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NEXT STEPS TOWARD PERMANENT NUCLEAR WASTE DISPOSAL

HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY AND AIR QUALITY

OF THE

COMMITTEE ON ENERGY AND COMMERCE
HOUSE OF REPRESENTATIVES

ONE HUNDRED TENTH CONGRESS

SECOND SESSION

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NEXT STEPS TOWARD PERMANENT NUCLEAR WASTE DISPOSAL

TUESDAY, JULY 15, 2008

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

The subcommittee met, pursuant to call, at 10:07 a.m., in Room 2123 of the Rayburn House Office Building, Hon. Rick Boucher (chairman) presiding.

Members present: Representatives Boucher, Gonzalez, Matheson, Matsui, Upton, Hall, Whitfield, Shimkus, Shadegg, Walden, Burgess, and Blackburn.

Staff present: John Jimison, Laura Vaught, Chris Treanor, Alex Haurek, Rachel Bleshman, David McCarthy, Amanda Mertens-Campbell, Andrea Spring, and Garrett Golding.

OPENING STATEMENT OF HON. RICK BOUCHER, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF VIRGINIA

Mr. BOUCHER. The subcommittee will come to order. Today we will receive testimony on the status of the Department of Energy's Yucca Mountain nuclear waste repository program, a matter of major concern to many, including the electricity consumers who are paying their funds into the nuclear waste fund. Congratulations should be extended this morning to Mr. Sproat, the Director of DOE's Office of Civilian Radioactive Waste Management for his success in meeting his promised date of June, 2008 for submission to the NRC of the Yucca Mountain licensing application. Since it has now been submitted, it is appropriate we learn this morning about the overall status of the project, and the next steps that we can anticipate.

While the submission to the NRC of the license application achieves an important milestone, the longstanding challenge of assuring adequate funding for the project remains of paramount concern. While in theory a balance of more than $20 billion resides in the nuclear waste fund in practice most of that money has been expended for other purposes. Each year the nuclear waste program has to compete for annual appropriations and actual appropriations have been only a fraction of the amount that the rate payers have contributed into the nuclear waste fund.

For example, this year $750 million in rate payer contributions will go into that fund, but the Administration is only proposing that $494.7 million be spent on nuclear waste disposal, so $750

million going into the fund and rate payer contributions slightly less than $500 million to be spent on nuclear waste disposal and even that amount, approximately $500 million is divided between the civilian program that the nuclear waste fund was designed to finance and the Department of Defense's nuclear waste disposal with an even contribution in the Administration's proposal between the 2 programs. We will be interested in Mr. Sproat's view of how this level of expenditure for the civilian program will affect his projections for opening the Yucca Mountain repository.

We are also interested in knowing how the Administration's funding request, if reflected in appropriations, will affect the NRC schedule for reviewing the license application. By law, the NRC has 3 years to review and act on the application with the fourth year permissible under certain circumstances. Mr. Weber's view whether the NRC will have adequate funding to achieve that schedule will be of interest to us. I appreciate the attendance of the witnesses this morning and look forward to their testimony, and pending the beginning of testimony from our witnesses, I am pleased now to recognize other members for their opening statements beginning with the gentleman from Michigan, Mr. Upton, ranking Republican on this subcommittee.

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

Mr. UPTON. Thank you, Mr. Chairman. This is an important hearing on the disposal of spent nuclear fuel. Our hearing today will largely focus on the Yucca Mountain repository as a solution to meet the government's spent nuclear fuel obligations. Storing our supply of spent fuel in its current form deep inside Yucca Mountain isn't the only disposal option available to us. I look forward certainly to future hearings that may focus on other possible solutions to our spent fuel disposal needs.

Properly dealing with the spent nuclear fuel is the key to our coming nuclear renaissance. With our power needs growing and a desire for clean, zero emission power, we will need literally hundreds of new nuclear reactors over the next 50 to 75 years. Nuclear power is the cleanest, most efficient, most reliable source of electricity, and it must be at the forefront of our energy supply, but impossible without rationally dealing with spent fuel.

Our current policy toward Yucca Mountain is charting us on a perilous course. With the Nation's nuclear reactors in operation today, we will reach the statutory space limit for Yucca in just a couple of years, and it should be noted that the statutory limit of 70,000 tons of spent fuel is artificially low. Scientists and other experts say that Yucca could hold perhaps twice that amount or more.

Regardless of Yucca's space limitations, we are long overdue to close the nuclear fuel cycle. Through advance recycling, we can turn spent fuel into new fuel while vastly reducing our disposal needs. There is no reason why we shouldn't be treating nuclear power as a renewable resource. Nuclear is just as clean as solar or wind, and the fuel is in fact recyclable. And unlike solar or wind, nuclear provides round-the-clock, reliable baseload power.

With our current once-through fuel cycle an individual's lifetime footprint of spent fuel is about the size of a pop can. Using proven recycling technology, we can reduce the volume of our high-level waste footprint by about 90 to 95 percent to that of a half dollar. It is my hope that we can take advantage of these technologies, and I certainly intend to work on bipartisan legislation with my colleagues to make sure that recycling can be part of the nuclear fuel cycle noting that Yucca must still have a place in this forward thinking strategy.

To date, over $27 billion has been accumulated in the nuclear waste trust fund and about $8 billion has been spent. Every year, as the chairman indicated, 750 million more goes into the fund from rate payers and another billion dollars accumulates in interest. After an allocation of these resources one would think that we would have something to show for it, but to date we do not.

Through budgetary sleights of hand and a flawed appropriation process that allows interest to trump national priorities, this money has not been fully spent toward its intended purposes. $750 million goes into the fund every year but that money doesn't come out. In fact, not only does the waste fund become a black hole in the U.S. Treasury, we are accumulating billions in liabilities estimated to reach some $7 billion by the year 2017. Ward Sproat, joining us today, deserves to be commended. He beat his actual deadline a year ago by about a month.

The main problem that we faced with Yucca Mountain is the lack of appropriated funds. The waste fund must be taken off-budget to fix the problem. The appropriators and anti-nuclear activists have been playing games with our domestic energy security for far too long, and it is the American people who are getting stuck with the tab.

France gets nearly 80 percent of its power, actually more than 80 percent of its power, from nuclear. Using American technology they recycle their nuclear fuel. They even have enough electricity capacity to export it to their neighbors. Germany, on the other hand, decided to phase out nuclear power and now they are an importer of electricity. They have completely lost their energy independence. The U.S. is fortunate enough today to be energy independent when it comes to electricity needs, but without some policies for spent fuel management and new nuclear power coming online, we are headed down the road toward importing electricity at higher rates, much like we are importing oil. America's working families deserve coherent policies to address our energy needs.

It is imperative that clean, safe nuclear power is at the forefront as we seek to solidify our Nation's energy supply and foster a new era of energy independence and reduced emissions. I yield back.

[The prepared statement of Mr. Upton follows:]

PREPARED STATEMENT OF HON. FRED UPTON

Chairman Boucher, thank you for holding this important hearing on the disposal of spent nuclear fuel. Our hearing today will largely focus on the Yucca Mountain repository as a solution to meet the government's spent nuclear fuel obligations. Storing our supply of spent fuel—in its current form—deep inside Yucca Mountain, isn't the only disposal option available to us. I look forward to future hearings that may focus on other possible solutions to our spent fuel disposal needs.

With two nuclear plants literally just miles from my doorstep in southwest Michigan, I know firsthand the vital role nuclear power plays throughout the nation. I also know about our pressing need to deal with the growing quantities of spent nuclear fuel. As we await the completion of the Yucca repository, steps must be taken to temporarily store spent nuclear fuel. State-of-the-art dry cask technology is being used by plants across the nation, including the Palisades plant in my own backyard, to safely store its spent nuclear fuel on-site—for the time being. Given the numerous delays to Yucca, the Cook plant—also in my district—has begun plans to add dry cask storage to their site.

Properly dealing with spent nuclear fuel is the key to our coming nuclear renaissance. With our power needs growing and a desire for clean zero-emission power, we'll need hundreds of new nuclear reactors over the next 50 years. Nuclear power is the cleanest, most efficient, and most reliable source of electricity. It must be at the forefront of our energy supply—impossible without rationally dealing with spent fuel.

Our current policy towards Yucca Mountain is charting us on a perilous course. With the nation's nuclear reactors in operation today, we will reach the statutory space limit for Yucca in just two years. It should be noted that the statutory limit of 70,000 tons of spent fuel is artificially low. Scientists and other experts say Yucca could hold twice that amount—or more.

Regardless of Yucca's space limitations, we're long overdue to close the nuclear fuel cycle. Through advanced recycling, we can turn spent fuel into new fuel, while vastly reducing our disposal needs. There is no reason why we shouldn't be treating nuclear power as a renewable resource. Nuclear is just as clean as solar or wind and the fuel is recyclable. And unlike solar or wind, nuclear provides round-the-clock, reliable base load power.

With our current once through fuel cycle, an individual's lifetime footprint of spent fuel is about the size of a soda pop can. Using proven recycling technology, we'll be able to reduce the volume of our high-level waste footprint 95 percent to that of a Kennedy half dollar. It is my hope that we can take advantage of these technologies and I intend to work on legislation with my colleagues on both side of the aisle to make recycling part of our nuclear fuel cycle—noting that Yucca must still have a place in this forward thinking strategy.

To date, over $27 billion dollars has been accumulated in the Nuclear Waste Trust Fund (fees plus interest) and about $8 billion has been spent. Every year $750 million more goes into the fund from ratepayers and another billion accumulates as interest. After an allocation of these resources, one would think that we have something to show for it. We do NOT.

Through budgetary slights of hand, and a flawed appropriations process that allows NIMBY interest to trump national priorities, this money has not been fully spent towards its intended purpose. $750 million goes into the fund every year, but that money doesn't come out. In fact, not only does the waste fund become a black hole in the US treasury, we're accumulating billions in liabilities—estimated to reach $7 billion by 2017. Ward Sproat—joining us today—deserves to be commended. Two years ago, he said he would have the application done by June 2008. And despite the hurdles, he's met that deadline.

The main problem we've faced with Yucca Mountain is lack of appropriated funds. The waste fund MUST be taken off budget to fix this problem. The appropriators and anti-nuclear activists have been playing games with our domestic energy security far too long and it is the American people who are getting stuck with the tab.

Let's look at a case study from Europe—France gets 80% of their power from nuclear. Using American technology, they recycle their nuclear fuel. They even have enough electricity capacity to export to their neighbors. Germany, on the other hand, decided to phase out nuclear power. Now they're an importer of electricity. They have completely lost their energy independence. The U.S. is fortunate today to be energy independent—when it comes to electricity needs. But without sound policies for spent fuel management and new nuclear power coming online, we're headed down the road towards importing electricity at higher rates, much like we're importing oil. America's working families deserve coherent policies to address our energy needs.

It is imperative that clean, safe nuclear power is at the forefront as we seek to solidify our nation's energy supply and foster a new era of energy independence and reduced emissions. Not only will our environment be better for it, our national security will also be bolstered. Millions of households will be powered by zero-emission nuclear power and our nation's economy will be powered by nuclear as well. I yield back.

Mr. BOUCHER. Thank you very much, Mr. Upton. The gentleman from Texas, Mr. Gonzalez, is recognized for 3 minutes.

Mr. GONZALEZ. Waive opening.

Mr. BOUCHER. The gentleman waives his opening statement and will have 3 minutes added to his questioning time for the second panel of witnesses this morning. The gentlelady from California, Ms. Matsui, is recognized for 3 minutes.

OPENING STATEMENT OF HON. DORIS MATSUI, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Ms. MATSUI. Thank you, Mr. Chairman. I thank you very much for calling this hearing today, and for your continued focus on these important issues. I am very pleased to be here today and will just take a minute so we can continue on to the distinguished witnesses. I would like to thank today's panelists for joining us to discuss the important subject of nuclear waste. I look forward to hearing all of your expert opinions. Mr. Chairman, my district has had a long history with nuclear power. After years of wasted costs and environmental security threats, the people of Sacramento voted to shut down Rancho Seco nuclear power plant in 1989. It is now fully decommissioned.

I, as well as my constituents, continue to have a number of reservations about nuclear power, but the fact that this energy source does not emit greenhouse gas is exciting. We cannot simply accept it blindly without thoroughly investigating all consequences and outcomes. With that said, I fully realize that almost 20 percent of our nation's electricity generation comes from nuclear sources. Because of that, we as a nation simply must resolve the ever growing problem of nuclear waste. I hope the witnesses here today can help this committee with suggestions and strategies that we can use going forward.

We need to confront this issue, and we need to do so in order to protect the health, safety, and security of this country. Mr. Chairman, I thank you for your leadership and your commitment to these issues, and I yield back the balance of my time.

Mr. BOUCHER. Thank you very much, Ms. Matsui. The gentleman from Illinois, Mr. Shimkus, is recognized for 3 minutes.

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

Mr. SHIMKUS. Thank you, Mr. Chairman. I too want to thank you for this hearing, and the focus on energy supply. I, like many of us, are disappointed at the rumors of coalition of bipartisan members outside of the Committee working to address the supply and not the best place where that should happen, which is here, because we have a bipartisan majority that could easily move a supply bill that would be accepted on the floor of the House. Having said that, we know electricity demand is going to continue to increase. We as a country can no longer say no to adding supply as part of our energy solutions. Just to keep up with the projected energy demand, we are going to need 52 new nuclear power plants, 747 new coal plants. That is just to meet future demand—2,000 new hydroelectric generators and 13,000 new megawatts of renewable power.

That is why we have been on the floor talking about American-made energy. Nuclear power is American-made energy. Nuclear power is American jobs. Nuclear power is if we are going to go into this debate of climate change, is the only way that we are going to get to any type of climate change numbers without rapidly increasing the cost. That would be devastating to the economy. We had a hearing last week on the carbon capture and sequestration bill, and a lot of the challenges to that bill, Mr. Chairman, was we had a fund that we were not going to allow the government to touch. Well, I think the nuclear trust fund which we control and we have collected millions of dollars from, and we were not putting that money to where it goes into the waste disposal, is a perfect example why we shouldn't trust the Federal Government to handle the funds in your carbon capture and sequestration bill.

Another reason we shouldn't trust the government is, and I didn't say it last week, was on the whole future gen debate. Here the government rolled out a great federal program to capture and sequester carbon and a coal emitting plant, and when industry and the international community got involved the Administration, my Administration, President Bush pulled the rug out from under the plan, so this is a perfect example. And the nuclear waste fund was used in the hearing last week in the debate about, trust us, give us the money, and we will make sure it then goes, but the nuclear waste fund is a perfect example of how we failed to do that over the years, and we are scrambling to just meet the minor demands on trying to get Yucca Mountain.

I will end with this. If we cannot bury high-level nuclear waste under a mountain in a desert, we just can't put it anywhere in this country, and so that is why we are glad that this National Government has already made a decision to move forward, and we will not allow people to rob the fund to stop that from happening. I yield back.

Mr. BOUCHER. Thank you very much, Mr. Shimkus. The gentleman from Utah, Mr. Matheson, is recognized for 3 minutes.

OPENING STATEMENT OF HON. JIM MATHESON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF UTAH

Mr. MATHESON. Thank you, Mr. Chairman. As someone who recognizes the important role that nuclear power plays in our energy mix today and in the carbon constrained future, I recognize it will play an increasing role. I do have to voice serious concerns about the efficacy of a plan to store spent nuclear fuel at Yucca Mountain. This plan has always been fought with an abundance of faith and not enough fact. Energy utility companies have been promised a national repository for nuclear waste for the past 2 decades, and unfortunately the U.S. Government has been more than happy to act as though this is a reasonable plan to deal with what I believe is a very serious problem.

In my home State of Utah, we have a hard time understanding why the transportation risks associated with moving nuclear waste to Yucca Mountain have never really been studied given that 95 percent of the waste will go through my State if it is shipped by rail and 87 percent if we truck this waste. This is a huge concern to both me and my constituents. I oppose the plan to store nuclear

waste at Yucca Mountain, Nevada. First, I don't think that because it is a small State in terms of population that that should have been the reason why it is being stored there, and I hate to say it but I think that has been a big factor. I think the politics of this issue have trumped science. Second, the waste is currently being stored safely on-site with plenty of room for more storage. In fact, the total amount of waste produced by the United States since 1950 would occupy the space of one football field. And, finally, as I indicated, the transportation of this nuclear waste across the continent in my opinion creates more safety problems than leaving it where it is.

Nuclear waste is currently stored where it is created in either dry cask storage or in water storage facilities. My opposition to moving nuclear waste does not mean I oppose nuclear energy as part of energy mix. As I said at the outset, I believe that technological advancements can help solve the problems we face with the storage of spent nuclear fuel. I just don't think moving the waste to Yucca Mountain really solves the problem. When we start to think about a carbon constrained future, I think we should be even more concerned about nuclear waste storage because even if we were to magically open Yucca Mountain today, we wouldn't have enough room for the waste we already have.

Instead of throwing more money at this problem, I think it is unbelievable how much money we have thrown at it already. We should recognize the concept of some cost and we should move on looking at realistic solutions in the near term as well as a viable long-term strategy. I have introduced a bipartisan interim storage bill along with my colleagues, Ms. Berkley from Nevada, Mr. Cannon of Utah, and Mr. Bishop of Utah, that this committee should consider. Companion legislation has been introduced in the Senate by Senators Reid and Bennett.

H.R. 4062, the Federal Accountability for Nuclear Waste Storage Act, would require the Federal Government to take responsibility for possession of storage, maintenance, and monitoring of the waste. Utilities would have 6 years to transfer spent fuel currently in pools into dry cask in order to allow sufficient time for cooling and construction. Mr. Chairman, I see my time is about to run out. I would like to submit my full written statement for the record, but again I would say there are other options we should be looking as a committee, and that is why I welcome this hearing taking place, and I look forward to hearing from our witnesses.

Mr. BOUCHER. Thank you very much, Mr. Matheson. The gentleman from Oregon, Mr. Walden, is recognized for 3 minutes.

OPENING STATEMENT OF HON. GREG WALDEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OREGON

Mr. WALDEN. Thank you very much, Mr. Chairman. I appreciate your holding this hearing. You do a wonderful job on these hearings. It is always interesting to learn about where we are in various segments of the energy world. It seems to me that the longer we wait to open Yucca Mountain, the more it is going to cost rate payers, and the longer we wait, the more risk there is dispersed around the country for Americans. I have little faith that Yucca Mountain is going to move forward in a timely manner, especially

as long as there is a fairly active and able Nevada delegation working a way to prevent its opening, and I guess I respect that. I suppose if I were in your shoes, I might share similar views, but for the sake of the country it seems to me we need a safe and secure depository that can be safeguarded and where America's nuclear waste can go, and the sooner the better.

I noted this morning on WTOP they had, I believe it was the Maryland PUC Commissioner or somebody from the Public Utility Commission talking about how Maryland is going to run out of electricity at some point here and not be able to meet demand in the not too distant future. And I think potentially that is the problem around the country. And as we look at alternative energy sources, and I am a big advocate of those, I recognize there are limitations on how much wind or solar you can have, and certainly other countries around the world have been able to utilize nuclear energy although I think America may actually produce more electricity from nuclear power than any other country on the planet. So we are actually in the forefront. Now we just have to solve this disposal waste issue. I think that is essential.

If we want to move forward on reducing our carbon footprint then we have to look to energy production sources that are not either hydrocarbons as in coal or gas, and certainly most of our peaking plants now are gas fired, and you are going to see continuing problems meeting that demand. And so it looks to me like in the future not only do we have to replace nuclear power plants we have, we have to turn to that energy source to safely provide additional non-polluting energy, but we need to get this storage issue resolved once and for all. So, Mr. Chairman, thank you. I do have to say as a footnote that I wish this subcommittee were also taking aggressive action right now to address America's lack of energy and cost of energy, not just in terms of speculators and gougers but supply.

