussed previously, an equitable adjustment of fees or a judgment against the Department could affect the NWF.

(Continued)

Yankee Atomic Electric Co. v. United States, case no. 98-126C, Connecticut Yankee Atomic Power Company v. United States, case no. 98-154C, and Maine Yankee Atomic Power Company v. United States, case no. 98-474C.

On February 18, 1998, the Yankee Atomic Electric Company filed suit for damages in the amount of $70 million associated with the extended storage of 127 metric tons of spent nuclear fuel onsite at its shutdown nuclear plant in Massachusetts. Yankee asserted that while it had paid the contractual fees in full, the Department did not commence disposal by January 31, 1998, and had thus breached the Standard Contract. The Department argued that any delay in performance was redressable under the avoidable delays clause of the Standard Contract and that Yankee's sole remedy is a claim for equitable adjustment through administrative procedures described in the contract, as opposed to a suit for damages based on a breach of contract claim.

On October 29, 1998, the U.S. Court of Federal Claims found that the utility need not exhaust its contractual remedies and that the Department was in breach of contract. It therefore granted summary judgment for Yankee on the issue of the government's liability. The Court also stated that where complete relief is not available under a contract, the controversy is not limited to administrative remedies in the contract ("Disputes" clause) and may be tried in court. The Court found that statutory restrictions on the adjustment of the one-time fee precluded the Department from retroactively adjusting Yankee's charges to reflect its onsite storage costs and that the Department's authority to make expenditures from the NWF was restricted to specifically listed activities which do not include paying the costs of onsite storage.

Similar suits had been filed by Connecticut Yankee and Maine Yankee seeking $90 million and $128 million respectively for the Department's failure to remove spent nuclear fuel from their shutdown reactor sites. On October 30, 1998 and November 3, 1998, the U.S. Court of Federal Claims issued orders finding that, for the same reasons stated in the Yankee Atomic decision, the Department is contractually liable to the utilities.

The next phase of the "Yankee" cases will determine the damages payable. While it is not expected that the utilities will receive all of the damages that they seek, potential government liability from these three cases could be in the tens of millions of dollars. As discussed previously, these judgments could affect the NWF.

(Continued)

Northern States Power Company v. United States, case no. 98-484C; Commonwealth Edison Company v. United States, case no. 98-621C; Southern Nuclear Operating Company, including Alabama Power Company and Georgia Power Company v. United States, case no. 98-614C; Duke Power, a Division of Duke Energy Corporation v. United States, case no. 98-485C; Florida Power and Light Company v. United States, case no. 98-483C; Indiana Michigan Power Company v. United States, case no. 98-486C; Sacramento Municipal Utility District v. United States, case no. 98-488C.

In addition to the "Yankee" cases, seven other utilities, most with currently operating reactors, have filed suits in the U.S. Court of Federal Claims seeking damages totaling over $4 billion. In several of these cases, the utilities have motions for summary judgment on contract liability pending that are similar to those filed in the "Yankee" cases. In opposition, the Department has filed motions to dismiss the cases on the ground that the utilities have not exhausted their contractual remedies by applying for equitable adjustment of their ongoing fees. Depending on how the Court decides these cases, damages could be paid out of the Judgment Fund or the NWF, or there could be an equitable adjustment of fees that would affect revenues currently being deposited into the NWF. While it is too early to evaluate the ultimate outcome of these cases, the potential government liability from these cases could be substantial but most likely considerably less than the $4 billion claimed in the complaints. As discussed previously, an equitable adjustment of fees or a judgment against the Department could affect the NWF.

Should the Department not prevail on its motion to dismiss for the utilities' failure to exhaust their administrative remedies, it is likely that many more utilities will file similar suits for damages. If the Department does prevail, it is likely that the seven utilities, as well as many other utilities would file administrative claims with the Department's Contracting Officer.

Pending Administrative Claim

On August 21, 1998, one contract holder submitted a proposed bilateral modification and request for equitable adjustment to the Department's Contracting Officer for the Standard Contracts. The proposal requests non-monetary and monetary relief for the Department's delay in disposing of the contract holder's spent nuclear fuel. The Department is in the process of considering the proposal. If negotiations are unsuccessful, the Department anticipates that the contract holder may file a certified claim pursuant to Article XVI ("Disputes" of the standard contract) and, if the Contracting Officer denies such a claim, this decision may be appealed to the Department of Energy Board of Contract Appeals (EBCA). A decision by the Contracting Officer or the EBCA to grant an equitable adjustment of fees could affect the fund.

(Continued)

Pending Case: U.S. District Court, District of Minnesota

Patrick Roedler v. U.S. Department of Energy, case no. 98-1843.

On August 7, 1998, the plaintiffs in this case, ratepayers of the Northern States Power Company who are not signatories to the Standard Contract, filed suit alleging essentially the same breach of contract claims alleged in the Northern States Court of Claims cases above. Plaintiffs contend that the Department's failure to commence accepting spent nuclear fuel by January 31, 1998, has caused them substantial damages due to continuing onsite storage costs at Northern States' Monticello and Prairie Island nuclear generating plants. They assert that if onsite disposal of Prairie Island's spent nuclear fuel does not begin before 2004, the facility's onsite storage capacity will be exhausted and that ratepayers will incur substantial payments associated with a premature shutdown of the Prairie Island plant. Relying on the Tucker Act, which waives the United States sovereign immunity where there exist express or implied in fact contracts, the plaintiffs claim that they are entitled to recover over $340 million. The Department has moved to dismiss on the ground that the plaintiffs have no contractual rights in this case and that plaintiffs are litigating the same breach of contract claim as in Northern States. It appears that the Department's chances of prevailing on the merits are good. There is a low probability of an impact on the NWF.

Other Matters

OCRWM is involved in several other matters of litigation in its normal course of business. Management does not believe that the ultimate resolution of these matters will have any material adverse impact on the NWF.

(13) Additional Waste

In November 1993, DOE's Office of Environment, Safety and Health issued a report that identified additional waste owned by the Department, from both commercial and defense projects, that may require disposal in a civilian repository. OCRWM has been in the process of evaluating the additional costs for disposal of these waste forms. The need to consider additional waste forms has raised new issues that complicate cost projections as the volume of wastes requiring disposal, and the corresponding cost of regulatory compliance, facility and equipment designs, and cost of operations are unknown at this time. The range of costs ($200 to $500) presented in the notes to OCRWM's financial statements as of September 30, 1995 are incomplete and have not been revised. Therefore, no amounts have been recorded in the accompanying financial statements as of September 30, 1998, because the amount of fees attributable to this waste is not reasonably able to be estimated at this time. OCRWM is not obligated to accept any waste until the cost of its disposal is paid by the owners/generators of the waste.

(Continued)

Q2. In testimony before the Energy and Power Subcommittee on February 10, 1999, Mr. Lake Barrett testified on behalf of the Department that enactment of H.R. 45 "would undermine our ability to open the repository as scheduled in 2010 by shifting budget priorities and work effort to an interim storage facility" and that "the proposed bill's funding provisions do not provide sufficient funding resources to support the simultaneous construction and operation of an interim storage facility and the repository program . . ." Mr. Barrett further testified "the bill could result in a funding gap of substantially over one billion dollars."

(a) Please describe how the requirements of H.R. 45 would affect the funding for the repository program. What is the average fee DOE needs to collect on a kilowatt-hour of nuclear energy in order to ensure that the program in H.R. 45 is paid for solely by the generators and owners of nuclear waste? Please include any data necessary to explain your conclusions, including information on the billion dollar funding gap.

(b) Please explain how H.R. 45 might delay DOE's projected repository opening date of 2010: (1) How long might such a delay be? (2) How would H. R. 45 affect the interests of various utilities in the "queue"?

A2 (a). The attached table provides staff estimates of the funding profile for H.R. 45, based on cost estimates that have been provided in the recently issued Viability Assessment and the Total System Life Cycle Cost, and currently available cost information regarding the interim storage provisions in H.R. 45. Based on historical appropriation patterns, H.R. 45 does not provide sufficient funding resources to support the simultaneous construction and operation of an interim storage facility and the repository program. The estimates assume (1) the discretionary appropriations level for the program continues at the FY 1999 level; (2) collections of the defense share of the costs are provided by 2003 totaling the FY 2003 waste acceptance schedule in H.R. 45; (3) $85 million's released from the FY 1996 appropriations; (4) the one-time fee payments are directed into the Nuclear Waste Fund for the purposes of meeting the overall Federal budgetary requirements; and (5) neither the Nuclear Waste Fund balances nor the investment income from the fund is available until after FY 2010. If both the interim storage facility and repository schedules envisioned by H.R. 45 were supported, enactment of the bill in its current form could result in a funding gap of $1-2 billion. DOE estimates it would need to collect an average fee of approximately 1.3 mils over theperiodfrom FY2000-FY2010 in order to ensure the programs in H.R.45 are paid for solely by generators and owners.

A2 (b)(1). Preliminary estimates of funding required to implement H.R. 45 range up to as much as $11.6 billion in year of expenditure dollars, year 2000 through the year 2010. Cost estimates to complete the work necessary to initiate activities to operate a repository under the current program are on the order of $10.1 billion, of which approximately $6.5 billion would be needed to complete the characterization, design and construction activities at the repository through the year 2010. If H.R. 45 were to be implemented without the necessary funding above that required for the repository only, significant delays to the repository program would be incurred. The Program has not evaluated this scenario directly however, reducing the funds required to characterize, design, and construct the repository by the amounts required to implement interim storage would require a completely new approach and schedule for repository operation.

A2 (b)(2). Section 508 of H.R. 45 establishes acceptance schedules and priorities for the Department's acceptance of spent fuel and high-level radioactive waste and provides that, once DOE has achieved the current contract rate for spent nuclear fuel (SNF) from civilian reactors, the Secretary shall accept SNF from foreign research reactors and SNF from naval reactors and high-level radioactive waste from atomic defense activities in an amount that is at least 25 percent of the difference between the contract rate and the rates established elsewhere in H.R. 45, or 5 percent of the total amount of SNF and high-level radioactive waste actually accepted, whichever is higher. Under this provision, the Secretary may not grant priority acceptance to SNF from permanently shutdown reactors unless the quantity of non-commercial SNF and high-level waste accepted is less than the acceptance rate prescribed in H.R. 45. Our analysis of this provision is that it would reduce the Department's flexibility under current law to address civilian nuclear power reactors which have permanently ceased operation once we begin spent fuel acceptance.