And I know that you share some of those concerns as well, Mr. Chairman, in terms of adding to America's supply. I think the time has come, times have changed, and, frankly, economy is up on the rocks, and a lot of it has to do with the lack of energy. And when you are paying $5.08 a gallon for diesel in Odell, Oregon or $4.39 or whatever it may be at this moment, family budgets are getting killed, and this economy is suffering mightily. You find it at the food counter. You find it at the gas station. And this Congress needs to take real serious action about adding to supply and changing the dynamic of the world market. Thank you, Mr. Chairman.

Mr. BOUCHER. Thank you very much, Mr. Walden. The gentleman from Kentucky, Mr. Whitfield, is recognized for 3 minutes.

OPENING STATEMENT OF HON. ED WHITFIELD, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF KENTUCKY

Mr. WHITFIELD. Mr. Chairman, thank you very much for holding this important hearing. I want to thank our witnesses, Ms. Berkley, and those on the second panel. We look forward to your testimony. Obviously, energy is one of the key issues facing our great country today, and we all recognize with the increasing demand for electricity in the future nuclear power must play an important role.

And it is quite disappointing that we still find ourselves in this quagmire relating to Yucca Mountain. I guess the legislation to first start studying Yucca Mountain was passed in 1982, 26 years ago, and we still do not have this issue resolved. It is unfortunate that the Federal Government through its general funds has to pay out awards to utilities because the government is not in a position to take all of this waste, and I think the judgments already exceed $400 million, and depending upon when the government is able to do it may lessen that figure or increase that figure.

So this is a timely hearing. It is one that we must move forward to with great dispatch. It is one of the most important issues facing our country, I believe. And we also know that if the NRC does not believe that we are going to be in a position to dispose of this waste that they could reach a position where they may not license any more nuclear reactors. So it is a vitally important issue, and I thank the chairman for hosting, and I look forward to the testimony of the witnesses this morning.

Mr. BOUCHER. Thank you very much, Mr. Whitfield. We turn now to our first witness of the morning, and that is the Honorable Shelley Berkley, who represents the First District of Nevada. Shelley, we are delighted to have you with us today. Without objection, your prepared statement will be made part of the record, and we will welcome your oral summary.

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

Ms. BERKLEY. Thank you very much, Mr. Chairman, Ranking Member Upton, and members of the Committee. It is a pleasure for me to be here, and thank you for giving me the opportunity to testify. While the ranking member spoke of a nuclear renaissance, the people of the State of Nevada consider us going back to the Dark Ages. Nevada families are overwhelmingly opposed to our home State becoming this Nation's nuclear garbage dump. Over the past 26 years we have been fighting Yucca Mountain, Republicans and Democrats alike, for one simple reason. It is not safe.

Nevadans know a bad bet when we see one. Opposition to Yucca Mountain at home remains as strong as ever, with polls showing more than 75 percent of Nevada residents saying they want to continue fighting this reckless and dangerous proposal. That is because we recognize the danger of burying radioactive toxic nuclear waste 90 minutes from the Las Vegas Valley, Nevada's economic engine, home to more than 2 million residents and a destination that draws more than 40 million visitors from around the globe annually. Today you will no doubt hear much about the progress made on Yucca Mountain, including the submission of a license application to the NRC.

I would also ask you to keep in mind the project's bloated price tag, history of chronic delays, failed quality assurance program, and a long list of scientific and technical shortcomings that continue to plague Yucca Mountain. This includes e-mails sent by workers on the project containing statements such as this. This is a worker on the Yucca Mountain project: "In the end I keep track of 2 set of files, the ones that will keep QA happy and the ones that are actually used," and "if they need more proof I will be happy to

make up more stuff." There are 1,100 pages just like that. If you want to get chilled one day, read them.

Is there any wonder Nevadans have an utter lack of confidence when the words "sound science" and "Yucca Mountain" are used in the same sentence. Allow me to list just a few of the unresolved issues. No radiation standard. A federal court struck down EPA's original radiation standard of 10,000 years for Yucca Mountain. Current law requires that the standard covers at least 300,000 years, the period of peak danger. Clean energy, I mean nuclear waste is radioactive. What is more dirty than that? The issue is key. This issue is key to determining Yucca Mountain's performance, yet DOE filed its application without finalization of this important safeguard. Earthquakes and volcanoes, violent earthquakes and volcanoes have rocked Yucca Mountain in the past. There is no reason to think these threats will not occur again, and I know Mr. Shimkus speaks when he sees the desert southwest because he lives in the east, he sees a vast wasteland but the desert southwest has a very dynamic ecosystem that we may very well destroy. No canisters currently exist that are capable of storing waste. Should this magic canister appear plans call for billions of dollars of so-called drip shields to be added long after the waste has gone into Yucca Mountain.

The State of Nevada has argued with good reason that installing these drip shields a century from now probably won't be possible because the DOE's plan which relies on robots that have yet to be invented. The Secretary of Energy actually had a press conference where he talked about an army of robots—this is like I, Robot in real life—going down into Yucca Mountain a hundred years from now because it is too radioactive and hot for human beings that these robots will somehow magically put the drip shields over the canisters that don't exist either. Transportation dangers, 50 million Americans will be at risk from thousands of nuclear waste shipments barreling down America's roads and railways, each a prime target for terrorists seeking to do harm hunting for materials to make a dirty bomb, and we know statistically when thousands of shipments involving high-level nuclear waste are barreling down our roads accidents will occur leaving families and our environment vulnerable to decades of this threat and exposing communities to millions of dollars in potential clean-up costs.

And who pays for that? You and I, ladies and gentlemen, and millions of taxpayers in this country. Yucca Mountain is decades behind schedule. Shipments were supposed to begin arriving in Nevada in 1998. Today that date has slipped to 2020 or beyond and it will be 2050 or later before all current waste is shipped. The price tag for Yucca Mountain has ballooned and the cost is growing. I would note that it has also been nearly 2 years since DOE promised this committee it would provide an updated life cycle cost analysis for Yucca Mountain. This revised estimate was originally to be delivered in 2006. Promises were made not only to members of this committee but also to the GAO and my office.

I would ask the DOE to explain why it has taken nearly 2 years to update this important cost analysis and why it fails to honor its pledge that this task would have been completed long ago. Up until this point, we have been told to expect figures approaching $80 bil-

lion, and I am anxious to learn what the new amount is going to be, not that 80 billion does not already qualify this project as a prime example of grade A radioactive pork. And let me suggest another thing to you. We are in the middle of a drought in the desert southwest. We have no water, and this project will take massive amounts of water. Where in heaven's name do we plan to get it from?

Waste does not have to be moved. Experts agree on one thing. Waste can safety remain on sight for the next 100 years in dry cask storage. This ready-made option costs a fraction of Yucca Mountain's price tags and avoids the transportation risks. Remember, on-site storage is already being done and the fact remains that waste is going to stay at existing and former plant sites for at least another decade or more even under the rosiest of scenarios. This brings me, Mr. Chairman, to my key point. Those looking at alternatives to current nuclear waste policy should not rush to move waste to Yucca Mountain given the evolution and thinking that is now taking place.

This includes interest in the construction of a U.S. reprocessing plant that would treat waste before it is sent to a repository. Such a scheme raises the question of how many times we are planning to ship high-level nuclear waste. Will it go to Nevada first only to be moved and sent to the reprocessing plant and then reshipped to my home State, and what about interim storage? Do we move it from the plants to regional sites to reprocessing and then back to Nevada? Leaving waste on-site while options are debated leave open future alternatives to burying this garbage in the Nevada desert. And what about the myth that we are consolidating the waste in one place? Here is what the nuclear industry does not talk about. Yucca Mountain will not eliminate nuclear waste at plants where power is being generated. This is a patently false claim used to justify a flawed policy.

Simply put, as long as a nuclear power plant is operating nuclear waste will remain on-site. We are not creating one repository to hold all the waste for all time. We are just creating one more place where toxic waste will be stored.

Mr. BOUCHER. If you could wrap up in just a short period that would be helpful to us.

Ms. BERKLEY. Yes, I would be delighted to do this.

Mr. BOUCHER. Thank you.

Ms. BERKLEY. Let me mention one other very important issue before I relinquish my time. Nevada's congressional delegation—and this is all the members, Republicans and Democrats alike—is challenging 100 million no-bid sweetheart contract for work on Yucca Mountain to a law firm with a blatant conflict of interest. Twice we have asked as a complete delegation for the Secretary of Energy to recuse the firm of Morgan Lewis, which is both suing the taxpayers on behalf of the nuclear industry, while also representing the Energy Department on taxpayers' dollars. We have yet to receive an answer. This acknowledged conflict of interest has also raised red flags at the Justice Department, which has questioned the awarding of this no-bid contract, given the potential impact on cases involving huge liability claims.

The families that I represent, all the families of Nevada, deserve fair treatment in the Yucca Mountain licensing process, and the taxpayers of America deserve to have their financial interests protected. Morgan Lewis should be replaced and this $100 million contract put forward again with an open and fair bidding process. And, Mr. Chairman, anything you can do to help the State of Nevada with that issue, we would be very, very grateful.

[The prepared statement of Ms. Berkley follows:]

STATEMENT OF HON. SHELLEY BERKLEY

Mr. Chairman, Members of the Subcommittee. Thank you for the opportunity to testify today and please allow me to get right to the point.

Nevada families are overwhelmingly opposed to our home state becoming this nation's nuclear garbage dump. Over the past 25 years, we have been fighting Yucca Mountain for one simple reason: it's not safe.

Nevadans know a bad bet when we see one. I can report that opposition to Yucca Mountain at home remains as strong as ever, with polls showing more than 75% of Nevada residents saying they want to continue fighting this reckless proposal.

That is because we recognize the danger of burying toxic nuclear waste 90 minutes from the Las Vegas Valley—Nevada's economic engine, home to more than two million residents and a destination that draws 40 million visitors from around the globe annually.

Today you will no doubt hear much about the "progress" made on Yucca Mountain, including the submission of a license application to the NRC.

However, I would ask you to also keep in mind the project's bloated price tag, history of chronic delays, failed quality assurance program, and the long list of scientific and technological shortcomings that continue to plague Yucca Mountain.

This includes e-mails sent by workers on the project containing statements such as:

"In the end I keep track of 2 sets of files, the ones that will keep QA happy and the ones that were actually used," and "If they need more proof I will be happy to make up more stuff."

No wonder Nevadans have an utter lack of confidence when the words "sound science" and Yucca Mountain are used in the same sentence.

Allow me to list just a few more of the unresolved issues surrounding the proposed dump.

No radiation standard: A federal court struck down EPA's original radiation standard for Yucca Mountain. Current law requires that the standard covers at least 300,000 years—the period of peak danger.

This issue is a key basis for determining Yucca Mountain's performance. Yet DOE filed its license application without finalization of this important safeguard.

Earthquakes and Volcanoes. Violent earthquakes and volcanoes have rocked Yucca Mountain in the past. There is no reason to think these threats cannot strike again.

No canister currently exists that is capable of storing waste. Should this magic canister appear, plans call for billions of dollars in so-called drip shields to be added long after waste has gone into Yucca Mountain.

The State of Nevada has argued, with good reason, that installing these drip shields a century from now probably won't be possible because DOE's plan relies on robots that have yet to be invented.

Transportation Dangers: 50 million Americans will be at risk from thousands of nuclear waste shipments barreling down America's roads and railways. Each a prime target for terrorists seeking to do harm or hunting for the materials to make a dirty bomb.

And we know accidents involving high-level nuclear waste will occur, leaving families and our environment vulnerable to decades of this threat and exposing communities to millions of dollars in potential clean-up costs.

Yucca Mountain is decades behind schedule: Waste shipments were supposed to begin arriving in Nevada in 1998. Today, that date has slipped to 2020 or beyond and it will be 2050 or later before all current waste is shipped.

The price tag for Yucca Mountain has ballooned and with $4.00 gas, the cost is growing. I would note that it has also been nearly two years since DOE promised this Committee it would provide an updated lifecycle cost analysis for Yucca Mountain.

This revised estimate was originally to be delivered in 2006. Promises were made, not only to members of this Committee, but also to the GAO and my office.

I would ask DOE to explain why it has taken nearly two years to update this important cost analysis and why it failed to honor its pledge that this task would be completed long ago.

Up until this point, we have been told to expect a figure approaching the $80 billion mark and I am anxious to learn the new amount.

Not that $80 billion does not already qualify this project as a prime example of Grade radioactive pork.

Waste does not have to be moved. Experts agree on one thing. Waste can safely remain on-site for the next 100 years in dry cask storage. This ready-made option costs a fraction of Yucca Mountain's price tag and avoids transportation risks.

Remember, on-site storage is already being done and the fact remains that waste is going to stay at existing and former plant sites for at least another decade or more, even under the rosiest of scenarios.

This brings me to a key point: Those looking at alternatives to current nuclear waste policy should not rush to move waste to Yucca Mountain given the evolution in thinking that is now taking place.

This includes interest in the construction of a U.S. reprocessing plant—which I oppose—that would treat waste before it is sent to a repository.

Such a scheme raises the question of how many times we are planning to ship high-level nuclear waste.

Will it go to Nevada first, only to be removed and sent to a reprocessing plant, then re-shipped to my home state?

And what about interim storage? Do we move it from the plants to regional sites to reprocessing and then to Nevada?

Leaving waste on-site while options are debated leaves open future alternatives to burying this garbage in the Nevada desert.

But what about consolidating the waste in one place?

Here is what the nuclear industry does not want you to know: Yucca Mountain will NOT eliminate nuclear waste at plants where power is being generated.

This is a patently false claim used to justify a flawed policy. Simply put: as long as a nuclear power plant is operating, some amount of nuclear waste will remain. We are not creating one repository to hold all waste for all time; we are just creating one more place where toxic nuclear waste will be stored.

Under current law, Yucca Mountain is already full. No new waste from even a single new nuclear power plant can be sent to Nevada without lifting the cap now in place. This remains a key unanswered question in light of calls for dozens of new nuclear power plants to be built in coming years.

This fact also highlights why nuclear power can never be called a clean source of energy when the waste created by these plants remains a threat for hundreds of thousands of years. Our nation's energy future should be built on solar and other forms of green energy that do not create the type of deadly radioactive by-products set to be dumped at Yucca Mountain.

Finally, I would note that Nevada's Congressional delegation and the State are challenging a $100 million no-bid sweetheart contract for work on Yucca Mountain to a law firm with a blatant conflict of interest.

Twice we have asked as a delegation for the Secretary of Energy to recuse the firm of Morgan Lewis, which is both suing the taxpayers on behalf of the nuclear industry, while also representing the Energy Department on the taxpayers' dollar.

We have yet to receive an answer.

This acknowledged conflict of interest has also raised red flags at the Justice Department which has questioned the awarding of this no-bid contract given the potential impact on cases involving huge liability claims.

The families of Nevada deserve fair treatment in the Yucca Mountain licensing process and the taxpayers of America deserve to have their financial interests protected. Morgan Lewis should be replaced and this $100 million contract put forward again with an open and fair bidding process.

Thank you and I look forward to answering any questions.

SUMMARY

Nevada families overwhelmingly oppose Yucca Mountain. One simple reason: it's not safe.

Consistent 25-year opposition to Yucca Mountain remains as strong as ever. Polls show more than 75% of residents want to continue fighting proposal.

Nevadans recognize dangers of burying nuclear waste 90 minutes from Las Vegas—Nevada's economic engine, home to more than two million residents and a destination that draws 40 million visitors annually.

Must keep in mind Yucca Mountain's bloated price tag, history of chronic delays, failed quality assurance program, and the long list of scientific and technological shortcomings that plague the project. Worker e-mails uncovered with statements such as: "In the end I keep track of 2 sets of files, the ones that will keep QA happy and the ones that were actually used," and "If they need more proof I will be happy to make up more stuff."

Unresolved issues surrounding the proposed dump: No radiation standard. This issue is a key basis for determining Yucca Mountain's performance, yet DOE filed its license application without finalization of this important safeguard.

Violent earthquakes and volcanoes have rocked Yucca Mountain in the past and there is no reason to think these threats cannot strike again.

No canister currently exists that is capable of storing waste. Plans also call for billions of dollars in drip shields to be added by robots that have yet to be invented.

Transportation Dangers: 50 million Americans will be at risk from thousands of nuclear waste shipments. Each a prime target for terrorists. Accidents will leave families and communities vulnerable to threats and millions of dollars in potential clean-up costs.

Yucca Mountain is decades behind schedule: Waste shipments were supposed to begin arriving in Nevada in 1998. Today, that date has slipped to 2020 or beyond and it will be 2050 or later before all current waste is shipped.

Price tag for Yucca Mountain has ballooned. Congress has been told to expect a figure near $80 billion mark. Project already qualifies as a prime example of Grade "A" radioactive pork.

Waste does not have to be moved. Waste can safely remain on-site for the next 100 years in dry cask storage. Costs a fraction of Yucca Mountain's price tag and avoids transportation risks. Interest in U.S. reprocessing plant raises question of how many times waste would be moved. Leaving waste on-site while options are debated leaves open future alternatives to burying in Nevada.

Yucca Mountain will NOT eliminate nuclear waste at plants where power is being generated. As long as a nuclear power plant is operating, nuclear waste will remain. We are not creating one repository to hold all waste for all time; we are just creating one more place where toxic nuclear waste will be stored.

Yucca Mountain is already full. No new waste from even a single new nuclear power plant can be sent to Nevada without lifting the cap now in place. Key point in light of calls for dozens of new nuclear power plants to be built in coming years. Shows why nuclear power not a clean source of electricity.

Nevada's Congressional delegation and the State are challenging a $100 million no-bid sweetheart contract for work on Yucca Mountain to a law firm with a blatant conflict of interest.

Nevada delegation has asked the Secretary of Energy to recuse the firm of Morgan Lewis. Conflict of interest has also raised red flags at Justice Department which has questioned no-bid contract given potential impact on cases involving huge liability claims. Morgan Lewis must be replaced and the $100 million contract put forward again with open and fair bidding process.

Mr. BOUCHER. Thank you very much, Ms. Berkley.

Ms. BERKLEY. You are very welcome. Thank you for your time.

Mr. BOUCHER. We appreciate your testimony here this morning. Thank you. We will turn now to our second panel of witnesses for the morning. Mr. Edward Sproat is the Director of the Office of Civilian Radioactive Waste for the Department of Energy. Mr. Michael Weber is Director of the Office of Nuclear Material Safety and Safeguards with the Nuclear Regulatory Commission. Mr. Robert Meyers, the Principal Deputy Assistant Administrator with the Office of Air and Radiation at the Environmental Protection Agency. Dr. John Garrick is the Chairman of the Nuclear Waste Technical Review Board. Mr. Marvin Fertel is the Executive Vice President and Chief Nuclear Officer at the Nuclear Energy Institute. And Ms. Anne George is a Commissioner with the Connecticut Department of Public Utility Control and Chair of the National Asso-

ciation of Regulatory Utility Commissioners Committee on Electricity. We welcome each of our witnesses this morning, and thank you for taking time to share your views with us on this matter of concern to many. Your prepared written statements will be made a part of our record, and we would welcome you oral summaries, and ask that your oral summaries be kept to approximately 5 minutes. And, Mr. Sproat, we have already commended you for your early filing of the application for a license with the NRC, and we will be happy to hear your testimony this morning regarding that and other matters relating to the status of the Yucca Mountain project. We welcome you and we will be glad to hear from you at this time.

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

Mr. SPROAT. Good morning, Mr. Chairman, and Ranking Member Upton and members of the committee. Thank you very much for inviting me to address the Committee this morning. I would like to just talk about briefly the Department's accomplishments over the past 2 years since my last appearance before this committee in July of 2006, and I would like to talk briefly about the challenges the Yucca Mountain program faces moving forward. In the hearing in July of 2006 when I was here, I gave you a number of intermediate milestones that need to be accomplished before we would be able to submit a license application to the Nuclear Regulatory Commission. I also indicated that we would submit that license application by Monday, June 30, 2008, and I am very happy to acknowledge the fact that we met or beat all the intermediate milestones except the one that we missed by 2 weeks, and we submitted the application to the NRC on June 3 of this year.