BUDGET AUTHORITY - YEAR OF EXPENDITURE DOLLARS

[illegible]

(\$ MILLIONS)

[illegible]

WPO RAIL/ROAD

[illegible]

CATEGORY	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	TOTAL (\$)	ATTRIB (%)
YUCCA MOUNTAIN	500	116	144	505	460	625	621	1,100	1100	140	620	700	6743	35%
INTERIM STORAGE	97	122	140	145	450	450	425	360	360	360	360	450	6553	61%
PROG MANAGEMENT	47	98	50	50	50	50	50	50	50	50	50	50	548	20
TOTAL PROGRAM	644	736	836	904	960	965	1096	1510	1467	1140	1063	811	11823	55%
NUCLEAR WASTE	645	736	836	904	960	965	1096	1510	1467	1140	1063	811	11823	55%
DEFENSE OUTFOR	-199	200	200	200	-200	-200	-200	-200	-200	-200	-200	-200	-2000	-33%
DEFENSE CAP/TRF	-97	122	144	-117	-145	0	0	0	0	0	0	0	-497	
DEFENSE CAP/TRF	-97	122	144	-117	-145	0	0	0	0	0	0	0	-497	
APPROPRIATION/ENT	-154	154	-154	-154	-154	-154	-154	-154	-154	-154	-154	-154	-1694	-33%
TOT. OFFSETTING	-447	476	-708	-711	-753	-354	-354	-354	-354	-354	-354	-354	-3588	
NET APPROP/ENT	198	50	128	193	207	611	1042	1156	1113	786	709	457	8235	
MANDFEE	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		0.1
OFFSETTING COLLECTION	-	0.1	0.1	0.1	0.1	0.9	1.4	1.1	1.1	1.1	1.1	0.1		0.8
MILLAGE PER EQUIVALENT	-	0.1	0.1	0.1	0.1	1.4	1.9	2.1	2.1	1.1	1.1	0.1		1.1
[illegible]													6813	
[illegible]													1881	
[illegible]	-													0.1

NOTES:

- This table assumes historical appropriations patterns - discretionary appropriations level for the program continues at the FY 1999 enacted level.

- This table assumes that Nuclear Waste Fund balances and investment income are not available until after FY 2010.

- This table assumes that the Defense Nuclear Waste Disposal Appropriations assumes a catchup of \$1.4 billion by FY 2003 to meet the waste acceptance provisions in H.R. 45.

- This table is based upon the currently available information compiled to date and limited integration between the repository and alternative waste storage, transportation, and acceptance capabilities.

- The Yucca Mountain and transportation portion of interim storage data in this table are based on the VA/TSLCC cost estimate of 12/18/98.

- The annual spending profile could be modified if construction and procurement strategies are altered.

Storage Alternatives Pending Repository Completion

Q3. Under any current law, and in the absence of a repository, does DOE have authority to store nuclear waste at existing Federal facilities or any other public or private sites?

A3. The Nuclear Waste Policy Act prohibits the DOE from siting an interim storage facility until the Secretary has recommended a site for a repository to the President. Furthermore, section 302(d) bars DOE from using Nuclear Waste Fund money to construct or expand any facility unless such construction or expansion is expressly authorized by statute. Although DOE has authority under the Atomic Energy Act to support research and development in nuclear power, manage the Nation's nuclear defense programs, and further the nuclear weapons nonproliferation policy of the United States, these authorities do not provide DOE authority to establish a Centralized interim storage facility for conunercial spent ftiel. The elaborate scheme in the NWPA provides for storage and disposal of this material, and the particular limitations of that specific statute must be followed.

Q4. As used in the context of the Nuclear Waste Policy Act, the Standard Contract, and H.R. 45, what is DOE's legal interpretation of the terms "accept title" and "take title"? Under existing law, is DOE able to take title to waste currently at reactor sites?

A4. Under 302(a)(1) of the Nuclear Waste Policy Act, DOE is authorized to enter into contracts for the acceptance of *title*, subsequent transportation, and disposal of utility spent nuclear fuel of domestic origin. Section 302(a)(5)(B) requires that such contracts provide for DOE to *take title* to such spent fuel as expeditiously as practicable following commencement of operation of a repository. Section 123 of the Act further provides that delivery, and *acceptance* by DOE, of spent nuclear fuel for a repository constructed under the Act, shall constitute a transfer to DOE of *title* to such spent fuel. Therefore, DOE has clear authority to take title to utility spent fuel at reactor sites for purposes of disposing of the fuel in a repository.

Pursuant to these authorities, DOE has entered into the Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste with all U.S. nuclear utilities. In these Standard Contracts, DOE agreed to "accept" or "take" title to the utility spent fuel. The words "accept" and "take" are generally used synonymously, consistent with the foregoing statutory provisions.

Although there is no explicit prohibition on DOE taking title to utility spent fuel for purposes of onsite storage, it is not clear that Congress intended such activities under the NWPA. The findings and purposes provisions of the Nuclear Waste Policy Act provide that the generators and owners of spent fuel have the primary responsibility to provide for and the responsibility to pay the costs of interim storage until such spent fuel is accepted by DOE in accordance with the Act. In addition, section 302(d) limits the use of the Nuclear Waste Fund to certain specified expenditures and onsite storage is not one of the enumerated uses. In addition, the Fund may not be used for the construction or expansion of any facility unless such construction or expansion is expressly authorized by the Act or subsequent legislation.

On February 25, 1999, before the Senate Energy and Natural Resourees Committee, Secretary Richardson announced a proposal to further examine the possibility of the Department taking title to spent fuel onsite and assume management responsibility until such time as it can be placed in a permanent repository. We plan to continue to examine this concept and determine what legislation may be necessary to implement it.

Q5. Has the Department considered the advisability of legislation authorizing DOE to take title to utility waste and store it on-site at reactors until the material can be disposed of at the permanent repository?

A5. On February 25, the Secretary stated that he is looking at alternatives to interim storage. One alternative is taking title to spent nuclear fuel and assuming management responsibilities for its storage on-site at reactors until such time as it can be placed in a permanent geologic repository.

Q6. Under the terms of the standard contract (Article IV(B)(2)): "DOE shall arrange for, and provide, a cask(s) and all necessary transportation of the SNF and/or HLW from the Purchaser's site to the DOE facility. Such cask(s) shall be furnished sufficiently in advance to accommodate scheduled deliveries. Such casks shall be suitable for use at the Purchaser's site, meet applicable regulatory requirements, and be accompanied by pertinent information ..."

DOE has yet to provide such casks to utilities, despite the fact that the date has passed for DOE to accept waste. Utilities have been forced to make financial decisions regarding casks for storage.

(a) What plans does the Department have for fulfilling its contractual obligations in this area?

(b) NRC is currently reviewing 6 dual purpose casks for potential licensing

(1) Will DOE provide casks or will DOE accept any NRC licensed cask for transportation?

(2) If DOE accepts any NRC-licensed cask, does DOE intend to reimburse utilities for those casks?

(3) Is DOE working with NRC to ensure that dual purpose casks will meet DOE's needs? If DOE insists on using its own casks, will DOE accept responsibility for transferring the waste to its own cask.

(c) Please describe the Department's efforts to date to work with utilities to resolve these matters.

A6(a). In accordance with the provisions of Section 137(a) (2) of the Nuclear Waste Policy Act, as amended, the Department intends to rely on the private sector in fulfilling its contractual obligation to provide casks for the transportation of spent nuclear fuel from civilian nuclear reactors. The Department has developed a draft Request for Proposal (RFP) for Waste Acceptance and Transportation Services in preparation for soliciting proposals from the private sector. In the draft RFP, the Department has required that its contractors provide transportation casks suitable for use at the various civilian power reactors facilities.

A6(b)(1). The Nuclear Regulatory Commission (NRC) is currently reviewing 6 dual-purpose casks for potential licensing. A number of utilities plan to use these casks to store spent nuclear fuel at their facilities. The Department has notified contract holders that it plans to accept spent nuclear fuel in dual-purpose canisters that are licensed by the NRC.

A6(b)(2). The Department has previously informed the contract holders that, if the Department accepts spent nuclear fbel in a dual purpose cask provided by the utility, the Department will share with the contract holder any savings it may realize as a result of the use of the utility provided dual-purpose cask.

A6(b)(3). The Department is taking steps to ensure that the design of the Federal repository receiving facility is compatible with all dual-purpose casks currently under NRC review. The Department recognizes that standardization of design, while an admirable goal, must be tempered by the reality that there are already over 70 utility sites storing spent nuclear fuel, each with its own design considerations. The Department is in the process of developing performance based interface criteria that we plan to share with the nuclear industry. We believe the criteria a Federal facility. With respect to DOE transferring waste from utility supplied casks to DOE supplied casks, the Department intends to accept spent fuel from utilities in any dual-purpose cask that is approved for use by the NRC at the time of acceptance.

A6(c). The Department has participated in discussions with its contract holders for a number of years to resolve the issues related to the use of NRC approved dualpurpose casks by the contract holders and remains willing to work with the contract holders to resolve these issues.

QUESTION FROM REPRESENTATIVE MARKEY

Q1. You state in your testimony that H.R 45 does "not provide sufficient funding resources to support the simultaneous construction and operation of an interim storage facility and the repository program." Please describe the basis for you conclusion that enactment of the bill could result in a funding gap of substantially over one billion dollars. If this bill is passed, would DOE recommend increase of the utility Nuclear Waste Fund fees in order to pay for both storage and disposal?

A1. H.R. 45 will undermine our ability to open a repository as scheduled in 2010 by shifting budget priorities and work effort to an interim storage facility. Based on historical appropriations patterns, the proposed bill's funding provisions do not provide sufficient resources to simultaneously support both the construction and operation of an interim storage facility and the repository program.

Our preliminary analysis of the funding provisions in H.R. 45 indicates that it does not provide access to the Nuclear Waste Fund balance. Even without adding an interim storage facility, budgetary constraints could jeopardize our goal for an operational repository in 2010.

QUESTION FROM THE HOUSE COMMERCE COMMITTEE

Nuclear Waste

Q1.b. Could utilities sue for breach of contract if fees are raised to pay for interim storage?

A1.b. In accordance with section 302 of the Nuclear Waste Policy Act, the standard disposal contracts currently provide that DOE will adjust the fee, if necessary, in order to assure full cost recovery by the Government. For that reason, if DOE

had to raise the fee to cover the cost of interim storage under H.R.45, the increase in fee would not appear to constitute a breach by DOE of the standard disposal contracts.

Q2. You suggest that H.R.45's "waste acceptance deadline of June 2003 is very optimistic." If DOE cannot meet this artificial deadline, will the nuclear utilities have yet another cause of action over which to sue the Department? If so, what would be the impact of such litigation on DOE's ability to keep the permanent repository program on track?