I am very pleased to say we accomplished those milestones and submitted that license application despite the fact that over the past 2 fiscal years we received $200 million less in appropriations than what the President had asked for in FY 2007 and 2008. And we were able to accomplish these significant milestones with significantly less dollars because of 2 things. One is that we made significant improvements in how this program is being managed in terms of its processes. We strengthened the management team. But the second key reason is because we have a great team that we have pulled together, both federal employees and contractors, who are very focused on making these milestones happen, and I believe we have turned the corner on the Yucca Mountain program in terms of having a top notch management team and contractor team working together to make this program move forward.

This team that is going to be in place after I leave is very well positioned to be ready to begin construction on the repository 3 to 4 years from now if the NRC gives us a construction authorization, which I believe that they will based on our high quality license application. Regarding new nuclear plants, which was referred to in a few of the opening statements, we have been working with the Department of Justice to develop an amendment to the standard contract so that those companies interested in building new nuclear plants could sign a contract with the Department of Energy to

allow them to get a license for those new nuclear plants. Suffice it to say we would not sign the existing standard contract given that it requires us to begin accepting fuel in 1998, but we have reached agreement with DOJ, and we have, in fact, started discussions with several utilities who are interested in building new nuclear power plants. I would be glad to talk about that amendment if the committee so desires.

We also have completed 4 reports which are in the final stage of review, which I anticipate us issuing here in the next several weeks. That is an updated Total System Life Cycle Cost estimate, the Fee Adequacy Assessment for the nuclear waste fund, a report on Interim Storage as requested by the House Appropriations Committee early this year, and finally the report on the need for a second repository as required by the Nuclear Waste Policy Act, which requires us to submit a report to Congress on that subject by January 1, 2010. All 4 of those reports are to be released imminently. Let me just switch quickly to the key issues going forward for the program. Number 1 is funding, and I know this committee is very well aware of this issue. I heard it in several of the opening statements. Remember that we could be ready to proceed with construction of the repository in 3 to 4 years from now if we receive a construction authorization from the Nuclear Regulatory Commission.

This program has been funded historically at levels of between $350 million to $500 million a year. That will not be sufficient to build and operate the repository, the Nevada rail line, and operate this repository. Based on our revised cost estimates, based on the design that we have submitted in the license application, and the cost estimates based on that design, we are looking at a budget authority requirement of between $1.2 to $1.9 billion a year for the construction period and into the operating period for the repository, so you can see there is quite a gap between the $350 million to $500 million that the program has received in the past versus what it is going to need to actually be constructed and operated.

The nuclear waste fund has about $21 billion in it right now. It receives $750 million a year in fees from the utility industry, and interest is accumulating at about $900 million a year, but this committee is well aware of the flaws in the budgetary framework for that fund, and I am sure we will be talking about that later in the hearing. We have submitted legislation in the last 2 Congresses to try and fix this issue. Unfortunately, that legislation has gone nowhere, but quite frankly I believe that now that the license application has been submitted there will be renewed interest in both houses to see if this issue can be addressed. This is the key issue for moving Yucca Mountain forward.

We have talked also briefly about the liability of the taxpayer associated with the government's non-performance to the standard contracts. The Nuclear Waste Policy Act does not allow us to move spent nuclear fuel until the repository is in operation, and as a result if we don't open the repository until 2020, which is now our best achievable date, we are estimating taxpayer liability to be about $11 billion at that stage of the game. Clearly, the least cost option for the taxpayer and for the ratepayer is to move forward and get Yucca open as quickly as we can. Other key issues that we are facing just so the committee is aware, and I will be glad to talk

about these if requested, land withdrawal. We do need to legislatively withdraw the land around the repository in order for the NRC to give us a construction authorization. That does require legislation. And water rights is another key issue and also the 70,000 metric ton administrative limit on the capacity of Yucca Mountain. All of those have been addressed in the legislation that we submitted to Congress in the last 2 congressional sessions.

To summarize, I believe we have made substantial progress with Yucca Mountain over the last 2 years, and we have submitted a very high quality license application to the NRC. I have every reason to believe and expect that we will get an authorization to begin construction for Yucca in the next 3 to 4 years, but we will need the help of Congress to restore access to the nuclear waste fund and the fees as was the original intent of Congress when the nuclear waste fund was established in the Nuclear Waste Policy Act.

I believe I have an excellent federal senior management team that will take this program forward after I leave, and I will be very happy to answer any questions the committee may have when it is my turn.

[The prepared statement of Mr. Sproat follows:]

Summary

Edward F. Sproat, III, Director
Office of Civilian Radioactive Waste Management
U.S. Department of Energy
Before the
Subcommittee on Energy and Air Quality
Committee on Energy and Commerce
U.S. House of Representatives

July 15, 2008

- DOE has met all the milestones outlined before this Committee in July 2006, including submittal of the Yucca Mountain License Application (LA) to the Nuclear Regulatory Commission (NRC) on June 3, 2008, in spite of appropriations reductions totaling over $200 million less than the President's requests over the last two years.

- Following a 90-day acceptance review by the NRC, DOE believes the LA will be docketed, beginning the formal licensing phase that will last three to four years.

- Substantial progress has been made improving the management of this Program, ensuring a quality senior Federal management team to run this Program.

- DOE has nearly completed four reports that will be released in the near future: the Total System Life Cycle Cost estimate, the Fee Adequacy Assessment, the Second Repository, and the Interim Storage of Spent Nuclear Fuel.

- To allow the licensing of new nuclear plant, DOE has informed utilities interested in constructing new reactors that DOE is prepared to discuss an amendment to the Standard Contract to cover the new plants.

- DOE will not be able to execute its responsibilities under the Nuclear Waste Policy Act or set a firm date for meeting contractual obligations without funding reform that allows the Nuclear Waste Fund to be used as intended by Congress.

Statement of Edward F. Sproat, III, Director
Office of Civilian Radioactive Waste Management
U.S. Department of Energy
Before the
Subcommittee on Energy and Air Quality
Committee on Energy and Commerce
U.S. House of Representatives

July 15, 2008

Mr. Chairman and Members of the Committee, I appreciate the invitation to appear before the Committee to discuss the current status of the Yucca Mountain Program, including funding and liability issues associated with the development and operation of the repository.

In July 2006, I appeared before this Committee to discuss my plans to move the Yucca Mountain Program forward. I outlined four strategic objectives that I intended to pursue and implement during my tenure as Director:

1. Submit a high-quality and docketable License Application to the United States Nuclear Regulatory Commission (USNRC) no later than June 30, 2008;

2. Design, staff, and train the Office of Civilian Radioactive Waste Management (OCRWM) organization such that it has the skills and culture needed to design, license, and manage the construction and operation of the Yucca Mountain Project with safety, quality, and cost effectiveness;

3. Develop and begin implementation of a comprehensive national transportation plan that accommodates State, local and Tribal concerns and input to the greatest extent practicable; and

4. Minimize the Government's liability associated with the unmet contractual obligations to move spent nuclear fuel from nuclear plant sites.

In my testimony, I also outlined a number of intermediate milestones with dates that would need to be met in order to submit the License Application, including supplementing the repository environmental impact statement. I am pleased to report that we met or beat all but one of those milestones (we missed one by two weeks) and submitted the License Application to the USNRC on June 3 of this year in spite of FY 2007 and FY 2008 appropriations reductions totaling over $200 million less than the President's requests. We were able to accomplish this due to significant improvements the Program has made in management practices and processes. Following a 90-day acceptance review by the USNRC, the Department of Energy (the Department or DOE) believes the License Application will be docketed, thus beginning the formal licensing phase that is anticipated to last three to four years.

Concerning organizational development, the Program is transitioning from a science focus to a project execution focus and the organization must be ready to function successfully as a USNRC licensee to construct and operate the repository, as well as manage the transport and receipt of spent nuclear fuel and high-level radioactive waste.

Internal assessments have identified the need to establish and improve critical business processes, implement human capital management systems to provide a high quality workforce, and implement the organizational structure necessary to achieve optimal productivity and efficiencies during the licensing, construction, and operation phases of the project. The Department is currently developing and implementing the management processes and performance indicators needed to drive continuous improvement, improve individual employee and management job performance, and develop leadership capabilities.

Our focus on transportation has increased. The Department has issued a final rail alignment environmental impact statement for the Nevada Rail Line, submitted an application to the Surface Transportation Board at the U.S. Department of Transportation for a certificate of public convenience and necessity to construct and operate the proposed rail line, and issued a draft National Transportation Plan for comment. In May 2008, the Department also awarded contracts for the design, licensing and demonstration of the Transportation, Aging, and Disposal (TAD) canister system. The TAD canister is planned to be the primary means for packaging spent nuclear fuel for transportation to, and disposal in, the repository at Yucca Mountain. The TAD canister will minimize the need for repetitive handling of spent nuclear fuel by using the same canister from the time the fuel leaves a nuclear power plant; it is a significant step in the transportation planning process.

The DOE has also actively worked with the Department of Justice to achieve settlements

with more than 25 percent of the nuclear industry in connection with lawsuits relating to the Government's delay in beginning acceptance of spent nuclear fuel. The growing liability associated with the Department's inability to begin acceptance of spent nuclear fuel under the Standard Contracts with utilities provides further impetus for the Federal government to move forward with the repository program. To make this happen, it is essential that the Department have access to the Nuclear Waste Fund and its revenue streams as intended under the Nuclear Waste Policy Act of 1982.

To allow the licensing of new nuclear plants, we have informed utilities interested in constructing new reactors that DOE is prepared to discuss a revision to the Standard Contract to cover the new plants. The Department has developed an amendment to the Standard Contract which we believe adequately protects the interests of the taxpayer and the contract holder. The Nuclear Waste Policy Act of 1982 requires that utilities have such a disposal contract with DOE, or be engaged in good faith negotiations with DOE for such a contract, before USNRC may issue a license for a new commercial reactor. Numerous utilities have recently indicated their desire to enter into contracts with the Department for new nuclear power plants they intend to construct. Execution of disposal contracts with the utilities is an essential step in the development of new reactors that are needed to meet our Nation's growing demands for electricity.

My office has also completed four reports that are in DOE review and we expect that they will be released in the near future. The first report is the Total System Life Cycle Cost estimate for the development, construction, operation, and final decommissioning

of the Yucca Mountain repository system and the second report is the fee adequacy assessment of the 1 mil per kilowatt/hour fee paid by nuclear utilities into the Nuclear Waste Fund using the new total cost estimate. The third report addresses the need for a second repository and it is required by the Nuclear Waste Policy Act of 1982 to be submitted by the Secretary of Energy to the President and the Congress. The fourth report concerns the interim storage of spent nuclear fuel from decommissioned reactors, as requested in the House Report that accompanied the Consolidated Appropriations Act, 2008.

FUNDING REFORM

The significant reductions in appropriations funding for FY 2007 and FY 2008 have negated the Department's ability to meet the March 2017 opening date I outlined for this Committee in 2006. To have confidence in any milestones after 2008, it is imperative that the funding process for the OCRWM Program allow the Nuclear Waste Fund and the annual receipts from the nuclear waste generators to be used for their intended purpose. The Nuclear Waste Policy Act of 1982 established the requirement that the generators of spent nuclear fuel must pay for its disposal costs. As a result, the Nuclear Waste Fund was created and is funded by a 1 mil per kilowatt-hour fee on all nuclear generation in this country. As of today, the Fund has a balance of approximately $21 billion which is invested in U.S. Treasury instruments. The Government receives approximately $750 million per year in revenues from on-going nuclear generation and approximately $1 billion from interest earnings.

At the present time, due to technical scoring requirements, the Department cannot receive appropriations from the Nuclear Waste Fund equal to its annual fee receipts or interest or some combination of the two to use for their intended purpose without incurring a significant recorded negative impact on the Federal budget deficit. The monies collected are counted as mandatory receipts in the budgetary process, and spending from the Nuclear Waste Fund is scored against discretionary funding caps for the appropriations process. The Administration has proposed fixing this problem by reclassifying mandatory Nuclear Waste Fund fees as discretionary, in an amount equal to appropriations from the Fund for authorized waste disposal activities. Funding for the Program would still have to be requested by the President and appropriated by the Congress from the Nuclear Waste Fund.

The projected budget authority needed through repository construction is well above current and historic levels, and the current funding level is insufficient to build the repository and the transportation system. The current funding level will not allow the placement of the design and construction contracts for the repository or the transportation systems. In short, DOE will not be able to execute its responsibilities under the Nuclear Waste Policy Act of 1982 and will not be able to set a date for meeting its contractual obligations. Government liability will continue to grow with no apparent limit.

LIABILITY

The calculation of potential liability costs to taxpayers is a complex matter that depends on a number of variables that change year to year; however, on average the taxpayers' liability will increase $500 million annually for every year the Department is required to delay the opening of Yucca Mountain due to funding shortfalls. The DOE estimates that taxpayers' potential liability to contract holders who have paid into the Nuclear Waste Fund will increase from approximately $7 billion to approximately $11 billion because the opening of the repository is delayed from 2017 to 2020. Moreover, the liability costs to the taxpayers do not include the additional costs associated with keeping defense waste sites open longer than originally anticipated. The Department has not yet estimated those costs. It can be seen, however, that each year of delay in opening the repository has significant taxpayer cost implications. Therefore, the Administration believes it is in the Nation's best interest to expedite construction of the repository and the transportation infrastructure necessary to bring both defense and commercial spent nuclear fuel and high-level waste to Yucca Mountain.

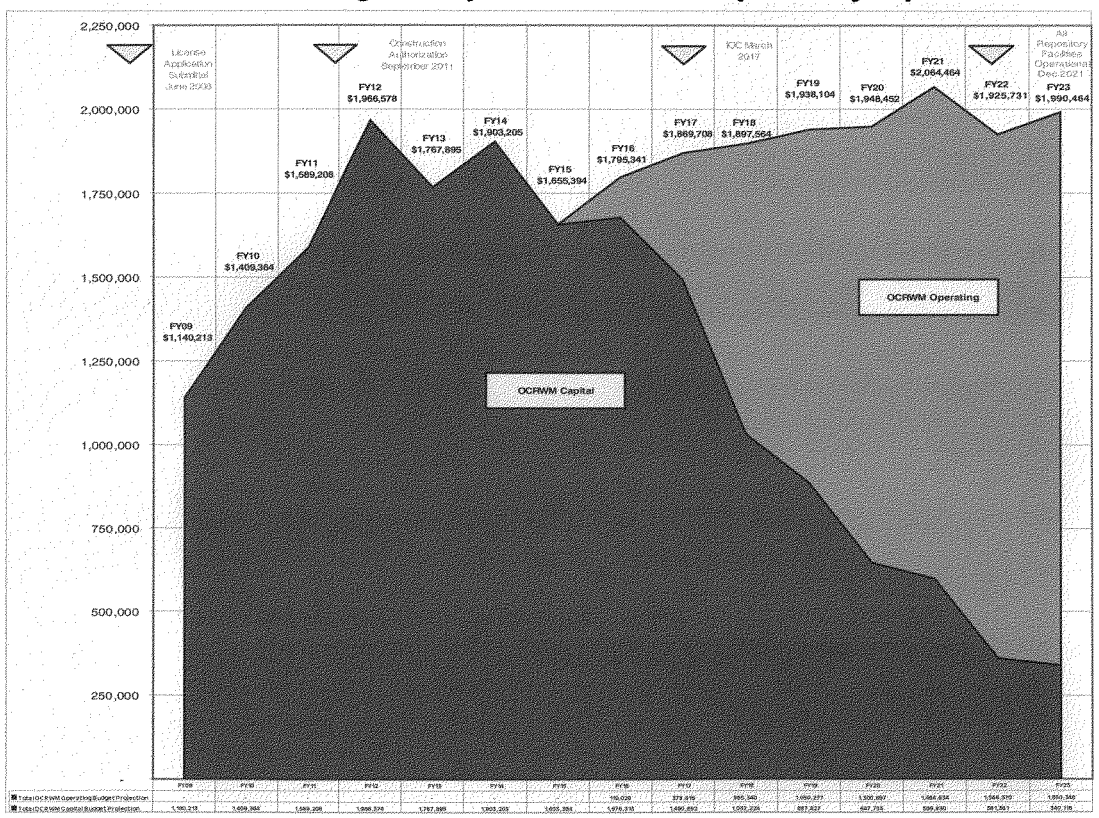
CONCLUSION

Two years ago, when I first appeared before this Committee, I made a number of commitments intended to show that the Yucca Mountain Program was viable and could make progress. I am pleased to report that we have met those commitments, developed and submitted the long delayed License Application to the USNRC, and made substantial

progress in improving the management of this Program. I have every confidence in the senior Federal management team who will run this Program following my departure. They will need the help of Congress, however, to obtain the funding required to execute their mission. Assuming the USNRC grants the Department a Construction Authorization to build the repository in the next three to four years, the Department could be ready to begin accepting spent nuclear fuel by 2020, but only if adequate funding is provided. For the DOE to achieve its mission, it must be allowed to use the Nuclear Waste Fund and its revenue streams as intended by Congress when the Fund was established.

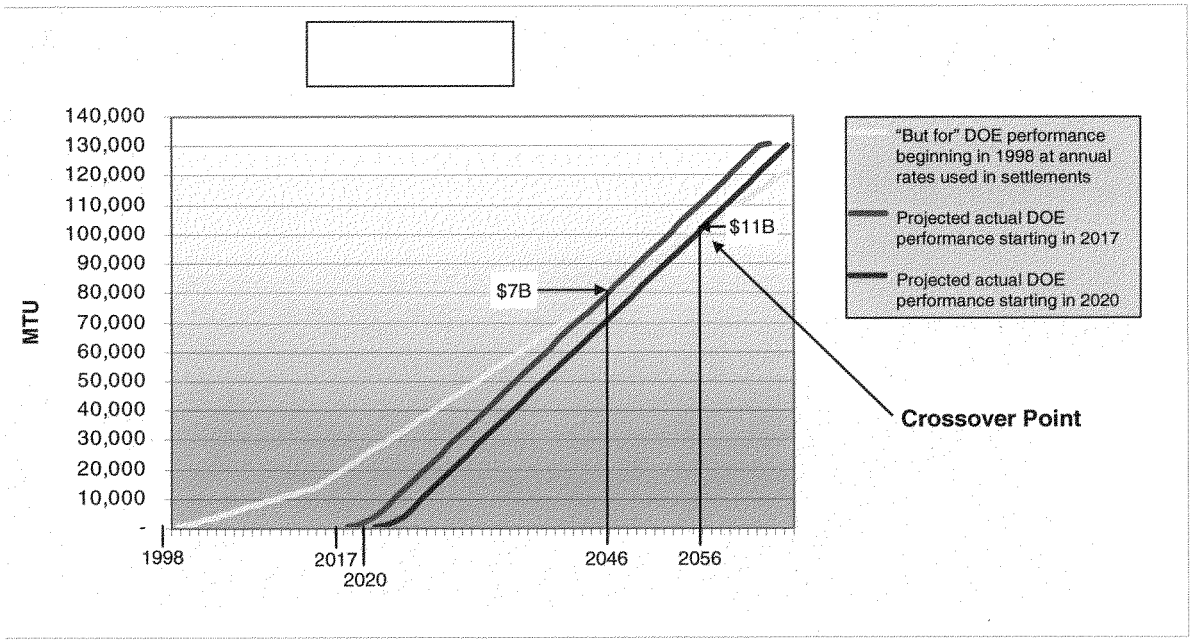
Thank you for this opportunity to discuss the status of the Program. I would be pleased to answer any questions the Committee may have at this time.