A2. Under section 101 of H.R.45, the Secretary would be required to accept spent nuclear fuel for storage at an interim storage facility beginning not later than June 30, 2003. Under section 401 of H.R.45, DOE would be required to amend its standard disposal contracts as necessary to implement this and other provisions of H.R.45. Based on the D.C. Circuit and Court of Federal Claims rulings to date interpreting the NWPA and the standard disposal contract fuel acceptance obligations as they exist today, if these contracts were amended to impose on DOE an obligation to perform by June 30, 2003, it is possible that a court would find that the utilities were entitled to either an award of damages or relief under the terms of the contract were DOE to breach the obligation. Substantial damage awards, if funded through the Nuclear Waste Fund, are likely to have a significant adverse affect on the Department's ability to conduct the activities necessary to keep the permanent repository program on track.

QUESTION FROM REPRESENTATIVE MARKEY

Q3. You also say that beginning site preparation for an interim storage facility before Yucca Mountain is suitable "would undermine public confidence that a repository evaluation will be objective and technically sound." Why is that?

A3. During my testimony before the Committee, I was referring to the specific provisions of H.R. 45 that designates the interim storage facility site at Area 25 within the Nevada Test Site near Yucca Mountain. Naming a site before completing our evaluation of Yucca Mountain would undermine the progress we have made and are making. This is a view that also is shared by the Nuclear Waste Technical Review Board, as expressed by Dr. Cohon during this hearing as well as others within and outside the Administration.

An unbiased scientific evaluation should be the basis for any decision to site a permanent geologic repository. We are working toward that goal in 2001 when a decision to recommend the site is expected to be made. Designating the interim storage site in Nevada before completing the scientific work could lead to the perception that the decision has already been made to site the permanent repository there as well. This might suggest that not all the necessary scientific and engineering work has been completed prior to making such an important decision on the permanent management of our Nation's spent nuclear fuel and high-level radioactive waste. Therefore, designating Area 25 within the Nevada Test Site near Yucca Mountain as the interim storage site would bring into question the public's confidence in the framework for siting a geologic repository. The Environmental Protection Agency spoke to this issue in addressing previous legislation similar to H.R. 45 that designated an interim storage site in Nevada.

Because of our commitment to permanent geologic disposal, rather than a short-term solution, Secretary Richardson has stated that he opposes H.R. 45 and would recommend to the President that he veto the legislation if Congress passes it in its current form. Furthermore, he has stated that he would consider alternatives to legislation siting an interim storage facility.

Q4. The Viability Assessment DOE recently issued predicts a maximum dose following closure of the repository of 300 millirem. NAS recommendations, on which the standards will be based, suggest a standard of roughly 2-30 millirem that extends to the peak dose. Why is this not a "showstopper?"

A4. The Viability Assessment represents the status of our work as of 1998. The National Academy of Sciences' recommendations are input to the process of determining a regulatory standard for the proposed repository at Yucci Mountain. Pursuant to the Energy Policy Act of 1992, the Environmental Protection Agency (EPA) is in the process of promulgating a radiation protection standard for Yucca Mountain. Currently, there is no such standard. For these reasons and until a regulation is finalized, we have no standards to measure against and, therefore, it would be inappropriate to consider preliminary calculations as "showstoppers."

However, while there is not yet a final standard, EPA has historically used a 10,000 year period as a time of compliance. Additionally, the Nuclear Regulatory Commission has recently proposed a 10,000 year regulatory period for Yucca Mountain. During that period, the Viability Assessment indicates that the mean peak an-

nual dose rate to an average individual in the future population would be about 0. I milliremi/year. The 300 millirem peak dose referred to in the Viability Assessment was predicted to occur 300,000 years from now.

QUESTION FROM THE HOUSE COMMERCE COMMITTEE

Nuclear Waste

Q5. Are you aware of any current state or local laws or regulations that could be "obstacles" to carrying out the Atomic Energy Act or the proposed Nuclear Waste Policy Act? If so, what are they?

A5. I am not aware of any specific state or local law or regulation that would be an "obstacle" to carrying out the Atomic Energy Act or the proposed Nuclear Waste Policy Act. However, there are many state and local environmental, land-use, and other requirements that are applicable to DOE and its contractors in carrying out its functions under the Atomic Energy Act and that may be imposed upon DOE in carrying out its functions under the proposed legislation if it were enacted. The determination of whether or not a particular requirement would be an obstacle would have to be made on the basis of an examination of the particular circumstances to which the requirement would be applied in light of existing case law since neither the Atomic Energy Act nor the proposed changes in the Nuclear Waste Policy Act contain a definition of obstacle.

QUESTION FROM REPRESENTATIVE MARKEY

Q6. The Viability Assessment summarized scientific studies of possible exposures due to deep geologic disposal of nuclear waste at Yucca Mountain. Are you aware of any studies of the potential health impacts if nuclear waste were left in an above-ground storage facility in Nevada for thousands to hundreds of thousands of years?

A6. We know of no studies of potential health effects from a long-term above-ground storage scenario in Nevada (thousands to hundreds of thousands of years) that have ever been performed by the Office of Civilian Radioactive Waste Management or others.

RESPONSES OF THE DEPARTMENT OF JUSTICE TO FOLLOW-UP QUESTION FROM HON. JOHN D. DINGELL, RANKING MEMBER

Question: In its testimony before the Energy and Power Subcommittee's February 10, 1999 hearing, the Department of Justice stated that its Office of Legal Counsel is preparing an opinion as to whether payments of judgments in cases relating to the Department of Energy's obligations under the Nuclear Waste Policy Act of 1982 should be disbursed from the Nuclear Waste Fund or the Judgment Fund.