OCRWM Total Budget Projection to Full Repository Operations

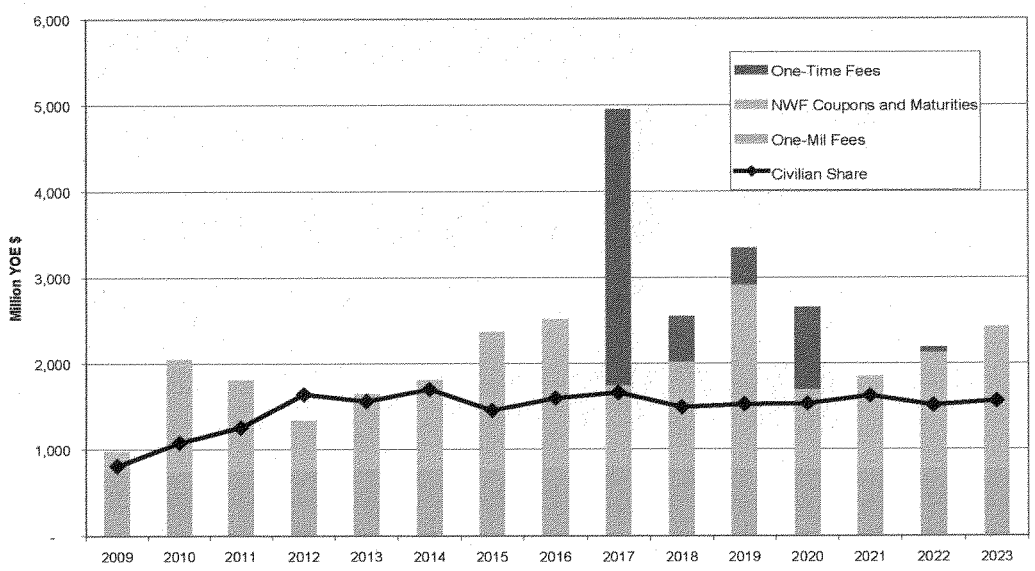


	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Total OCRWM Operating Budget Projection	-	-	-	-	-	-	-	110,028	373,616	665,340	1,050,277	1,300,897	1,464,634	1,544,370	1,650,340
Total OCRWM Capital Budget Projection	1,140,213	1,409,364	1,589,208	1,966,578	1,767,895	1,903,205	1,655,394	1,676,313	1,496,092	1,232,224	887,827	647,555	599,830	381,361	340,125

Government Liability Continues Until Actual Performance Meets Contractual Obligations



Program Cost Projections
Compared to Nuclear Waste Fund Receipts



Mr. BOUCHER. Thank you very much, Mr. Sproat. Mr. Weber.

STATEMENT OF MICHAEL F. WEBER, DIRECTOR, OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS, U.S. NUCLEAR REGULATORY COMMISSION

Mr. WEBER. Good morning. Mr. Chairman, members of the committee, it is my honor to be before you today to discuss the process that the NRC is using to review the license application submitted by the U.S. Department of Energy for a high-level waste repository at Yucca Mountain in Nevada. The NRC takes no position at this time on whether the geologic repository can be built or operated safely at Yucca Mountain. That remains to be determined after our review of the license application. I want to assure you, however, Mr. Chairman and members of the committee, that we will base our decision on whether to authorize construction on NRC's comprehensive and independent safety review and the results of a full and impartial adjudicatory hearing.

The NRC developed and maintains its high-level radioactive waste regulatory program, consistent with our responsibilities under the Nuclear Waste Policy Act and the Energy Policy Act of 1992. The Congress assigned the NRC the regulatory authority to determine whether to authorize construction of the geologic repository at Yucca Mountain and evaluating DOE's license application. NRC received that application, as Mr. Sproat said, on June 3, 2008. Before NRC can begin its full safety review, however, we must first decide whether to accept that application for review. NRC's review process is depicted on the screen. NRC will first decide whether the application contains sufficient information for the staff to commence a detailed technical review. We must also decide whether to adopt DOE's environmental impact statement. If NRC staff accepts the application for review, we would docket the application, begin our formal safety review, and publish a notice of docketing in the Federal Register. We expect to make this decision by early September. At that time, NRC staff would also determine whether to adopt the EIS, adopt the EIS in part and require further supplementation, or not adopt the EIS without further supplementation.

A Notice of Hearing would also offer interested persons the opportunity to file petitions to intervene and to request a hearing. NRC's evaluation of DOE's license application is proceeding. The NRC staff is prepared to conduct a detailed independent technical review of that application. Supporting NRC in the effort is the NRC's Center for Nuclear Waste Regulatory Analyses associated with the Southwest Research Institute in San Antonio, Texas. The NRC staff would examine the license application to determine if the Department of Energy has shown the proposed repository would protect people and the environment in compliance with NRC's requirements. The NRC would provide the opportunity for public hearings on DOE's application that would follow well-established rules and procedures. NRC would decide whether to authorize construction of the proposed repository by objectively reviewing the information submitted, by making decisions on contested matters, based on the record before it, and by maintaining an open and public adjudicatory process.

As the applicant, the Department bears the burden of proving its safety and licensing case before the Atomic Safety and Licensing Board during any hearing. The Board serves as the independent, adjudicatory arm of the NRC. Parties may seek review of the Board's decisions to the Commission. Under the Nuclear Waste Policy Act, NRC is also directed to establish safety and license regulations consistent with the standards for Yucca Mountain set by the Environmental Protection Agency. NRC stands ready to conform our regulations to the final EPA standards when they are published. Without these final additional EPA standards, the NRC staff believes that it could begin to review portions of the DOE license application if we docket that application.

We could not, however, reach any decision whether to deny or grant the construction authorization of the repository without these standards in place. In summary, the Department bears the responsibility for demonstrating that regulatory and licensing requirements are met to protect public health and safety and the environment. The NRC must independently assess this demonstration before we can decide whether to authorize construction of the repository. NRC's ability to reach this important decision in a timely manner depends on 3 things: EPA's issuance of final environmental standards to which NRC can conform our regulations; timely and high quality responses to any requests for additional information that NRC provides the Department of Energy; and sufficient resources from the Congress for NRC to conduct its technical review and carry out its public hearing process.

I can assure you that NRC is committed to conducting a full and impartial review of the Department's application. Thank you for the opportunity to discuss, and I look forward to answering any questions you may have.

[The prepared statement of Mr. Weber follows:]

WRITTEN TESTIMONY
OF MICHAEL WEBER, DIRECTOR
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
UNITED STATES NUCLEAR REGULATORY COMMISSION

TO THE

COMMITTEE ON ENERGY AND COMMERCE
SUBCOMMITTEE ON ENERGY AND AIR QUALITY
UNITED STATES HOUSE OF REPRESENTATIVES
CONCERNING THE PROPOSED HIGH-LEVEL WASTE REPOSITORY AT YUCCA MOUNTAIN, NV

Introduction

Mr. Chairman and Members of the Committee, I am honored to appear before you today to discuss the process the U.S. Nuclear Regulatory Commission (NRC) is using to review the license application submitted by the U.S. Department of Energy (DOE) for a high-level waste repository at Yucca Mountain, in Nevada. Because of the NRC's licensing and adjudicatory role in the national repository program, the NRC takes no position at this time on whether a permanent geologic repository can be built or operated safely at Yucca Mountain. That remains to be determined after our review of DOE's application. I want to assure you, Mr. Chairman, that we will base our decision whether to authorize construction of a repository on NRC's comprehensive and independent safety review, and on consideration of the results of a full and impartial adjudicatory hearing.

NRC's High-Level Waste Regulatory Role

The NRC developed and maintains its high-level waste regulatory program, consistent with its responsibilities under the Nuclear Waste Policy Act of 1982, as amended (NWPA), and the Energy Policy Act of 1992. This legislation specified an integrated approach and a long-range plan for safe storage, transport, and disposal of spent nuclear fuel and high-level waste. It prescribes the respective roles and responsibilities of the NRC, the DOE and the U.S.

Environmental Protection Agency (EPA) in the nation's High-Level Waste program. The Congress assigned NRC the regulatory authority to issue technical criteria to be used in judging an application and, ultimately, to determine whether to authorize construction of a geologic repository at Yucca Mountain after evaluating whether a DOE license application complies with applicable standards and regulations. If NRC approves construction of the repository and if DOE builds it, DOE would need to seek and ultimately receive approval from NRC in order to receive radioactive waste.

NRC's Receipt of DOE's License Application

NRC received DOE's application for the proposed repository at Yucca Mountain on June 3, 2008. On June 19-20, 2008, NRC met publicly with DOE. At this public meeting, DOE staff members presented the application and responded to questions from the NRC staff, Affected Units of Local Government, the State of Nevada, and the public about the organization of the application and its supporting documents.

NRC Must Decide Whether To Accept DOE's Application For Review

Before NRC staff could begin its full safety review, however, we must first decide if we can accept DOE's application for review. NRC's review process is depicted in Exhibit 1. NRC will decide whether the application contains the information required by the regulations and whether that information is sufficient for the staff to commence a detailed technical review. We must also decide whether to adopt DOE's Environmental Impact Statement (EIS) as supplemented. If the NRC staff finds that the application does not pass this initial acceptance review, which may take up to 90 days from receipt, we would return the application to DOE. If, on the other hand, the NRC staff finds that we are able to accept the application for review, we would docket the application, begin our formal safety review, and publish a Notice of Docketing in the ***Federal Register***. At that time, the NRC staff would decide whether to: a) adopt the EIS,

b) adopt the EIS in part, and require further supplementation, or c) not adopt the EIS without further supplementation. A Notice of Hearing would also offer interested persons the opportunity to file petitions to intervene and request a hearing.

NRC's Evaluation of DOE's License Application

Should the DOE application be docketed, the NRC staff is qualified and prepared to conduct a detailed, independent technical review of the application. Supporting NRC in this effort is NRC's conflict-of-interest free, federally-funded research and development center at Southwest Research Institute, the Center for Nuclear Waste Regulatory Analyses. In our review, the NRC staff would examine the license application to determine if DOE has shown that the proposed repository would protect people and the environment, in compliance with NRC's requirements. As part of this examination, and, if necessary, the NRC staff would require DOE to provide additional information. The NRC staff also has the tools, expertise, and ability to perform its own independent confirmatory analyses, as needed. Once the NRC staff completes its comprehensive review, we would document the conclusions in a Safety Evaluation Report (SER).

The NRC would, as noted previously, provide the opportunity for public hearings on DOE's application that would follow well-established rules and procedures. More than 3.6 million documents related to the hearing have already been made available to the potential parties and the public via the NRC's Licensing Support Network. The decisions will be impartial and based on a record of evidence. NRC would decide whether to authorize construction of the proposed repository by objectively reviewing information submitted, by making decisions on contested matters based on the record before it, and by maintaining an open, public adjudicatory process.

As the applicant, DOE would bear the burden of proving its safety and licensing case before the Atomic Safety and Licensing Board during any hearing. The Atomic Safety and

Licensing Board serves as the independent adjudicatory arm of the NRC. Parties may seek review of the Board's decisions from the Commission. The NRC staff would present its own independent views and opinions in support of its technical analyses and SER insofar as those views and opinions bear on the issues placed in controversy in any hearing. This ensures the Atomic Safety and Licensing Board and the Commission would have the benefit of the NRC staff's technical and regulatory expertise in their decision making processes.

Consistent with NWPA Section 114(d), the NRC anticipates that it will reach a decision on whether to authorize construction of a repository within 3 years of docketing the application with the possibility of an additional 12 months to complete the review. This schedule is premised on Congress providing sufficient appropriations from the Nuclear Waste Fund for NRC to conduct its review.

NRC Is Prepared To Implement Final EPA Standards for Yucca Mountain

Under the NWPA, NRC was also directed to establish safety and licensing regulations consistent with standards for Yucca Mountain set by EPA. EPA standards and conforming NRC regulations for Yucca Mountain were published in 2001. Both were challenged in court, and, in 2004, both were upheld on all but one issue: the EPA's specification and NRC's adoption of a 10,000-year compliance period. In 2005, EPA proposed additional standards that would apply for a million years. NRC stands ready to conform our regulations to final EPA standards when they are published.

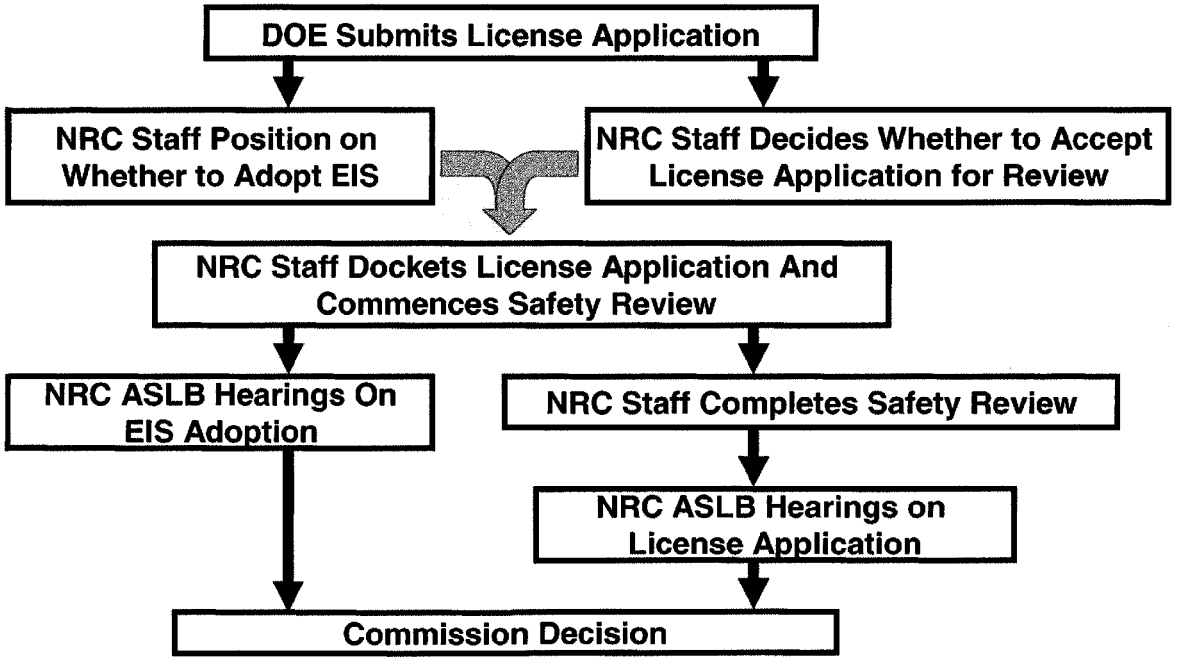
Without these final additional EPA standards, the NRC staff believes that it could begin to review portions of the DOE license application, assuming that we docket it. However, the Commission has before it a petition from the State of Nevada to reject DOE's application on several grounds, including the absence of EPA's final standards. In any event, we could not reach any decision whether to deny or grant DOE authorization to construct a repository without these standards in place.

Summary

The DOE bears the responsibility for demonstrating that regulatory and licensing requirements are met to protect public health and safety and the environment. If DOE's application is accepted by the NRC for review, the NRC, independently, must then assess and find that such a demonstration has been made before we could decide whether or not to authorize construction of the proposed geologic repository. NRC's ability to reach this important decision in a timely manner depends on: a) EPA's issuance of final environmental standards to which NRC can conform its regulations, b) timely and high quality response from DOE to potential NRC requests for additional information, and c) sufficient resources for the NRC to conduct its technical review and carry out the public hearing process. I can assure you that the NRC is committed to conducting a full and impartial review of the DOE application.

I want to thank you for the opportunity to discuss NRC's licensing review process for the proposed repository. I look forward to answering any questions you may have.

Overview of NRC's Decision Process



Mr. BOUCHER. Thank you very much, Mr. Weber. Mr. Meyers.

STATEMENT OF ROBERT J. MEYERS, PRINCIPAL DEPUTY ASSISTANT ADMINISTRATOR, OFFICE OF AIR AND RADIATION, ENVIRONMENTAL PROTECTION AGENCY

Mr. MEYERS. Thank you, Mr. Chairman and members of the subcommittee. I would like to begin by briefly describing EPA's responsibilities for establishing standards for Yucca Mountain and why we have proposed revised standards. The Nuclear Waste Policy Act of 1982 initially prescribed the roles and responsibilities of federal agencies in the development of disposal facilities for spent nuclear fuel and high-level waste. EPA was identified as the agency responsible for establishing standards to protect the general environment for such facilities. In the Energy Policy Act of 1992, Congress delineated the EPA's roles and responsibilities specific to the Federal Government's establishment of the potential repository at Yucca Mountain.

Under that law, EPA's role is to promulgate standards for the Yucca Mountain high-level waste facility in order to protect public health and safety. Congress specified that EPA is to develop these standards specifically for the Yucca Mountain site and as the only such standards applicable to the site. The standards are to be incorporated into the NRC licensing requirements for Yucca Mountain, and the facility would open only if, as mentioned previously, the NRC determines that DOE complied with the NRC regulations. In establishing EPA's role, Congress also stated that the EPA safety standards are to be based upon and consistent with the findings and recommendations of the National Academy of Sciences.

EPA established its Yucca Mountain standards in June 2001. As required by the Energy Policy Act, these standards addressed releases of radioactive material during storage at the site and after final disposal. The storage standard set a dose limit of 15 millirem per year for the public outside the Yucca Mountain site. The disposal standards consisted of 3 components, an individual dose standard, a standard evaluating the impacts of human intrusion into the repository, and a groundwater protection standard. The individual-protection and human-intrusion standards set of limit of 15 millirem per year to a reasonably maximally exposed individual, or RMEI, which would be among the most highly exposed members of the public.

The groundwater protection standard was consistent with EPA's drinking water standards. The disposal standards were to apply for a period of 10,000 years after the facility is closed. Those assessments were to continue beyond 10,000 years and be placed in DOE's Environmental Impact Statement, but were not subject to a compliance standard. The 10,000 year period for compliance assessment was consistent with EPA's generally applicable standards developed under the Nuclear Waste Policy Act. It also reflected international guidance regarding the level of confidence that can be placed in numerical projections over very long periods of time.

As the Committee may be well aware, in July, 2004, the Court of Appeals for the District of Columbia court circuit found in favor of the Agency on all counts except one, the 10,000 year regulatory timeframe. The court that the timeframe of EPA's standards was

not consistent with the National Academy of Sciences' recommendations. EPA proposed a revised rule to address the Appeals Court decision, and the proposed rule would limit radiation doses for Yucca Mountain for up to 1 million years after it closes. Within that regulatory timeframe, we propose 2 dose standards that will apply based on number of years from the time the facility is closed. For the first 10,000 years the proposal retained the 2001 final rules dose limit of 15 millirem per year, and this is the level of protection at the most stringent radiation regulations in the U.S. today. From 10,000 to 1 million years, we proposed a dose limit of 350 millirem per year.

In the time since the closure of the public comment period, we have considered and continue to consider the more than 2,000 comments we received on the proposed rule. A document putting forth our responses to all comments will be published along with the final rule. Since the draft final rule was submitted for OMB review, we have also engaged in productive discussions internally and with other federal agencies about the important and complex issues that have been raised. We look forward to concluding our analysis of the public comments and issuing the final rule.

Thank you again for the opportunity to appear before the subcommittee and present this update on EPA's Yucca Mountain standards. This concludes my prepared statement, and I will be happy to address any questions.

[The prepared statement of Mr. Meyers follows:]

TESTIMONY
OF
ROBERT MEYERS
PRINCIPAL DEPUTY ASSISTANT ADMINISTRATOR FOR
THE OFFICE OF AIR AND RADIATION
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE SUBCOMMITTEE ON ENERGY AND AIR QUALITY
COMMITTEE ON ENERGY AND COMMERCE
U.S. HOUSE OF REPRESENTATIVES
JULY 15, 2008

Mr. Chairman and members of the Subcommittee, thank you for the opportunity to testify today. My name is Robert Meyers and I am the Principal Deputy Assistant Administrator for the Office of Air and Radiation at the United States Environmental Protection Agency ("EPA"). I am pleased to be here today to discuss the status of EPA's public health and safety standards for the proposed spent nuclear fuel and high-level radioactive waste repository at Yucca Mountain, Nevada.

I would like to begin by describing EPA's responsibilities for establishing standards for Yucca Mountain and why we have proposed revised standards. The Nuclear Waste Policy Act of 1982 initially prescribed the roles and responsibilities of federal agencies in the development of disposal facilities for spent nuclear fuel and high-level waste. EPA was identified as the agency responsible for establishing standards to protect the general environment for such facilities. In the Energy Policy Act of 1992, Congress delineated EPA's roles and responsibilities specific to the federal government's establishment of the potential repository at Yucca Mountain. EPA's role is to determine how the Yucca Mountain high-level waste facility must perform to protect public health and safety. Congress directed EPA to develop public health and safety standards that would be incorporated into the Nuclear Regulatory Commission's ("NRC") licensing requirements for the Yucca Mountain facility. The Department of Energy ("DOE") would apply for the license to construct and operate the facility and the facility would open only if NRC determines that DOE complied with NRC regulations which incorporate EPA's standards as well as other requirements. In establishing EPA's role, Congress also stated that EPA's safety standards are to be based upon and consistent with the findings and recommendations of the National Academy of Sciences.

EPA established its Yucca Mountain standards in June 2001. As required by the Energy Policy Act, these standards addressed releases of radioactive material during storage at the site and after final disposal. The storage standard set a dose limit of 15 millirem per year for the public outside the Yucca Mountain site. The disposal standards consisted of three components: an individual dose standard, a standard evaluating the impacts of human intrusion into the repository, and a ground-water protection standard. The individual-protection and human-intrusion standards set a limit of 15 millirem per year to a reasonably maximally exposed individual, who would be among the most highly exposed members of the public. The ground-water protection standard is consistent with EPA's drinking water standards, which the Agency applies in many situations as a pollution prevention measure. The disposal standards were to apply for a period of 10,000 years after the facility is closed. Dose assessments were to continue beyond 10,000 years and be placed in DOE's Environmental Impact Statement, but were not subject to a compliance standard. The 10,000 year period for compliance assessment was consistent with EPA's generally applicable standards developed under the Nuclear Waste Policy Act. It also reflected international guidance regarding the level of confidence that can be placed in numerical projections over very long periods of time.

Shortly after the EPA first established these standards in 2001, the nuclear industry, several environmental and public interest groups, and the State of Nevada challenged the standards in court. In July 2004, the Court of Appeals for the District of Columbia Circuit found in favor of the Agency on all counts except one: the 10,000 year regulatory timeframe. The court found that the timeframe of EPA's standards was not consistent with the National Academy of Sciences' recommendations. The National Academy of Sciences, in a report to EPA, had stated that the EPA's standards should cover at least the time period when the highest releases of radiation are most likely to occur, within the limits imposed by the geologic stability of the Yucca Mountain site. It judged this period of geologic stability, for purposes of projecting releases from the repository, to be on the order of one million years. EPA's 2001 standards required DOE to evaluate the performance of the site for this period, but did not establish a specific dose limit beyond the first 10,000 years.

EPA proposed a revised rule in August 2005 to address the appeals court decision. The proposed rule would limit radiation doses from Yucca Mountain for up to one million years after it closes. No other health and safety rule in the U.S. has ever attempted to regulate risk for such a long period of time. Within that regulatory timeframe, we proposed two dose standards that would apply based on the number of years from the time the facility is closed. For the first 10,000 years, the proposal retained the 2001 final rule's dose limit of 15 millirem per year. This is protection at the level of the most stringent radiation regulations in the U.S. today. From 10,000 to one million years, we proposed a dose limit of 350 millirem per year. The proposed long-term dose standard considered the variation across the country of estimated exposures from natural sources of radiation. Our goal in proposing this level was to ensure that total radiation exposures for people near Yucca Mountain would be no higher than natural levels people live with routinely in other parts of the country today. One million years, which represents 25,000 generations, is consistent with the time period cited by the National Academy of Sciences as providing a reasonable basis for projecting the performance of the disposal system. Our proposal would require the Department of Energy to show that Yucca Mountain can safely contain wastes, even considering the effects of earthquakes, volcanic activity, climate change, and container corrosion over one million years.

The public comment period for the proposed rule closed on November 21, 2005. We held public hearings in Las Vegas and Amargosa Valley, Nevada, and Washington, D.C. We have considered and continue to consider comments from the public hearings, as well as all of the comments submitted to the Agency's rulemaking docket, in preparing the draft final rule. More than 2,000 comments were submitted on the proposed rule. Commenters represented a variety of stakeholder perspectives, including industry, scientific bodies, state and local government, public interest groups, and private citizens. Comments primarily addressed one of three topics: first, the proposed post-10,000-year dose limit of 350 millirem per year, including the rationale for a higher long-term standard and the use of natural radiation levels to derive such a standard; second, the proposed use of the median value of the distribution of dose projections for comparison to the dose limit; and finally, the treatment of long-term events and processes, such as earthquakes and climate change. The comments on these and many other topics are directly related to the significant uncertainties in projecting the performance of the Yucca Mountain

disposal system for up to one million years, and the challenges of interpreting those projections in a regulatory proceeding. A document putting forth our responses to all comments will be published along with the final rule.

Since the draft final rule was submitted for Office of Management and Budget (OMB) review, we have engaged in productive discussions internally and with other federal agencies about the important and complex issues raised by setting a standard that will protect public health and safety and the environment for up to one million years after the Yucca Mountain repository closes. We look forward to concluding our analysis of the public comments and issuing the final rule.

Thank you again for the opportunity to appear before the Subcommittee and present this update on EPA's Yucca Mountain standards. This concludes my prepared statement. I would be happy to address any questions.

Mr. BOUCHER. Thank you very much, Mr. Meyers. Dr. Garrick.

STATEMENT OF B. JOHN GARRICK, CHAIRMAN, U.S. NUCLEAR WASTE TECHNICAL REVIEW BOARD

Mr. GARRICK. Mr. Chairman and members of the subcommittee, good morning. My name is John Garrick. I am Chairman of the Nuclear Waste Technical Review Board and a consultant specializing in the application of the risk sciences to complex technological systems. I am pleased to represent the Board at this hearing. I will summarize my written remarks and ask that they be entered into the hearing record. As has been discussed, Mr. Chairman, after many years of characterizing Yucca Mountain, DOE recently submitted a license application to the NRC. As has already been indicated this morning, Ward Sproat of the Office of Civilian Radioactive Waste Management and his managers, engineers, and scientists deserve to be recognized for their hard work in achieving this major program milestone.

The questions asked by the subcommittee in the invitation letter about what happens next are very timely. I will do my best to present the Board's answers to the question as directly and concisely as possible. First, Mr. Chairman, as far as the timing of licensing decisions is concerned, NRC can respond better to those questions. The subcommittee also asked about the roles of the various groups going forward. The board's technical role was established in the 1987 amendments to the Nuclear Waste Policy Act. The board performs an unbiased, ongoing peer review of the technical and scientific validity of DOE activities related to implementing the Nuclear Waste Policy Act.

We take an integrated view of the many different elements of DOE's program and focus on fundamental understanding as opposed to regulatory compliance. We report our findings and recommendations to Congress and the Secretary of Energy at least twice a year. Because the Board is completely independent, it does not have a direct stake in the development of a Yucca Mountain repository, and it will not be a party to their licensing proceeding. That is as it should be. But we make the Board's body of technical work available by posting its letters, reports, congressional testimony, and meeting transcripts on our Web site. Anyone can use this technical information including parties involved in the NRC's licensing proceedings.

Consistent with its congressional mandate, the Board will continue to report its integrated technical findings and recommendations to DOE and Congress. The subcommittee asked about technical issues that might cause delay or have budget implications. As part of the ongoing evaluation, the Board has identified several priority technical issues that if addressed could increase operational effectiveness or feasibility, enhance the technical basis for repository performance estimates, or improve fundamental understanding. I want to make clear, Mr. Chairman, that by identifying these issues the Board is not commenting on the sufficiency of DOE's license application. NRC will make that determination. Furthermore, the Board did not uncover any issue that it believes would have prevented DOE from submitting its license application for regulatory review. I will begin by commenting on three

preclosure issues that in the Board's opinion could significantly affect funding requirements and schedules. Subsequently, I will address some post-closure issues.

First, DOE's use of a canister known as TAD that can be used for transportation, aging, and disposal of spent nuclear fuel may have merit. However, a TAD that could be transported by truck does not currently exist, making the Nevada rail line necessary for transporting spent fuel to the repository. DOE has acknowledged that constructing a Nevada rail line may present significant institutional challenges. The board has recommended that DOE initiate contingency planning to identify alternatives that can be implemented if delays are encountered in building the rail line. Second, DOE assumes that 90 percent of spent nuclear fuel will arrive at the repository in TAD canisters. However, utilities may need incentives to use TADs and some nuclear plants may lack the necessary infrastructure to handle large TADs. Lower TAD utilization could adversely affect surface facility through-put and require construction of additional waste handling facilities or increase the amount of spent fuel placed in storage at the repository site.

The Board recommends that DOE consider contingencies that could be implemented if TAD utilization rates are lower than the 90 percent assumed. Third, repository performance estimates included in DOE's total system performance assessment or TSPA depend on drip shields to prevent water and rocks from falling on waste packages. However, DOE assumptions about drift degradation and repository tunnel tolerances may make installation of the drip shields, as they are currently designed, problematic. Let me identify some examples of post-closure performance issues. They are the potential for deliquescence-induced localized corrosion of the waste packages during the thermal pulse, questions about the rates of general corrosion of waste packages, and the magnitude and variability of water recharge that occurs as a result of climate change.

We also will continue to follow DOE's work on seismicity and volcanism at Yucca Mountain. The Board believes that addressing these issues is feasible and could reduce uncertainty and strengthen the technical basis for DOE's repository performance estimates. Mr. Chairman, even though DOE has made significant progress over the last several years in enhancing the technical basis for the assumptions and analyses in TSPA, when estimating repository performance for up to 1 million years some uncertainty is inevitable. Deciding how best to address such uncertainties can be challenging. DOE has addressed uncertainties by making what they consider to be conservative assumptions and using probabilistic representations of performance indicators, probability being the language of uncertainty. Another way to address uncertainty is to get more information so that the uncertainties can be reduced. In that regard, the Board has suggested design changes, contingency planning, and additional research.

In answer to your question about schedules and budgets the different approaches require different time and resource commitments. Finally, Mr. Chairman, the Board historically has not recommended changes in legislation and policy because it views its role as providing needed technical context and information for deci-

sion makers. The Board is very comfortable with its statutory mandate and takes very seriously. We look forward to continuing our technical peer review. On behalf of the board members, I thank the subcommittee for inviting us to participate in this hearing. We hope this information we have furnished today will be of use, and I will be pleased to answer questions.

[The prepared statement of Mr. Garrick follows:]

Statement of Dr. B. John Garrick, Chairman
U.S. Nuclear Waste Technical Review Board
Before the
Subcommittee on Energy and Air Quality
Committee on Energy and Commerce
United States House of Representatives
July 15, 2008

Mr. Chairman and members of the Subcommittee, good morning. My name is John Garrick. I am Chairman of the U.S. Nuclear Waste Technical Review Board. The 11 part-time members of the Board are appointed by the President and most of us have other occupations. In my case, I am a consultant specializing in the application of the risk sciences to complex technological systems in the space, defense, chemical, marine, and nuclear fields. I am pleased to represent the Board at this hearing on "progress toward opening a storage facility for high-level civilian nuclear waste at Yucca Mountain in Nye County, Nevada."

As has been discussed, Mr. Chairman, after many years of characterizing Yucca Mountain for its suitability as the proposed site for a deep geologic repository for the permanent disposal of spent nuclear fuel and high-level radioactive waste, the Department of Energy (DOE) recently submitted a license application to the Nuclear Regulatory Commission (NRC). This action represents the achievement of a major program milestone. The questions asked by the Subcommittee in its invitation letter about what happens next are very timely. The questions are paraphrased in my written statement, and I will do my best to present the Board's answers to the questions as directly and succinctly as possible.

What is the timing of decisions on the license application?

NRC will address the adequacy of DOE's license application in relation to NRC regulations and will determine whether the proposed repository complies with whatever repository radiation standard is ultimately promulgated by the Environmental Protection Agency. The NRC is therefore in a better position to respond to questions about the timeline for decisions on a license application.

What is the Board's role going forward?

The Board's congressional mandate, set forth in the 1987 amendments to the Nuclear Waste Policy Act (NWPA), is to perform an unbiased ongoing peer review of the technical and scientific validity of DOE activities related to implementing the NWPA. Because the Board is completely independent, it does not have a direct stake in the development of a Yucca Mountain repository and will not be a party to the licensing proceeding. That is as it should be.

In carrying out its technical peer review, the Board takes an integrated view of the many diverse components of the DOE program and focuses on fundamental understanding as opposed to regulatory compliance. Using the extensive scientific and engineering expertise of its members, the Board evaluates the technical basis of DOE's approach to the entire waste management system, from waste acceptance (i.e., handling of waste at generation sites) through transportation and isolation of spent nuclear fuel and high-level radioactive waste at Yucca Mountain. The Board provides an integrated technical assessment of whether the waste management system will work, based on answers to the following questions:

- Will DOE (or any managing entity) be able to effectively implement the design and fabrication of waste packages; accept spent nuclear fuel at reactor sites or high-level

radioactive waste at federal facilities; transport the waste to the repository; perform necessary surface operations at the repository site, including storage; and emplace waste packages and other engineered barriers underground?

- How strong is the technical basis supporting DOE's assessment that the repository system, including the natural and engineered barriers, will perform as planned?

The Board attempts to make its body of technical work available to the public. For example, most of the Board's public meetings are held in Nevada. The Board reports its findings and recommendations regularly to Congress and the Secretary of Energy. Finally, Board documents, including letters, reports, congressional testimony, and meeting transcripts, are posted on the Board's Web site at www.nwtrb.gov. Anyone can use this information, including parties involved in NRC's licensing proceedings.

Going forward, based on its ongoing technical review the Board will continue to make recommendations to DOE on designing and implementing a safe and effective waste management system, including a permanent repository. We hope that Congress will find the Board's technical findings and recommendations useful as context for policy decisions about radioactive waste management.

What are the outstanding technical issues that could potentially cause delay or increase the costs associated with developing a repository?

Mr. Chairman, as part of its ongoing evaluation, the Board has identified several priority technical issues that if addressed could increase operational effectiveness or feasibility, enhance the technical basis for repository performance estimates, or improve fundamental understanding. Before I present examples of the technical issues, Mr. Chairman, I want to make clear that the Board's identification of these issues should not be construed as comment on the sufficiency of DOE's license application; NRC will make that determination. Furthermore, the Board's

systematic review of DOE activities did not uncover any issue that it believes would have prevented DOE from submitting its license application for regulatory review.

I will begin by commenting on issues related to the first component of the waste management system: preclosure operations.

Preclosure Operational Issues

Several operational and design issues identified by the Board could significantly affect funding requirements and schedules.

First, DOE has designed its waste management system around a canister system that can be used for transportation, aging, and disposal (TAD) of spent nuclear fuel. The Board believes that the TAD concept may have merit. However, a smaller TAD that could be transported by truck does not currently exist. DOE representatives confirmed at a Board meeting held in January that developing a waste management system using TADs makes the Nevada rail line necessary. DOE also has acknowledged in correspondence to the Board that constructing a Nevada rail line may present significant institutional challenges. The Board therefore has recommended that DOE initiate contingency planning to identify alternatives that can be implemented if significant delays are encountered during construction of the rail line to Yucca Mountain.

Second, DOE has established requirements for a TAD-based repository design assuming that 90 percent of commercial spent nuclear fuel will arrive at the repository in TAD canisters. However, utilities may need incentives to use TADs, and some nuclear power plants appear to lack the necessary infrastructure for handling the large TAD canisters. If TAD utilization falls below the planned 90 percent, the lower utilization rate could adversely affect surface facility throughput. It also may require constructing additional waste handling facilities or increasing the amount of spent nuclear fuel that must be placed in storage at the repository site, thus reducing the rate of waste emplacement into the repository. The Board recommends that DOE consider

operational and design contingencies that could be implemented if TAD utilization rates are significantly lower than the 90 percent utilization currently assumed, including an analysis of the effects of direct disposal of dual-purpose canisters.

Third, repository performance estimates included in DOE's total system performance assessment (TSPA) depend on functioning drip shields to prevent water and rocks from falling on waste packages. However, DOE assumptions about drift degradation and repository tunnel tolerances may make installation of the drip shields, as currently designed, problematic.

Issues Affecting Repository Performance Estimates

Examples of technical issues that could affect calculated repository performance estimates are the potential for the occurrence of deliquescence-induced localized corrosion of the waste packages during the thermal pulse, questions about the rates of general corrosion of waste packages, and the magnitude and variability of water recharge that occurs as a result of climate change. The Board also will continue to follow DOE's ongoing scientific investigations of seismicity and volcanism at Yucca Mountain. It is very likely that many of these issues will be addressed during licensing. In any case, the Board believes that addressing these issues is feasible and could reduce uncertainty and strengthen the technical basis for DOE's repository performance estimates.

Mr. Chairman, we can report that DOE has made very significant progress over the last several years in enhancing the technical basis for the assumptions and analyses supporting its repository performance estimates in the TSPA used in the license application. As can be expected, however, for time periods of up to one million years, some uncertainty related to estimates of repository performance are inevitable.

Deciding on the best way to address such uncertainties can be challenging. DOE has addressed uncertainties by making conservative assumptions and using probabilistic representations of performance indicators. In its letters and reports, the Board has suggested design changes, contingency planning, and additional research as ways of addressing uncertainties. Different approaches require different time and resource commitments. The Board will continue to evaluate the possible use of all of these methods to achieve defensible technical assessments.

Does the Board have any recommendations related to nuclear legislation or policy?

Mr. Chairman, the Board historically has not recommended changes in legislation or policy because it views its role as providing needed technical context and information for decision-makers. The Board is very comfortable with its statutory mandate and takes its mission very seriously. The Board looks forward to continuing its independent technical peer review, as described earlier in my statement.

On behalf of the Board members, I thank the Subcommittee for inviting us to participate in this hearing. We hope that the information we have furnished today will be useful.

I will be pleased to respond to your questions.

Summary of Statement of Dr. B. John Garrick, Chairman
U.S. Nuclear Waste Technical Review Board
Before the Subcommittee on Energy and Air Quality
July 15-16, 2008

- The Board's role was established in the Nuclear Waste Policy Amendments Act of 1987. The Board is expected to perform ongoing peer review of the technical and scientific validity of DOE activities related to implementing the Nuclear Waste Policy Act. The Board reports its findings and recommendations at least twice a year to Congress and the Secretary of Energy.
- The Department of Energy's (DOE) submittal of a Yucca Mountain license application to the Nuclear Regulatory Commission (NRC) represents the achievement of a major program milestone.
- Because the Board is completely independent, it does not have a direct stake in the development of a Yucca Mountain repository and will not be a party to the licensing proceeding. That is as it should be.
- Focusing on fundamental understanding as opposed to regulatory compliance, the Board evaluates the technical basis of DOE's approach to the entire waste management system, from waste acceptance through transportation and isolation of spent nuclear fuel and high-level radioactive waste as proposed at Yucca Mountain.
- The Board makes its technical evaluation available by posting Board documents, including letters, reports, congressional testimony, and meeting transcripts, on its Web site at www.nwtrb.gov. Anyone can use this information, including parties involved in NRC's licensing proceedings.
- The Board has identified several technical issues that if addressed could increase operational effectiveness or feasibility, enhance the technical basis for repository performance estimates, or improve fundamental understanding. The Board did not uncover any issue that it believes would have prevented DOE from submitting its license application for regulatory review.
- Operational issues identified by the Board include developing contingencies in case of (1) delay in the development of a Nevada rail spur, (2) lower rate of TAD utilization, and (3) potential problems related to drip shield installation.
- Technical issues that might affect calculated repository performance estimates are deliquescence-induced localized corrosion of the waste packages during the thermal pulse, general corrosion of waste packages, and water recharge that results from climate change. DOE also is investigating seismicity and volcanism at Yucca Mountain.
- DOE has made very significant progress over the last several years, but given the million-year timeframe, some uncertainty in repository performance estimates is inevitable. Uncertainty can be addressed in several ways, and different approaches require different time and resource commitments.
- The Board is very comfortable with its statutory mandate and looks forward to continuing its independent technical peer review.

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Mr. BOUCHER. Thank you very much, Dr. Garrick. Mr. Fertel.