(a) When does the Department expect this memorandum to be completed?

(b) Please provide a copy of the memorandum to the Subcommittee upon its completion.

Response: At the present time, the Office of Legal Counsel is awaiting input from the Department of Energy regarding its views about appropriate and permissible uses of the Nuclear Waste Fund. After the Office of Legal Counsel receives the Department of Energy's views, it will develop its legal opinion regarding this issue. Although no specific date has yet been established for the completion of these tasks, the Department of Justice will provide a copy of that opinion to the Department of Energy after it is completed. Because the opinion is being prepared for the Department of Energy, and because we view that opinion to be a protected document subject to disclosure only by or with the permission of the requesting agency, the Department of Energy is the appropriate agency from which to seek a copy of the opinion, once it is issued.

RESPONSES OF STUART E. SCHIFFER, DEPUTY ASSISTANT ATTORNEY GENERAL, COMMERCIAL LITIGATION BRANCH, CIVIL DIVISION, DEPARTMENT OF JUSTICE, TO FOLLOW-UP QUESTIONS FROM CHAIRMAN JOE BARTON

Question 1: Some estimate the potential liability of the Federal government from failure of the nuclear waste program is $40 to $80 billion. Has the Justice Department estimated this potential liability? If so, what is it?

Response: The Department of Justice has not independently estimated the potential liability arising out of potential claims from the Department of Energy's inability to begin acceptance of spent nuclear fuel from commercial utilities by January 31, 1998. However, to date, ten utilities have filed complaints in the United States

Court of Federal Claims seeking damages totalling approximately $8.5 billion for alleged breaches of the standard disposal contracts and takings under the fifth amendment of the United States Constitution. The Department of Energy is aware of the total number of entities holding standard contracts, and we presume that the majority, if not all, of them will seek relief either through the United States Court of Federal Claims or through the administrative process established in the standard contract's Disputes clause.

Question 2: Section 302(d) of the Nuclear Waste Policy Act of 1982 specifies the uses of the Nuclear Waste Fund. Would payments to utilities from the Fund be permitted under the Act?

Response: We are not presently aware of any prior Federal court decision that has addressed this issue. Further, the Department of Justice has not yet taken any position regarding this particular matter. We are presently awaiting an opinion from the Office of Legal Counsel regarding whether the Nuclear Waste Fund, as opposed to the Judgment Fund or some other source of funding, would be the appropriate source for payment of any judgment rendered by the United States Court of Federal Claims for a breach of the standard contract. It is possible that the Office of Legal Counsel's opinion could address the matter of permissible uses of the Nuclear Waste Fund, to the extent that it affects the use of the Fund for payment of Federal court judgments.

Question 3: If courts order the Federal government to make payments to utilities as a result of DOE'S failure to meet its legal obligation to begin acceptance on January 31, 1998, how would those payments be made? Would the money come out of the Judgment Fund? Would it come out of the Nuclear Waste Fund? Please provide a copy of any opinions from the Office of Legal Counsel on this issue.

Response: We are presently awaiting an opinion from the Office of Legal Counsel regarding this matter.

Question 4: Would the potential liability faced by the Federal government due to DOE's failure to begin acceptance of nuclear waste on January 31, 1998 be reduced if acceptance is accelerated from 2010 to 2003?

Response: The subcommittee's question does not lend itself to a definitive answer. To respond fully to this question, it would be necessary to focus upon specific statutory provisions. The United States Court of Appeals for the District of Columbia Circuit has held, in *Indiana Michigan Power Co. v. United States,* 88 F.3d 1272 (D.C. Cir. 1996), that the Nuclear Waste Policy Act creates an obligation in the Department of Energy, reciprocal to the utilities, obligation to pay, to start disposing of spent nuclear fuel no later than January 31, 1998. However, neither the NWPA nor the standard disposal contracts themselves identify a date certain by which the Department of Energy must complete its disposal of the spent nuclear fuel from any particular utility. The issue of any damages that might be awarded for any delay in the Department's ability to begin acceptance in 1998 should be determined by reference to the Act and the terms of the standard contracts.

Question 5: In the Department's view, are the Standard Contracts entered into between the utilities and DOE contracts, or are they rules?

Response: Litigation involving the standard contracts is still pending in the Federal courts. As a result, the Department's pending matter policy applies to any discussion of the matters at issue in those cases. However, we note that the United States Court of Appeals for the District of Columbia Circuit ruled in its May 5, 1998 order in *Northern States Power Co. v. United States,* 1128 F.3d 754 (D.C. Cir. 1997), that performance of an obligation to begin disposal of spent fuel is enforceable only through contractual remedies arising under the standard contract.

Further, with regard to claims for money damages arising out of the Department of Energy's inability to begin acceptance of spent nuclear fuel by January 31, 1998, the United States Court of Federal Claims, in *Yankee Atomic Electric Co. v. United States,* 42 Fed. Cl. 223 (1998), viewed the standard contract as a contract pursuant to which, if breached, the court could award monetary relief.

DEPARTMENT OF ENERGY
WASHINGTON, DC 20585
June 10, 1999

The Honorable JOE BARTON
Chairman, Subcommittee on Energy and Power
Committee on Commerce
U.S. House of Representatives
Washington, DC 20515

DEAR MR. CHAIRMAN: On March 12, 1999, Bill Richardson, Secretary of Energy, testified regarding H.R. 45 and the nuclear waste issue.