STATEMENT OF MARVIN S. FERTEL, EXECUTIVE VICE PRESIDENT & CHIEF NUCLEAR OFFICER, NUCLEAR ENERGY INSTITUTE

Mr. FERTEL. Chairman Boucher, Ranking Member Upton, members of the subcommittee, thank you for the opportunity to testify today on behalf of the nuclear industry. My testimony will focus on the following issues: the role of nuclear energy in U.S. energy policy; Yucca Mountain as an important part of an integrated approach to managing used nuclear fuel; Yucca Mountain licensing process; and finally, some suggestions on improvements to the federal used fuel management program. As many of you already said, the Nation's 104 commercial nuclear power plans produce approximately 20 percent of our electricity and nuclear energy is by far the Nation's largest source of electricity. It does not produce either greenhouse gases or other regulated air pollutants.

There is a growing consensus that any credible program to reduce greenhouse gas emissions in the U.S. and worldwide will require a portfolio of technologies and approaches and that nuclear energy is an indispensable part of that portfolio. While it is important to note that no new nuclear plants in the U.S. will be developed based on electricity market fundamentals the industry recognizes that the issue of safe and secure used fuel management is important to all stakeholders as they look at the benefits of nuclear energy towards meeting our electricity supply requirements and environmental goals. Congress should have continued confidence in the industry's demonstrated ability to safely and securely manage used nuclear fuel. This performance provides a solid under pinning for the continued and expanded use of nuclear energy. NRC's existing waste confidence rule provides a basis for addressing this issue in licensing proceedings.

Absent the passage of legislation that codifies waste confidence from a national policy perspective, the basis for the existing NRC rule could be strengthened. Therefore, the industry believes that it is appropriate for the Nuclear Regulatory Commission to update its waste confidence finding through rulemaking. In this regard, we look forward to the NRC expediting a rulemaking on this issue beginning this year. The renewed interest in nuclear energy has led to a dialogue and growing consensus that an integrated approach to managing used nuclear fuel is needed. This approach consists of the following elements: centralized interim storage; appropriate research, development, demonstration and ultimately deployment of advanced recycling technologies to derive additional energy from used nuclear fuel and reduce the volume, heat, and radiotoxicity of fuel cycle byproducts; and ultimate disposal of those byproducts in a repository.

The growing interest in central interim storage and nuclear fuel recycling does not eliminate the need for geologic disposal of the residual waste products from recycling, though it certainly could significantly modify the waste forms, volumes, toxicity, and repository designs associated with the final disposal of those products. The June 3, 2008, submittal of DOE's application to NRC to construct the Yucca Mountain repository represents a very significant step in

a robust and rigorous scientific process towards development of a disposal facility. As others have said, Ward Sproat and the Yucca Mountain project team ought to be complimented for their effort in completing and submitting the license application. Like our experience in licensing operating reactors and other fuel cycle facilities, we expect the Yucca Mountain licensing process will be fair, open, transparent, and rigorous. DOE must demonstrate to the NRC that the repository will protect public health, safety, and the environment. Otherwise, the repository will not be licensed.

The industry intends to participate as a party to the Yucca Mountain licensing process to help support a transparent, rigorous, and timely process, and to protect industry and its customers interest. Turning now to improvements to the used fuel management program. The Yucca Mountain licensing process is only one part of a larger effort to safely and securely manage used nuclear fuel. The first improvement needed reflects the need to allow the use of the nuclear waste fund for its intended purposes. Consumer commitments to the fund plus interest totaled $30 billion since 1983. To date, only a fraction of this money has been allocated for its intended purposes. Changes to how the contributions are made to and disbursements are taken from the fund are necessary.

Second, a more effective management structure is needed to assure that all three elements of the integrated used fuel management program are effectively and efficiently carried out. Making the fund available will not by itself lead to success. Congress should consider alternative management structures for implementing the integrated used fuel program that allow private sector principles and public-private partnership arrangements to be effectively applied to better program management and implementation in the future. Industry urges the Committee to hold hearings to explore potential future funding and management options for implementing this more comprehensive used nuclear fuel program. In closing, I would again like to thank this committee for its diligence and commitment to insuring that our nation continues to benefit from the electricity provided by nuclear power plants and for its help in improving the implementation of and confidence in our nation's used nuclear fuel management program. I will be pleased to answer any questions.

[The prepared statement of Mr. Fertel follows:]

Marvin S. Fertel
Executive Vice President and Chief Nuclear Officer
Nuclear Energy Institute

U.S. House of Representatives
House Committee
Committee on Energy and Commerce
Subcommittee on Energy and Air Quality

Washington, D.C.
July 15, 2008

Chairman Boucher, Ranking Member Upton, Chairman Dingell and Ranking Member Barton, and members of the committee, I am Marvin Fertel, Executive Vice President and Chief Nuclear Officer at the Nuclear Energy Institute (NEI). I would like to thank you on behalf of the nuclear energy industry for the opportunity to testify before this committee on the Yucca Mountain project and the nation's used nuclear fuel management policy.

NEI is responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of nuclear power plant operation and the entire nuclear fuel cycle. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, companies engaged in the storage and transportation of reactor fuel, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

We thank the committee for its long-standing support for the Yucca Mountain project and for holding this hearing. This is a pivotal time for the project as the Department of Energy (DOE) recently submitted a license application to the Nuclear Regulatory Commission seeking approval to construct a repository for the disposal of used nuclear fuel and high-level radioactive material, including defense waste, at Yucca Mountain, Nevada.

Disposal of used nuclear fuel and high-level radioactive waste is a key component of integrated management of used fuel, which also includes centralized interim storage, and research development and demonstration of advanced fuel treatment technology to close the nuclear fuel cycle. It is vital to the national interest that Congress provides the appropriate oversight to ensure that the Yucca Mountain license application review is a fair and objective process that is based on sound science and engineering.

Today, my testimony will focus on the following issues:

- The vital role of nuclear energy in U.S. energy policy and the need for new nuclear power plants as part of a comprehensive, balanced energy plan that enhances U.S. energy security.
- Yucca Mountain as an important part of an integrated approach to managing used nuclear fuel that will support the long-term growth of nuclear energy.

- The Yucca Mountain licensing process.
- Improvements to the federal used fuel management program.

Nuclear Energy is a Vital Part of Any National Energy Plan

The nation's 104 commercial nuclear power plants produce approximately 20 percent of U.S. electricity. In the last decade, the industry has improved operating efficiency and increased power output of nuclear plants as one way of using existing assets to help keep pace with growing electricity demand. Nuclear energy has consistently maintained its place as the nation's largest source of electricity (more than 70 percent) that does not produce greenhouse gases or controlled air pollutants.

There is a growing consensus that any credible program to reduce greenhouse gas emissions in the U.S. and worldwide will require a portfolio of technologies and approaches, and that nuclear energy is an indispensable part of that portfolio. Most recently, the U.S. National Academy of Sciences and similar scientific organizations from 14 other nations – including the remaining G8 nations – recognized the important role of nuclear energy in reducing greenhouse gases. Not surprisingly, public opinion polls indicate that a strong majority of the American public favors building new nuclear plants.

While it is important to note that new nuclear plants will be developed based on electricity market fundamentals, the industry recognizes that the issue of safe and secure used fuel management is important to all stakeholders as they look at the benefits of nuclear energy towards meeting our electricity supply requirements and its environmental goals. In this regard, consistent with satisfying the regulations imposed by the NRC and the oversight provided by the NRC, industry has achieved an excellent record of safety in the management of used nuclear fuel. At present, there are 58,000 metric tons of used reactor fuel rods currently in storage; most are located in steel and concrete vault-like pools at nuclear plant sites. As these on-site storage facilities reach capacity, the oldest fuel rods are moved to specially-designed steel and concrete dry containers. The industry has safely loaded 11,000 metric tons of fuel into 960 containers at 40 sites. As other nuclear plants reach capacity in their storage vaults, the number of dry containers used for storage is expected to nearly double by 2020.

Congress should have continued confidence that the industry's demonstrated ability to safely and securely manage these materials on-site provides a solid underpinning for the continued and expanded use of nuclear energy. NRC's existing "Waste Confidence Rule" provides a basis for addressing this issue in licensing proceeding. Absent the passage of legislation that codifies waste confidence from a national policy perspective, the basis for the existing NRC rule could be strengthened. Therefore, the industry believes that it is appropriate for the Nuclear Regulatory Commission to update its waste confidence finding through rulemaking. In this regard, we look forward to the NRC expediting a rulemaking on this issue beginning this year.

Several significant events have occurred since the last NRC rule on this issue in 1999, necessitating a rulemaking to update and modify the bases for the waste confidence

findings. These events include plans for more than 30 new reactors and license renewal for nearly half of the existing nuclear plants.

In addition, and of particular significance to the current bases for Waste Confidence, the Bush administration and Congress are considering a more integrated used fuel management policy that could include recycling and closing the nuclear fuel cycle. The implementation of such a strategy would not only impact the waste form(s) that will require disposal, but would also impact the timing for the disposal.

Geologic Repository is an Important Part of Integrated Used Fuel Management

In 1982, Congress enacted the Nuclear Waste Policy Act (NWPA), mandating the federal government begin collecting and disposing of used nuclear fuel from U.S. nuclear power plants beginning no later than January 31, 1998. The law was consistent with the international consensus that deep geologic isolation is the preferred method for disposing used nuclear fuel and high-level radioactive waste. The 1998 deadline has long come and gone, forcing the industry to develop interim measures for safely and securely managing the growing inventory of used nuclear fuel at reactor sites. More than 60 lawsuits against the federal government have been brought in the Court of Claims by electric utilities to recover damages caused by DOE's failure to meet the 1998 deadline. Clearly, there is a legal obligation for DOE to begin removing used fuel from nuclear power plant sites. DOE is more than 20 years behind schedule in beginning to move used fuel from commercial nuclear plants for storage or disposal. The resulting liability from federal government inaction continues to grow into the billions of dollars, with no end in sight. Although used fuel storage at nuclear power plants is safe and secure, moving used fuel to central storage facilities will further enhance safety and security, and confidence in the government program by first consolidating this material from shut down reactors and by beginning the process of used fuel consolidation from operating reactors.

The renewed interest in nuclear energy growth has led to a dialogue and growing consensus that an integrated approach to managing used nuclear fuel is needed. This approach consists of the following elements:

- centralized interim storage;
- research, development, demonstration and ultimately deployment of advanced recycling technologies to derive additional energy from used nuclear fuel and reduce the volume, heat, and radiotoxicity of fuel cycle byproducts; and
- ultimate disposal of those byproducts in a repository.

The growing interest in central interim storage and nuclear fuel recycling does not eliminate the need for geologic disposal of the residual waste product(s) from recycling, though it certainly could significantly modify the waste forms, volumes, toxicity and repository designs associated with the final disposal of these products. Under any used nuclear fuel management scenario, a geologic repository will be necessary.

This is true world-wide. All nations that rely on nuclear energy – even those reprocessing used nuclear fuel – are in some stage of developing a repository.

However, no nation has come as far as the United States. The Department of Energy's license application to the NRC for the Yucca Mountain repository represents more progress than any other international project to build a geologic disposal facility. The United States must continue to exercise the leadership that we have displayed in getting to this point, as other nations look to follow our example.

Yucca Mountain Licensing

The June 3, 2008, submittal of DOE's application to NRC to construct the Yucca Mountain repository represents a very significant step in a robust and rigorous scientific process toward development of a disposal facility. The Yucca Mountain license application is built upon more than 20 years of world-class scientific and engineering. Hundreds of highly qualified experts have collected and analyzed data from seven miles of experimental tunnels and laboratories carved into Yucca Mountain and hundreds of boreholes drilled into mountain and its surrounding terrain. Their work has undergone peer review by leading international experts and been subject to rigorous quality assurance reviews. Thus far, the nation has spent approximately $10 billion on studying the suitability of Yucca Mountain as the nation's repository.

The nation deserves to have an objective determination on whether to build and subsequently operate the repository that is based on a thorough evaluation of the results of this massive scientific and engineering program. The Yucca Mountain licensing process will be fair, open, transparent and rigorous. DOE must demonstrate to the NRC (and potentially in subsequent judicial reviews) that the repository will protect public health, safety and the environment. Otherwise, the repository will not be licensed.

The NRC has been preparing its expert scientific and engineering team to review the DOE license application. The commission will use the same proven approach in reviewing the license application for the Yucca Mountain repository that it has used in determining the safety of the nation's 104 commercial nuclear power reactors.

The industry intends to participate as a party to the Yucca Mountain licensing process to help support a transparent, rigorous and timely licensing process and to protect industry and its customers' interests. We will bring highly qualified scientific and technical resources to this effort.

Once a repository and other elements of the integrated used fuel management are developed, the industry is confident in the nation's ability to safely and securely transport used nuclear fuel to central interim storage, recycling, and repository sites. This confidence is based on the exemplary record of transportation safety and security that has been established over the past four decades – including 3,000 U.S. shipments over 1.7 million miles, and more than 24,000 shipments internationally. All told, more than 73,000 metric tons of used nuclear fuel and high-level radioactive waste have been transported with no injuries, fatalities or environmental damage as a result of the radioactive nature of the cargo.

Federal Used Fuel Management Program Improvements

The Yucca Mountain licensing process is only one part of a larger effort to safely and securely manage used nuclear fuel. The resurgence of interest in nuclear energy as a source of reliable, affordable and clean electricity to meet rising electricity demand and reduce greenhouse gases requires a fresh look at used fuel management policies to ensure they support an era of expansion for nuclear energy. Concurrent with the industry's development of new reactors, the government must take several actions related to used-fuel management.

First of all, the use of the Nuclear Waste Fund (fund) for its intended purpose must be addressed. Consumer commitments to the fund, plus interest, total $30 billion since 1983. The fund is growing by about $1 billion per year, and if used as intended, will pay for disposal of the nation's commercial used nuclear fuel. To date, only a fraction of this money has been allocated for its intended purpose. Persistent funding shortfalls are one reason why, 10 years after the date required by Nuclear Waste Policy Act for the nation to have an operating repository, we are just beginning the repository licensing process.

The courts consistently have affirmed that the federal government, and thus taxpayers, are liable for this delay. Already, the courts have awarded on the order of one-half billion dollars in judgments and settlements to electric utilities, and every additional year of delay adds another $1 billion to this liability. While it may be possible to continue the Yucca Mountain licensing process with budgets that are constrained by the current funding mechanism, improved access to the fund will be needed if Yucca Mountain is to be built and operated.

Secondly, a more effective management structure is needed to assure that all three elements of integrated used fuel management are effectively and efficiently carried out. Simply making the fund available will not, by itself, lead to success. In order for these funds to be effectively deployed, an improved management structure must be put in place. Congress should consider alternative management structures for the Yucca Mountain Project that allow private sector principles and public-private partnership arrangements to be effectively applied for better program management and implementation.

Industry urges the committee to hold hearings to explore potential future funding and management options for the federal used nuclear fuel program. The committee should continue to exercise vigilant oversight of the existing program to ensure that it moves forward as intended by the Nuclear Waste Policy Act.

Conclusion

The U.S. nuclear industry has demonstrated that it can safely and securely manage used nuclear fuel at nuclear power plant sites. However, it is important for enhancing confidence of the public and state and local policymakers that the federal government begin to remove used fuel from reactor sites as required by the Nuclear Waste Policy Act. Each additional year of delay exposes taxpayers to another $1 billion in liabilities. The Yucca Mountain licensing process is an important step in this direction. But it is not

the only imperative. Interim storage, recycling, and reform of the federal used fuel program's financing and management structure must also be addressed.

Industry continues to be encouraged by this committee's diligent attention to these matters. Further, until the government is in a position to begin removing used fuel from reactor sites, the nation can remain confident that it will be safely and securely managed by industry.

Mr. BOUCHER. Thank you very much, Mr. Fertel. Ms. George.

STATEMENT OF ANNE C. GEORGE, COMMISSIONER, CONNECTICUT DEPARTMENT OF PUBLIC UTILITY CONTROL; CHAIR, NARUC COMMITTEE ON ELECTRICITY

Ms. GEORGE. Good morning, Mr. Chairman, Ranking Member Upton, members of the subcommittee. As the chairman indicated, I am a Commissioner from the Connecticut Public Utility Control Department, and as well I am a member of the NARUC Electricity Committee and Chairman of the Electricity Committee. I am testifying today on behalf of NARUC. NARUC's goals in the nuclear waste area are well known. Our members have been here several times and in other committee forums, and our message has been very consistent. Simply put, the Federal Government needs to meet its obligation under the Nuclear Waste Policy Act to accept spent nuclear fuel from utilities and other nuclear generators in a timely manner for safe disposal.

The Nation's ratepayers have upheld their end of the bargain struck in the Nuclear Waste Policy Act by providing more than $27 billion for use in constructing a nuclear waste repository. Connecticut ratepayers alone have paid $766 million into the fund. Additionally, NARUC believes that the nuclear waste fund should only be employed for its intended purpose. Monies in the fund should be utilized for the sole purpose of supporting the opening of the Yucca Mountain facility in a timely fashion. NARUC was very encouraged with the filing of the Yucca Mountain construction license application. We commend the DOE for their work on this project of unprecedented scale. But as we move forward, we feel there is a critical need to address the financial basis for the program that will offer greater certainty than the year-to-year suspense of the current appropriations process. As many of the members in their opening statements commented, this current appropriations process doesn't seem to work well for this large scale project.

The Nuclear Waste Policy Act created a well-designed fund that was intended to collect fees based on generation of electricity from nuclear sources sufficient to pay for the safe disposal of commercial spent fuel in a geologic repository. However, in reality the fund is not operating as intended. There is no connection between the revenue collected from the country's ratepayers and appropriations for the project. The appropriations that have been made available to the repository program have continuously been reduced by Congress, and we acknowledge and appreciate past attempts by the Energy and Commerce Committee to reform the way in which appropriations are made from the nuclear waste fund, and we also appreciate that the Administration has twice proposed legislative remedy through the Nuclear Fuel Management and Disposal Act.

However, none of these reforms have moved forward to actual passage and NARUC is concerned that the current appropriations process will not be adequate to support the timely design and construction of the project. I believe Mr. Sproat laid out well the budgetary disconnect between what the appropriations have been and what the program needs are. I am going to just touch on a few other matters of concern for NARUC members briefly. We encour-

age the DOE to develop a plan for DOE to move spent fuel from the decommissioned reactor storage sites that exist around the States. We have one such site in East Haddam, Connecticut, the former Connecticut Yankee facility. With the removal of the spent fuel, these sites can be fully decommissioned and reclaimed for other beneficial uses.

Also, many people are fearful of the perceived risk of transportation of spent fuel and other high-level radioactive material. NARUC believes that education and nuclear waste transportation is vital to increasing understanding and public confidence in the transportation of spent nuclear fuel. In conclusion, we are pleased that the matter of the safety and suitability of the proposed repository is before the NRC, which is the agency designated by law and with expertise to make those determinations. It goes without saying that NARUC wants the repository to meet all safety and health standards. At this time, I will wrap up, and I want to thank the Committee for its attention.

[The prepared statement of Ms. George follows:]

BEFORE THE
UNITED STATES HOUSE OF REPRESENTATIVES

SUBCOMMITTEE ON ENERGY AND AIR QUALITY

TESTIMONY OF THE HONORABLE ANNE C. GEORGE
COMMISSIONER, CONNECTICUT DEPARTMENT OF PUBLIC UTILITY CONTROL
ON BEHALF OF THE
NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS

ON

"Next Steps Toward Permanent Nuclear Waste Disposal"

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Summary of Remarks by
The Honorable Anne C. George
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Before the
U.S. House of Representatives
Energy and Commerce Committee, Subcommittee on Energy and Air Quality

- The federal government needs to meet its obligation under the Nuclear Waste Policy Act of 1982, as amended, to accept spent nuclear fuel from utilities and other nuclear generators for safe disposal in a timely manner. The nation's ratepayers have upheld their end of the bargain struck in the Nuclear Waste Policy Act by providing, either directly or through income generated on prior payments, more than $27 billion for use in constructing a nuclear waste repository

- The Nuclear Waste Fund should only be employed for its intended purpose and that the monies in the Fund should be utilized, along with appropriations from the Department of Defense budget, for the sole purpose of supporting the opening of the Yucca Mountain facility in a timely fashion.

- There is a critical need to address the financial basis for the program that will offer greater certainty than the year-to-year suspense of the current appropriations process.

- NARUC encourages the Department of Energy to seize the initiative in response to a requirement in the FY 2008 Omnibus Appropriations Act to develop a plan for moving spent fuel from decommissioned reactor storage sites for interim storage.

- NARUC urges all parties, especially non-governmental organizations, to improve public understanding of what will be involved in nuclear waste transportation for the repository program and to continue the dialogue between the Department of Energy and hazardous materials transportation planning agencies designated by States and tribal organizations.

- NARUC believes it is a positive step that the matter of the safety and suitability of the proposed repository is before the Nuclear Regulatory Commission, which is the agency designated by law and with the expertise to make those determinations. It goes without saying that NARUC wants the repository to meet safety and health standards.

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

My name is Anne George. I am a commissioner of the Connecticut Department of Public Utility Control, which is the agency that regulates utilities in our State. I also am a member of the National Association of Regulatory Utility Commissioners (NARUC) and serve as chair of the Association's Electricity Committee. I am testifying today on behalf of NARUC. I greatly appreciate the opportunity to appear before you this morning. The issues that you are addressing in this hearing are very important to NARUC's membership and my State, and I am grateful to have this opportunity to present our point of view concerning the disposition of spent nuclear fuel currently stored at nuclear power plant sites throughout the country that is intended for ultimate disposal at the Yucca Mountain geologic repository.

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

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

such services are provided under rates and subject to terms and conditions of service that are just, reasonable, and non-discriminatory.

NARUC's goals in the nuclear waste area are well known and have been stated before this and other Congressional committees on a number of prior occasions. Simply put, the federal government needs to meet its obligation under the Nuclear Waste Policy Act of 1982, as amended, to accept spent nuclear fuel from utilities and other nuclear generators for safe disposal in a timely manner. The nation's ratepayers have upheld their end of the bargain struck in the Nuclear Waste Policy Act by providing, either directly or through income generated on prior payments, more than $27 billion for use in constructing a nuclear waste repository. Indeed, Connecticut ratepayers have paid $766 million so far. Additionally, the Nuclear Waste Fund should only be employed for its intended purpose and that the monies in the Fund should be utilized, along with appropriations from the Department of Defense budget, for the sole purpose of supporting the opening of the Yucca Mountain facility in a timely fashion. These basic principles underlying NARUC's approach to the nuclear waste issue provide a solid foundation for future policy decisions concerning the nuclear waste program.

We had anticipated that the Department of Energy would have submitted the license application for construction of the repository at Yucca Mountain within a year or two after the President designated the site in 2002 and Congress approved it by House Joint Resolution 87, but matters got complicated as they always seem to do with this project. In 2004, the U.S. Court of Appeals for the District of Columbia Circuit issued a

remand order to the Environmental Protection Agency to revise its radiation regulation for Yucca Mountain to be based on and consistent with recommendations of the National Academy of Sciences. EPA published a draft revised rule in 2005 for public comment. EPA was then to evaluate the comments received and issue a final rule. Inexplicably, the EPA has still not published the final rule, even after an EPA witness testified in October 2007 that it would be finalized "soon."

Regulatory matters were not the only cause for delay. DOE revised its spent fuel handling scheme for the repository to reduce handling operations and, as we understood it, save billions of dollars for facilities costs by adapting an all-in-one transportation, aging (storage) and disposal canister system. This required significant redesign and cost estimate revisions that DOE said would improve safety and would likely be welcomed by the Nuclear Regulatory Commission when they reviewed the license application.

And, as is almost customary, Congress continued its practice of cutting the repository program budget, as well as causing uncertainty by failing to pass an appropriations bill on time and having program officials contend with a series of continuing resolutions. In the current fiscal year the Omnibus Appropriations Act cut $108 million from the program after the fiscal year was three months along. This required the program director to issue layoff notices to project staff employees and contractor personnel just as they were at the critical stage of compiling the license application.

On June 3, 2008, the Secretary of Energy made the announcement that the Yucca Mountain construction license application was complete and formally transmitted to the NRC. He and the Director of the Office of Civilian Radioactive Waste Management, Edward "Ward" Sproat, III, who led the government-contractor team that prepared the application, expressed confidence that the application meets all of the NRC and EPA regulatory requirements. The officials said the Department would be ready to defend it during the three- to four-year review period. NARUC commends DOE for their work on this project of unprecedented scale.

With the application filed at the NRC, the question arises of "what's next?" Of all the challenges this project faces, be they technical, regulatory, political, environmental or legal, we feel there is a critical need to address the financial basis for the program that will offer greater certainty than the year-to-year suspense of the current appropriations process. The Nuclear Waste Policy Act created a well-designed Nuclear Waste Fund that was intended to collect fees based on generation of electricity from nuclear sources sufficient to pay for the safe disposal of commercial spent fuel in a geologic repository. The Defense budget would pay the share of disposal costs for the government-managed high-level radioactive waste. Many people refer to the Nuclear Waste Fund as a trust fund, but as members of this Committee know, it is not managed like a trust fund. We often feel that the only part of the Nuclear Waste Fund that is operating as designed is the fee collection. Since June of 1983, utilities have been sending their fee payments into the Treasury. From there, there is no correlation between revenue and disbursements for the repository program. Our Washington staff tells me that the fee revenue is collected as

"mandatory receipts," but the appropriations are authorized as part of the "discretionary" part of the federal budget and there is no connection between revenue and appropriations.

The Committee may have more current information on the status of the Nuclear Waste Fund, but here is what the Department of Energy shows on its web site for the end of Fiscal Year 2007:

Total fee payments, cumulative since 1983	$15.5 billion
Investment returns credited to the Fund	11.6 billion
Total income through FY 2007	27.2 billion
Total disbursements	6.9 billion
Nuclear Waste Fund balance	20.3 billion

Let us look at an annual summary, looking at FY 2008:

Forecast fee payments	$ 0.766 billion
Investment returns	1.1 billion
Total income	1.8 billion
Appropriations	0.187 billion
Forecast of ending NWF balance (September 30, 2008)	21.5 billion

So, the perception of ratepayers who have paid into the Nuclear Waste Fund is this: The Fund, set up by Congress for the sole purpose of disposal of commercial spent nuclear fuel, is growing at a rate of more than one billion dollars per year—earning more in interest than total fee payments—yet, the repository program has chronically been

reduced by Congress from the budget request to the point where in a critical period for preparing the license application, the repository program director had to lay off highly-skilled government and contractor personnel who were contributing to the documentation that will demonstrate that the repository will meet the requirements of the regulations of the NRC. I would not expect a private party seeking a license from the NRC to have to contend with such turmoil.

The situation could be even worse: there is some question on whether the $20 billion in the Fund is really there. As I understand it, the Fund balance consists of various Treasury bills, notes and bonds that constitute an investment by the Fund, which even earns returns that are also added to the Fund. But, until a future Congress decides to appropriate some of those funds, they remain practically inaccessible

We appreciate past attempts by the Energy and Commerce Committee to reform the way in which appropriations are made from the Nuclear Waste Fund. We also appreciate that the Administration has twice proposed a legislative remedy through the *Nuclear Fuel Management and Disposal Act*. Unfortunately, no action was taken on the bill, probably because other provisions in the bill are intended to enable development of the Yucca Mountain repository and conventional wisdom seems to be that no such bill will be considered in the Senate.

Absent action by Congress to approve the modest proposal to reclassify mandatory Nuclear Waste Fund receipts as discretionary, the nuclear waste program

director was unable to propose an FY 2009 budget request for the repository program that matched the cash flow forecast he presented to this Committee in March 2007. The forecast for FY 2009 "requirements" to enable repository waste acceptance beginning in 2017 was for $1.14 billion. Instead, the actual budget request was "level funded" with the FY 2008 *request* of $247.3 million from the Fund (and another $247.4 million from the Defense Nuclear Waste Disposal account). Office of Civilian Radioactive Nuclear Management Director Sproat told both House and Senate Appropriations Subcommittees this spring that, "Funding at current levels in future years will not be adequate to support design and the necessary concurrent capital purchases for repository construction, transportation infrastructure, and transportation and disposal casks. The development of a credible schedule for the Program is highly dependent upon a steady and reliable funding stream." As you know, Mr. Sproat has stopped forecasting important milestones for the repository because of uncertainty over availability of financial resources.

As for other matters, we encourage the Department of Energy to seize the initiative in response to a requirement in the FY 2008 Omnibus Appropriations Act to develop a plan for moving spent fuel from decommissioned reactor storage sites. We have one such site in East Haddam in Connecticut. NARUC has discussed the subject with DOE staff and find them cautious about getting involved in interim storage. They are concerned that such a project could be a diversion of limited resources to the detriment of the repository program. They also point out that DOE lacks authority to provide interim storage. Securing authorization can be one of the elements to the plan, provided the Department can show it is worthwhile. We think it is. DOE seems not to be

looking at the situation from the point of view of the communities that surround these nearly decommissioned sites. But for the removal of the spent fuel, the sites can be decommissioned and reclaimed for other beneficial uses. We also feel that preparing for and moving the spent fuel would help improve public confidence that this material can be and is moved safely. We don't know what it will cost to create an interim storage facility and move spent fuel to it, but since DOE and the taxpayers will eventually be liable for those costs, it makes sense to price out the costs and benefits of doing so.

Finally, nuclear-waste transportation may seem like a tangential item until you analyze why many people are apprehensive and easily moved to be fearful of nuclear waste disposal. Many people are fearful of the perceived risk of transportation of spent fuel and other high-level radioactive material. They may not realize that the material is only shipped in robust shielded containers that are licensed by the NRC. They are usually unaware of the excellent safety record of past shipments. We have observed at public hearings and in media coverage considerable emphasis placed on transportation "impacts." Let us be honest and recognize that there are quite a few organizations and individuals who present their own version of the possible risks with a tendency to portray a plausible, if unlikely, worst case scenario. We also can observe that there are people who simply do not trust either the nuclear industry or DOE on this subject.

When there are disputes over facts and myths of controversial topics such as this, it is useful to call upon an organization with the skills and objectivity to analyze and present an assessment that can serve to inform the public. That was done when a

Committee on Transportation of Radioactive Waste from the National Research Council of the National Academies of Science conducted a study of the subject and published its report, *Going the Distance*, in 2006. The report says, "The committee could identify no fundamental technical barriers to the safe transport of spent fuel and high-level radioactive waste in the United States. However, there are a number of social and institutional challenges to the successful initial implementation of large-quantity shipping programs that will require expeditious resolution." The NAS committee drew the distinction between health and safety risks and social risks. While the "radiological risks are well understood and are generally low," the report concludes the social risks pose important challenges and suggests some proactive ways to characterize, communicate and manage the social risks.

The NAS report also endorses DOE's plan to ship spent fuel and high-level waste by mostly rail using dedicated trains. There seems to be broad consensus among stakeholders that rail shipments (which can carry more payload and thus be fewer in number) are preferred over highway shipments. Here again we come back to highlighting the importance of reform of the Nuclear Waste Fund appropriations process: there is presently no rail access to the repository site. DOE proposes to build a rail line connecting the site to the mainline in the eastern part of the State. It could cost $2.5 billion and take at least five years to build through some rugged and remote sections. When the repository program director provided the cash flow requirements forecast in March of 2007 to this Subcommittee, it included $237 million for Nevada transportation infrastructure, which I believe encompasses detailed engineering and design of the 300

mile line. Instead, under the level-funded budget, the FY 09 Budget requests just $20 million for all transportation-related activities. What that tells me, unless the program gains access to the annual fee revenue and eventually the Nuclear Waste Fund corpus, that the rail connection to the repository is unlikely to be operational by the time the repository is ready to receive waste. This means that much of the initial shipments in Nevada will be by truck or that the repository operations will be further delayed until the rail link is complete. With all the public attention focused on the initial shipments, there is bound to be anxiety expressed over the highway shipments, considering that many stakeholders and the government itself preferred shipments by rail.

Conclusion

In conclusion, we are pleased that the matter of the safety and suitability of the proposed repository is before the Nuclear Regulatory Commission, which is the agency designated by law and with the expertise to make those determinations. It goes without saying that NARUC wants the repository to meet safety and health standards.

We urge the Congress to reform the Nuclear Waste Fund appropriations process so that the fees being collected from utilities and their customers can be available for their intended purpose.

We encourage the Department of Energy to take a positive approach toward taking the spent nuclear fuel from the decommissioned reactor storage sites to an interim

storage facility so that the decommissioning can be completed and the sites turned back to productive uses.

We urge all parties, especially non-governmental organizations, to improve public understanding of what will be involved in nuclear waste transportation for the repository program and to continue the dialogue between the Department of Energy and hazardous materials transportation planning agencies designated by States and tribal organizations.

If DOE plans to ship most spent fuel and other waste by "mostly rail," Congress needs to commit to providing the financial resources to enabling the construction of the missing rail link to the repository site.

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

Mr. BOUCHER. Well, Ms. George, thank you very much and thank each of the witnesses for your testimony here this morning. Mr. Sproat, let me begin my questions with you. There is currently in law a 70,000 ton statutory limit on the capacity of Yucca Mountain. On what is that limit based? Was it an arbitrary decision or was it based on some technical characteristic of the site?

Mr. SPROAT. Well, Mr. Chairman, that limit is in the Nuclear Waste Policy Act, and since I wasn't around at that point in time, I don't know exactly all the logic but all of our studies including our environmental impact studies indicate that the technical capability of Yucca Mountain repository is at least twice that, and there have been some studies done by the Electric Power Research Institute to indicate 3 to 4 times that amount. I will say, however, that we are about ready to issue a report on the need for a second repository, and one of the things that report will point out is that in the Nuclear Waste Policy Act as it is currently written, that 70,000 metric ton limit on Yucca only applies until a second repository goes into operation. If a second repository is licensed and goes into operation somewhere else in the U.S. that 70,000 metric ton limit on Yucca expires.

Mr. BOUCHER. Meaning that it is eliminated?

Mr. SPROAT. That is correct.

Mr. BOUCHER. Meaning that more waste could then be stored at Yucca?

Mr. SPROAT. That is correct.

Mr. BOUCHER. And that is current law?

Mr. SPROAT. That is current law.

Mr. BOUCHER. Dr. Garrick, do you happen to know whether or not there was some technical reason related to the characteristics of the site itself that that 70,000 ton limit was chosen?

Mr. GARRICK. No. The board——

Mr. BOUCHER. That is a sufficient answer. My time is a little limited so let me just move on to something else. It is just a curious matter as to why that number was said, and I am looking for some rationale for it. At the current level, I think the U.S. Government has already assumed about $250 million in liability to the electric utilities for not having met the commitment which matured in 1998, that the high-level waste be taken by the Federal Government from those utilities. And obviously that sum will grow over time, which leads to the question of whether or not it might be more cost effective to have an interim storage facility that would be under government ownership that would then take that waste and store it in one central location.

I think another argument potentially for doing that is that the central storage of that waste might be safer than keeping the waste at a variety of sites around the country, each of which might have its own particular vulnerabilities. Mr. Sproat, what is your view of that, first in terms of cost effectiveness and then secondly in terms of whether or not a central facility might be safer?

Mr. SPROAT. Mr. Chairman, we have completed our report on the interim storage option that the House Appropriations Committee asked us to prepare, and it is in final review. Essentially what that report is going to say is that, number 1, in order for the Department to have the authority to proceed with interim storage at a

central location, we would need additional legislative authority. The Nuclear Waste Policy Act specifically does not allow us to take commercial spent nuclear fuel until Yucca Mountain is operational. We do have authority to take——

Mr. BOUCHER. Well, understanding we would have to pass another law to make that possible. Let us get to whether or not it is a good idea. First, what is your judgment on that?

Mr. SPROAT. I don't believe so, and I will tell you why. Number 1 is that, first of all, we would have to find a site for it, and while some folks have said, well, we will find a local community that would be willing to host it, I would say that Nye County in Nevada, which is the host county for the Yucca Mountain repository, would like to host the repository, but the State is obviously, as Ms. Berkley talked about, is very much opposed. The siting of an interim location and the gaining of not only local acceptance but State acceptance and surrounding State acceptance is very problematic, and when you take a look at realistically, number 1, could that be done and, if so, how long it would take, at the point where we are now 3 to 4 years away from possibly being ready to begin construction of Yucca Mountain. I don't believe it is a cost effective solution.

Mr. BOUCHER. All right. That is a thorough answer. Thank you. Mr. Meyers, the Circuit Court of Appeals for the District of Columbia rejected the original EPA health and safety radiation standard, and required that you formulate one based on a million year time horizon. Where are you in completing that work and do you have a projected date by which that standard will be completed, realizing that it has to be used by the NRC in reviewing the license application?

Mr. MEYERS. Yes, Mr. Chairman. We are well aware of our role and responsibilities in this matter. We did go out in response to the district court case. We have been in an interagency review and a number of discussions, and we would be hopeful to resolve those discussions in a timely fashion. So we anticipate we will complete our duties under the law and promulgate a final standard.

Mr. BOUCHER. By what date? I am sorry.

Mr. MEYERS. I probably cannot give you a specific date, sir. I would like to do that, but I am not in a position to do that.

Mr. BOUCHER. Can you give me a suggested timeframe within which you might do that?

Mr. MEYERS. Well, this Administration is committed to finishing its work so——

Mr. BOUCHER. During the course of this Administration?

Mr. MEYERS. Yes.

Mr. BOUCHER. Well, that is a very good answer. Thank you. My time has about expired. Dr. Garrick, I have one additional question for you. A number of the members of this subcommittee have expressed an interest in exploring the possibility of having nuclear waste reprocessing, and there are many technical issues that are associated with the potential for moving to that strategy. Before any further consideration could take place of that, I think we would have a range of technical questions that we would need to have answered. Does your organization have any history of looking at that issue and is it within your charter to consider and perhaps answer the questions associated with reprocessing?

Mr. GARRICK. Our Board has not looked at reprocessing. We have looked at—we have been pretty much focused on the issues associated with implementing the act and how it is being implemented at the current time. The board certainly has technical capability to address a much broader scope of questions relating to waste and waste handling than just analyzing the Yucca Mountain project, we have not been asked to do that.

Mr. BOUCHER. But if we were to pose questions to you, you are in a position to respond?

Mr. GARRICK. Yes.

Mr. BOUCHER. Well, that is good to know. Thank you. My time has expired. The gentleman from Michigan, Mr. Upton.

Mr. UPTON. Thank you, Mr. Chairman. I would like to follow up on two of your questions. First of all, Mr. Sproat, the question was raised about the 70,000 metric tons of waste in terms of a cap. You indicated a couple ways that the cap could be lifted. What are the estimates in terms of how much the repository physically can hold?

Mr. SPROAT. In our current documents, and because the Nuclear Waste Policy Act places that 70,000 metric ton limit on it our license application only analyzes or designs the repository to that limit. But our environmental impact studies looked at, I believe it is 130,000 metric tons, and indicated that would not have any adverse environmental impact of that level. We at the Department haven't evaluated anything higher than that, but the geologists tell me who know the site pretty well, there is plenty of room to go larger than that.

Mr. UPTON. OK. Mr. Meyers, you indicated that you thought that the radioactivity standard would be done yet this year or at least by January 19 of next year. Mr. Weber, if they don't issue a final radioactivity standard, will you be able to complete your review of DOE's license application?

Mr. WEBER. No, sir.

Mr. UPTON. OK. Mr. Sproat—I just wanted a yes or no. There are a number of us that have supported taking the nuclear waste fund off-budget. If we were able to take it off-budget, could you tell us how that might expedite construction of the repository?

Mr. SPROAT. We are at a point now where now that we have a preliminary design that we have submitted with the license application, the shortest potential critical path to get us to opening the repository in the best achievable schedule is 2020. And we have rebaselined the program based on receiving flat funding at about $495 million a year for this year and the next 3 years. But then at that point in time ramping up the funding to approximately $2 billion a year, and it varies from year to year. Every year we don't hit that funding profile that date will push out.