Enclosed are the answers to questions submitted on behalf of Representative Markey to complete the hearing record.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Barbara Barnes, on (202) 586-6341.

Sincerely,

JOHN C. ANGELL
Assistant Secretary, Congressional and Intergovernmental Affairs

Enclosure

QUESTIONS FROM REPRESENTATIVE MARKEY

Secretary's Proposal

Question 1. In your testimony you note that the utilities "are concerned about the physical and regulatory limitations on their continued storage of spent fuel at their reactor sites." Could you explain the real needs of the utilities as you understand them and explain whether your proposal would meet those needs? Is there any public health and safety reason utilities could not continue to store their nuclear waste on site until a repository could accept it?

Answer 1. The spent fuel storage pools of some operating nuclear power plants are reaching their licensed capacity. Some utilities have built on-site dry storage, while others will need to in the future. In addition, a number of utilities are pursuing off-site dry storage in private fuel storage ventures. Each utility site may be different depending on the particular situation at those utility sites, and we are discussing those issues with utilities. In some cases, adding spent fuel dry storage requires significant licensing activity. The Department's proposal to take title is intended to address those costs that a utility incurs because of the delay in spent fuel acceptance, and reduce or eliminate the litigation against the Department. The Nuclear Regulatory Commission is responsible for protecting public health and safety during storage of spent fuel at reactor sites. The Commission determined in its Waste Confidence proceeding that spent fuel can be safely stored on site for at least 30 years after a plant's operating license has expired.

Question 2. How would DOE taking title of the waste affect the environmental, health, and safety regulations that govern storage of spent fuel? How would it affect regulations over transportation of the fuel? Would DOE accept external regulation by NRC and other agencies over on-site storage?

Answer 2. The Nuclear Regulatory Commission's regulations govern safe storage of spent fuel at reactor sites. DOE taking title to the spent fuel should have no effect on either the Commission's regulations or the Department of Transportation's safety regulations. However, we will be in consultation with the Commission as we explore the proposal. We would expect that these facilities would continue to be regulated by the Commission and the Department would comply with Commission requirements.

Question 3. In your testimony you say that funding for your proposal "could come from a mix of Nuclear Waste Fund balances, current payments, or appropriated funds." Would current Nuclear Waste Fund fees be sufficient to cover the costs of on-site storage in addition to the repository program? When you refer to "appropriated funds" do you mean money from U.S. taxpayers funding storage of commercial nuclear reactor waste?

Answer 3. We are currently having discussions with those utilities that are interested in our proposal. These discussions should provide us with considerably more information on the likely costs of implementing the proposal and whether it could be funded from Nuclear Waste Fund balances, mil-fee payments, appropriated funds or a mix. At present, all funds to pay the costs of the radioactive waste management program are appropriated by Congress under discretionary accounts. These accounts include funds derived from the Nuclear Waste Fund, which pay costs for the disposal of commercial spent nuclear fuel, and the Defense Nuclear Waste Disposal ap-

propriation, which pay the costs for the disposal of government-managed spent nuclear fuel and high-level radioactive waste.

Question 4. In your testimony you also say "We believe we could implement this proposal by modifying the existing contracts with utilities. We would still have to address a range of issues . . ." Could your proposal be carried out under current law, or would new legislation be needed?

Answer 4. We believe we could implement this proposal through our utility contracts, but I have been advised by my General Counsel that it would be preferable to get clarifying legislation before implementing the proposal.

Question 5. Would you accept participation from some utilities while others pursue litigation? If so, wouldn't each utility accept the approach in which the government would have to pay the most?

Answer 5. The Department wants to discuss the taking title option with the utilities and has already begun doing so. The Department is seeking to develop an approach that would appeal to as many utilities as possible. Recognizing that there are some utilities in unique circumstances, the Department is ready to proceed without full participation. Those utilities who do not accept the take title option could still pursue the contractual remedies specified by the Standard Contract for Disposal of Spent Nuclear Fuel and/or High Level Radioactive Waste, 10 CFR 961.

Litigation

Question 6. In your testimony you estimate $2-3 billion cost to DOE for paying utilities to store the nuclear waste at reactor sites until a permanent repository can accept it. You also note that ten utilities are asking for $8.5 billion in damages, and that "potential claims from other utilities could be many times this amount." What damages are the utilities seeking, if not costs to store the waste? Are the utilities' claims a reasonable assessment of the expenses they are incurring due to DOE's failure to take waste according to schedule?

Answer 6. Examples of the damages sought by the utilities include: additional costs associated with extended on site storage of spent fuel, interest on these costs, deprivation of the effective use and value of the site, and reactor decommissioning. The Department has not yet seen the specific cost bases for the damages claimed by the utilities and, therefore, cannot make a reasonable assessment of the extent to which these costs are due to our delay.

Funding

Question 7. I understand that DOE has recently projected project receipts and expenses out to 2015 under current law and under H.R. 45. Are utility payments sufficient to fund the current program? Would utility payments be sufficient to fund the program under H.R. 45?

Answer 7. The Department has developed preliminary estimates of program funding requirements under current law and H.R. 45 through 2015, which have been previously provided to the Subcommittee. Although the fee income is adequate to fund the current program, the Department receives all its funds to implement this program through the annual appropriations process. Based on the Department's preliminary estimates, annual appropriations are projected to be less than estimated funding needs during years of peak repository construction and operations. This condition applies to both the current program and the program under H.R. 45. Future budget requests for the program have yet to be established and will be determined through the annual executive and congressional budget process. The Department would like to work with the Congress to assure that the repository program continues to be adequately funded.

Question 8. The projected costs of the program have changed substantially over the years. If you concluded that fees had become inadequate to pay for the current program, would you have authority to raise the fees? Do the contracts with utilities allow for the fee to be raised without breach of contract?

Answer 8. Under section 302(a)(4) of the Nuclear Waste Policy Act of 1982, as amended, if the Department concluded that fees had become inadequate to pay for the current program, the Department would be required to propose an adjustment of the fee to ensure full cost recovery from fees paid into the Nuclear Waste Fund. Any fee adjustment proposal must first be submitted to Congress before it can take effect. The standard disposal contracts with utilities allow for the fee to be raised and therefore it is not likely that a fee increase would result in a breach of contract.

Question 9. If Congress enacted legislation that added interim storage or other mandates to the program, and that changed the procedures under which fees could be charged, could an increase in fees to pay for the program then constitute a potential breach of contract and therefore lead to additional litigation?

Answer 9. To respond fully to this question, it would be necessary to focus on specific statutory provisions. In general, if new legislation required the standard disposal contracts to be amended to impose additional obligations on DOE and, in return, the utilities must pay an increased fee, it is unlikely that such legislation would result in a breach of contract if the utility is permitted but not required to participate in the new program, Furthermore, if a utility were required to participate in a new program and as a result were required to pay higher fee payments, it is unlikely that a breach of the current contract would occur if the legislation preserved the utility's existing contract rights. Of course, any amendments to the standard contract could result in additional litigation, even though we believe the result of that litigation would be ultimately favorable to the government.

Question 10. Are U.S. taxpayers more likely to pay for disposal of nuclear waste under current law or under H.R. 45? Would it be fair for taxpayers in states such as Nevada that do not have nuclear power plants to pay for the program?

Answer 10. Under both current law and H.R. 45, nuclear utilities, not taxpayers, fund the commercial spent fuel disposal program. We see no reason for changing that fundamental policy.

Question 11. Some members of this Subcommittee have expressed great concern about the use of the Nuclear Waste Fund surpluses for other purposes. Did DOE submit proposed legislation to Congress in 1994 and 1995 that would have created a mandatory annual appropriation from the Nuclear Waste Fund for program purposes? Was this legislation introduced by Mr. Upton in 1995 as H.R. 1174 and referred to this Subcommittee? Did this Subcommittee ever act on that legislation?

Answer 11. During Fiscal Year 1994, and again in Fiscal Year 1995, the Administration's budgets included legislative proposals to Congress that, if adopted, would have allowed for direct spending from the Nuclear Waste Fund. On March 7, 1995, Congressman Upton formally introduced legislation, H.R. 1174, that essentially concurred with the Administration's budget request. This legislation was referred to the subcommittee. However, the Congress did not act on this legislation.

Transmutation

Question 12. In your Senate testimony you also discussed research in the possibility of transmutation of nuclear waste using accelerator neutron beams. If this technology ever became possible, wouldn't you still have highly radioactive waste after such treatment?

Answer 12. Accelerator transmutation of waste could substantially reduce long-lived radioactivity in civilian spent fuel. There would remain radioactive material even after transmutation which would still require management in a high-level nuclear waste repository. Thus, transmutation does not eliminate the need for a repository.

Other high-level waste forms, such as vitrified high-level waste produced at the Department's sites at West Valley, Savannah River, and that planned for Hanford, could also require repository disposal.

Question 13. Do current proposals suggest chemical processing before the transmutation in order to concentrate the elements to be transmuted? Is that the same kind of reprocessing of spent fuel that could be used to make nuclear weapons? Would that reprocessing leave highly radioactive liquid waste similar to the tank wastes in Hanford and Savannah River? In your testimony you suggest that "A permanent repository is . . . important to our nonproliferation efforts to demonstrate alternatives to reprocessing." If transmutation involves reprocessing, wouldn't it damage our nonproliferation efforts?

Answer 13. Yes, it is true that the first step in an accelerator transmutation of waste process is chemical processing to concentrate elements to be transmuted, but without isolating potential weapons materials. All processing methods being considered for transmutation produce waste streams, Aqueous chemical methods result in liquid waste similar to Hanford and Savannah River tank waste. This waste would have to be converted to a ceramic or glass solid for repository disposal. Current plans are to place all remaining high-level waste and surplus weapons materials in a permanent repository, a process which sets a high disposal standard and discourages unauthorized diversion. Therefore, the geologic disposal program is an essential part of our non-proliferation goals.

Question 14. Could you give me a rough estimate of how long it might take before transmutation is a viable technology? Could you also estimate how much we would have to spend in research to make the concept work?

Answer 14. The Department's current accelerator transmutation of waste road mapping effort, requested by Congress in the FY 1999 Energy and Water Development Appropriation Act, is developing answers to both of those questions. The road map will be available by the end of the fiscal year. Earlier in this decade, the Na-

tional Academy of Sciences addressed those questions and concluded that several decades may be required to develop accelerator transmutation of waste as a demonstrated technology and that a demonstration facility itself may, require hundreds of millions of dollars Better estimates will be available from the road mapping effort in a few months.

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