Mr. UPTON. So, Mr. Weber, if the energy and water appropriation bill freezes things at the '08 level, which I guess is likely to do based on what we are seeing in terms of the appropriations committee now, how will that affect—how will even a 1-year freeze impact the review of the license application?

Mr. WEBER. It will put the NRC's ability to complete the construction authorization decision in 3 to 4 years in peril. At that level of funding which already started in fiscal year '08 it is re-

duced below what the NRC projected would be necessary in order to support the 3 to 4 year review.

Mr. UPTON. By about a billion dollars?

Mr. WEBER. No, sir. Our appropriations are far less than——

Mr. UPTON. No, but the shortfall being about a billion dollars?

Mr. WEBER. I believe in fiscal year '09 the House Appropriations Committee boosted by $36 million, which puts us in the range of support on an annual basis that we would need to meet the 3 to 4 year review cycle.

Mr. UPTON. OK. Ms. George, has your organization taken a stand on taking the funding off-budget?

Ms. GEORGE. Yes. It is something that we have supported in the past and we continue to support. We think that as Mr. Sproat indicated, when you look at what the program costs are and what is being appropriated the match isn't there obviously and the best way to handle that is to take it off-budget.

Mr. UPTON. And I look at my State of Michigan, we have a number of different sites with nuclear reactors, two in my district. One is using a dry cask storage. Another one is about ready, they received a license review to do that. We have one facility that is closed as well up in the northern part of the peninsula and they are storing high-level nuclear waste there. How long do you think these—has NARUC looked at the number of different facilities around the country, 104, I think, different active reactor facilities? Have you all taken a stand in terms of how long you want that high-level nuclear waste stored in those temporary sites?

Ms. GEORGE. At those individual sites?

Mr. UPTON. Correct.

Ms. GEORGE. I don't think that we have actually—the membership has looked at the exact length of time. No, I am being told. I think most of the members are concerned about that, that dispersement of the storage at the individual sites, and several States have been in litigation with the Department of Energy over the moving of spent fuel to a permanent repository, and so the membership's goal is to move it as quickly as we can, and we see the budget issues as being the biggest impediment right now to getting to that permanent repository.

Mr. UPTON. Thank you. Thanks very much.

Mr. BOUCHER. Thank you very much, Mr. Upton. The gentleman from Texas, Mr. Gonzalez, is recognized for 8 minutes.

Mr. GONZALEZ. Thank you very much, Mr. Chairman. And Mr. Sproat, Mr. Weber, Mr. Meyers, especially, I represent half of San Antonio, Texas. CPS Energy is the municipally-owned utility, part owner of the south Texas nuclear project, and a pro-advocate and partner with NRG on that application that is pending out there, one of the first in a long time. I am sure that you all are aware that the utility, especially a municipally-owned utility, is a tremendous investment just in the application stage, huge, and for us because it is municipally-owned that means that you have the city council that is involved, the ratepayers. It is very political, unlike maybe other situations. But what I am hearing here today is probably going to cause some concern. My fear is that it will be used and seized upon as an argument against expanding our portfolio to include greater nuclear capacity, which makes a lot of sense to me.

Mr. Weber, your testimony was that if everything doesn't go according to plan, and Mr. Sproat, I think you really are going to be considering alternatives in the interim site, storage site, and so on, so I think we are relegated, committed to the process. But what Mr. Weber is saying is if things don't go accordingly and there is an approval or there is delay then that application sits there in limbo and delays what you are already viewing as a time process or time line to approve an application indefinitely, is that correct?

Mr. WEBER. If you heard that I said we were going to put it in limbo—no, no, you didn't say you were going to put it in limbo but it does have a consequence. What is the consequence?

Mr. SPROAT. We will review the application should we docket it later this year. What will happen if the NRC is not given sufficient appropriated funds to support that review is it will stretch out that review schedule. At this moment, we are preparing options for the Commission in light of those projected resource forecasts so that the Commission can decide which approach it wishes to take. We are committed to fulfill our statutory responsibility to the Nuclear Waste Policy Act and the Atomic Energy Act, but we need to do it responsibly and responsibly to the NRC is to ensure the safety and the security of those that would be directly affected by the repository.

Mr. GONZALEZ. And that is understood. I mean one thing is funding, that you are adequately funded to go ahead and proceed with what your duties and responsibilities, and then those are predicated on obviously safety and health concerns and such. I think we all understand that. But I think walking away from this hearing today because I know I am going to be hearing from my folks back home as to what was the end result of what we heard here, are we on track, when will all this—because let me see if I got this straight, Mr. Sproat, if everything is according to plan, everyone is funded, the plans are up to muster, everything, you are looking at something being operational in 2020, is that correct?

Mr. SPROAT. That is the best achievable date if everything went right, including the key issue of us receiving essentially an unrestrained cash flow for funding on the shortest possible critical path.

Mr. GONZALEZ. All right. And, Mr. Weber, if 2020 is not the target date, how does that impact the review and the approval of an application for expanding the south Texas nuclear project or any other project in the United States today?

Mr. WEBER. Mr. Gonzalez, you may be familiar with the waste confidence proceeding that the Commission undertook decades ago now. The staff was recently directed by the Commission to go back and revisit that Waste Confidence finding and we have recommendations now pending before the Commission, including options for the Commission to consider. I think it is important to point out that as part of Waste Confidence, the NRC determined back in 1990 that spent nuclear fuel could be safely stored with minimal to no environmental impact for at least 100 years, so we have confidence that the material could be stored safely during that interim period should there be a delay in the opening of the repository.

There is still a need for the repository, and that is why we are doing our part to do the licensing review if we accept the application.

Mr. GONZALEZ. So let me see, if south Texas came aboard in the '70s, we got 30 years so we got about 70 years to play with where we are going to be OK then. But what I am saying is I think delay doesn't really work to anyone's benefit, and I am going to share the concerns expressed by some of the individuals today, some of my colleagues, unfortunately, that I think that regulatory delays and such and implementing what we are going to have as a permanent site, now whether that was prudent or not, picking one huge site even though there may be another one in the future in retrospect maybe not but we are really faced with this. But the problem is that this particular aspect of nuclear energy is being capitalized as an argument against expanding our nuclear capacity. We really don't need that at this point in time so your responsibility and duty is huge. It could very well determine where we are going.

And I don't know whether further judicial action may take place where you have a court that is going to—you may have a judge that simply says you still don't have anything in place as a permanent storage so there are some concerns here and by judicial edict you could actually delay further implementation. This is actually pretty scary, but I am going to go back and finish up in the last couple of minutes with just a question to the first 3 members—the witnesses, I am sorry, Mr. Weber, Mr. Meyers, and Mr. Sproat, and that was what my colleague and the ranking member actually alluded to, and that was about alternatives. In his opening statement, he made some reference to alternatives. Do we have any other options other than what we presently have on the table, and of course with the opposition as expressed vigorously by Congresswoman Berkley. Do we have any other options that are realistic, that would be timely and feasible?

Mr. SPROAT. I will take my first cut at answering that, Mr. Gonzalez. I believe the answer to that is today, no. The Nuclear Waste Policy Act set up the Federal Government direction on spent nuclear fuel with disposal of commercial spent nuclear fuel and high-level nuclear waste from the defense sector in a repository. That is the only direction that the Department of Energy has at this stage of the game. It is the only direction it has had for the last 20 years, and we have finally gotten to the point where we are 3 to 4 years away from knowing whether or not that path is successful or not.

Mr. GONZALEZ. Mr. Weber and Mr. Meyers, do you all have an opinion as to alternatives?

Mr. WEBER. I would concur with Mr. Sproat. That is the law of the land as defined in the Nuclear Waste Policy Act. If there were a need to revisit that, the leadership would come from the Congress as advised from the agencies that are before you.

Mr. GONZALEZ. Mr. Meyers.

Mr. MEYERS. As I stated in my opening testimony, our role here is to develop standards specific to the site and applicable to the site so that we are operating under that very specific authority in the Nuclear Waste Policy Act.

Mr. GONZALEZ. The information you glean from the roles that you presently play though I think are important if in fact somewhere along the way someone is going to say are there alternatives, so I know you have that in mind. I don't think we are going to get any word on that today, but I am going to yield back and thank the chairman.

Mr. BOUCHER. Thank you very much, Mr. Gonzalez. The gentleman from Illinois, Mr. Shimkus, is recognized for 5 minutes.

Mr. SHIMKUS. Thank you, Mr. Chairman. I appreciate my colleague from Texas's line of questioning because you are complying with legislation that we passed, and the answer to my colleague's question is based upon the Nuclear Waste Policy Act. Another question could be, what legislative changes can we do to move more rapidly, what processes? We know we need more electricity generation for the future. We know that nuclear power should be part of the portfolio. I have been told—we passed loan guarantees in the 2005 energy bill as an incentive. I have also been told that the most important thing that we could do is move aggressively to open Yucca Mountain by the nuclear power industry. It sends a signal to the industry that we are not going to force them to hold this stuff that we have agreed to take forever to a point.

So I have a couple questions. Mr. Sproat, why don't we consider the Yucca—first of all, I want to respond to my colleague, Ms. Berkley. I live in the Midwest, not the east, and I live down state in Illinois, not in the Chicagoland where all our nuclear power plants are except for one, but I have been to Yucca Mountain, and it is a mountain and it isn't a desert and there is nobody around there. That is true. Where in the greater Chicagoland, I imagine there are 10 nuclear power plants with a population of about 9½ million people around. This doesn't take a hard jump. So why don't we consider doing a couple things. If we have to go to interim storage, why not interim storage at the Yucca Mountain site?

Mr. SPROAT. Mr. Shimkus, if we were to go with interim storage that would be the place that would make most sense to put it because we would eventually have to move the waste there anyway. However, in current law the Nuclear Waste Policy Act specifically prohibits the development of interim storage at the Yucca Mountain——

Mr. SHIMKUS. Great, because my time is limited. Let me highlight that, Mr. Chairman. Current law. These guys are constrained by the Nuclear Waste Policy Act. If the citizens were listening to this debate, they would just be bonkers. Since 1982 doing this to where we are at today to 2020. No wonder we have energy issues, and no wonder we have energy problems.

But I would think it would make sense, and it would also be great for the great State of Nevada if we had an interim site, we did a reprocessing facility right there, and then the high-level remaining residue could go right into the mountain. It is clear and we need to change the law to do that. Ms. George, we have talked about last week again going back to the other bill on carbon capture and sequestration about the roles of the Utility Commission on rates and what you have done. And, of course, the rates that you have agreed to allow to be charged to go to this fund was also part of our debate. Why isn't there a movement by the Utility

ommissioners to say the Federal Government has overcharged, they are not paying foCr the site, we are going to drop that rate off the bill? Why don't you get some federalism backbone and call our bluff?

Ms. GEORGE. Well, we have tried to do that by actually preventing the rates to be collected. We haven't gone that far but that is the purpose of me being here today and NARUC, we passed several policy resolutions. We have been here on the Hill testifying numerous times on this. I agree with you, it is outrageous that ratepayers have had to pay this fund for this number—this rate for this number of years. And we are getting to a point definitely where we are fed up with this now getting to the point of not approving the rate as not being fair and reasonable because it is not going to the intended purpose. Obviously, that is something that would be the next step. But we have a federal law in place that allows for these costs and——

Mr. SHIMKUS. But that is a thing that the State commissioners and the State could decide to do. You could decide that so much money has gone to this fund, so little has been paid out, the Federal Government is not meeting its obligations, we are not collecting it for the Federal Government anymore. States could make that decision. I am just doing this based upon our debate last week of this other proposed bill on this charging and this regulatory issue on the transmission to help incentivize carbon capture and sequestration. My opening statement talked about, why trust us when we have this Nuclear Waste Policy Act that has been a disaster? It speaks to probably letting the private sector do it versus us.

Ms. GEORGE. And I understand what you are trying to get to. The way the process is set up the utilities make the payments and then the costs are passed through in the rates, and so it is very difficult for the Utilities Commissions to not allow that portion. It is built into the rates, and so I think what you are suggesting——

Mr. SHIMKUS. We are just looking for help, and this testimony is great but sending price signals I think is even a stronger message. Thank you, Mr. Chairman.

Mr. BOUCHER. Thank you very much, Mr. Shimkus. The gentleman from Utah, Mr. Matheson, is recognized for 5 minutes.

Mr. MATHESON. Thank you, Mr. Chairman. I have 2 or 3 lines of thought I will try to fit into the 5 minutes. First of all, I would like to ask unanimous consent to insert for the record a letter sent by the Nevada Senate and House delegation to the Nuclear Regulatory Commission on June 5, 2008, relative to the license application.

Mr. BOUCHER. Without objection.

[The information appears at the conclusion of the hearing.]

Mr. MATHESON. And I wanted to read 1 paragraph from this letter because I think people might find this pretty interesting. It has to do with one of the engineering firms that was looking at bidding on DOE's contract to design the transportation aging and disposal cast part of the project. They withdrew from bidding and when they withdrew they said the following. One reason for reticence in this matter is the materiality of the project which as configured is a mission impossible. Consider DOE's mandate that the aging mod-

ule at the geological repository operations must be able to remain stable under the ecosites design basis earthquake. At 3 times the acceleration due to gravity the Yucca quake will turn an array of freestanding casks into a chaotic melee of bouncing and rolling juggernauts. A computer simulation of a freestanding earthquake available upon request from us will convince the reader of this publication that pigs will fly before the cask will stay put.

And that is what one engineering firm thinks about one of the technical aspects of this project, and I think it is important for us to put on the table that not all these issues have been resolved as of yet. The issue on interim storage, I just wanted to emphasize the bill I mentioned earlier has to do with on-site interim storage. It is not creating the new interim storage facility some place in America. It is talking about leaving it on-site where it is today. And I thought that the point Mr. Shimkus made about we have been sitting around since 1982 when the Nuclear Waste Policy Act was passed, things have changed since 1982. Dry cask storage didn't exist in 1982, and it does exist now as a bona fide technology.

And so I would ask, first of all, Mr. Sproat, have you at DOE evaluated the cost effectiveness. Because I know the Chairman earlier asked about cost effectiveness of different options, he asked about the cost effectiveness of interim storage facility if it was a separate facility, but I want to know about whether the cost effectiveness of leaving the waste on-site and dry cask storage is a method we could use.

Mr. SPROAT. Mr. Matheson, it really becomes a question of, so for how long are you going to leave it there, and when would the Federal Government take up the cost of guarding it, storing it, and eventually it is going to move, and the longer you leave it there the more it is going to cost to eventually move it to wherever you are going to move it to. So I don't see interim storage on-site with federal ownership being a cost effective solution because in fact it is not a solution.

Mr. MATHESON. Has DOE even evaluated the cost effectiveness?

Mr. SPROAT. We do that because right now under the current legal construct, we are being held liable for incurred incremental cost at the utility——

Mr. MATHESON. Have you evaluated the cost effectiveness of looking at putting it on-site, dry cask storage, for let us say another 100 years?

Mr. SPROAT. Not at every site, no.

Mr. MATHESON. OK. I wanted to make sure of that. Mr. Fertel, I notice the Nuclear Energy Institute has predicted that 83 of our country's 104 nuclear power plants, that is 80 percent of the existing plants, will have on-site dry cask storage by the year 2050. The nuclear industry may very well be preparing for a future where Yucca Mountain isn't your only option for your waste. If the Yucca repository is never built, will that be the end of the nuclear power industry in the United States?

Mr. FERTEL. I mean the Yucca license application just went in. The NRC will review it. We believe that it is certainly licensable but they need to determine that, so there is always the possibility in our country that something doesn't get a license from a health and safety standpoint so, no, it is not the end of nuclear power.

What we need to do then is find alternatives if Yucca Mountain is not licensable. We should go forward and see if it is licensable. And what you are seeing we are projecting is because DOE has not been able to begin to move used fuel starting in 1998 and basically our sites have to put in dry cask storage, and that is why PUCs are allowing the waste fund contributions to go forward. If I can just respond to something——

Mr. MATHESON. I am really running out of time. I would be happy for him to respond to Mr. Shimkus if the Chairman will grant us more time, but let me ask one more question. Mr. Sproat, you have indicated to Congress that you would provide a life cycle cost estimate for the Yucca Mountain project. In July of 2006 you promised this committee that type of item in a report. In March, 2007, DOE gave Congress a budget project promising to submit a life cycle cost report by late 2007. In October, 2007, you reiterated that a report was coming during a hearing for the House Budget Committee. When do you think DOE will finally deliver the life cycle cost estimate?

Mr. SPROAT. Within the next 2 to 3 weeks. That report is done, but we are planning on releasing that report at the same time that we are releasing the required annual fee adequacy assessment. In other words, based on that total system life cycle cost estimate, we take a look at the adequacy of the 1 mill per kilowatt hour fee. We are releasing both of those reports at the same time because I think that way the Congress will get a total picture in terms of the cost impact and the fee impact of the cost of the repository based on the design we have submitted to the NRC.

Mr. MATHESON. We anxiously await that report, Mr. Chairman. I have used my time. Thank you.

Mr. BOUCHER. Thank you very much, Mr. Matheson. The gentleman from Arizona, Mr. Shadegg, is recognized for 5 minutes.

Mr. SHADEGG. Thank you, Mr. Chairman, and I want to thank all of our witnesses. I want to begin by saying I am somewhat frustrated. As I have watched this Congress unveil itself, I have noticed that every significant bill, every politically charged bill, every major piece of legislation, and this seems to be a growing trend, that we move through the floor that we move through as a suspension, and it is usually coupled with a motherhood and apple pie vote plus a terrible vote for the minority and nobody wants to allow any amendments and nobody wants to allow any regular order. And I hope that the committee chairman and subcommittee chairman on the majority side are beginning to get frustrated at that breakdown because I don't think that is a process that serves the country very well, and it makes me wonder why I spend my time listening in hearings. I know I learn a lot from these gentlemen, but it is not one thing to learn it. I need to also be able to use that knowledge to work, to shape legislation that benefits the American people.

So with that caveat, let me begin by saying in a certain way I want to echo the words of Mr. Shimkus, which is that I think if American were truly watching this hearing today, they would be saying, excuse me, 1982 to 2020, and I think they would really be saying, are any of these witnesses or any of those members of Congress reading the daily news because we are in a crisis in this

country. We have just discovered that oil has gone through the roof. We know that at least a substantial number of Americans believe greenhouse gases are threatening our planet, and nobody is kind of awake. Nobody has recognized that nuclear power holds tremendous potential.

Last weekend I was home in my district, spent some time with a group of people socially, and I got literally jumped by the people I was with by saying why aren't you doing more with nuclear, why are you letting it sit there, why is France so ahead of us, why is Japan so far ahead of us, and they are kind of looking at me and saying I think you guys are completely negligent. You are not doing anything. You are not moving quickly enough. And you are kind of operating today in the world we had at least 2 years ago or maybe more, which is energy prices are reasonable. Americans can't afford energy as it is. We can't afford not to produce more domestic energy. We can't afford to set ANWAR aside. We can't afford to set off our coastal regions, and we can afford to drag our feet on nuclear.

And they are looking at me and saying what is it about today's reality you haven't figured out because we can't do that any longer. It was one thing to indulge ourselves in taking oil shale and saying we are never going to produce it in the United States when gas prices were $1.75, $2.25, $2.50, maybe $3.00, but, Congressman, they are not $3.00 now. They are not even $4.00 now. They are not even $4.10. That may be the average but across the Nation in many places they are way higher than that and you guys seems to be just kind of walking through past the graveyard paying no attention, so I guess my question for any of you that would like to answer is if the chairman of this subcommittee or the chairman of the full committee were to say to you today, the presidential candidates have embraced nuclear. Nuclear is where we need to go and need to go rapidly. How quickly could you produce a report for us saying here are things you can do to dramatically speed this process up to get fuel storage in a central location where it is away from the population of Chicago and to get it done in X years and how small can that number be because I think 2020 as the earliest, which you posited today, is unrealistic given the change in the political dynamic we have seen in the last 90 days. Are there any of you what would like to respond to that?

I have people at home saying we need an Apollo project on energy, and I don't hear any Apollo project on energy sediment from any of you and maybe you haven't been given an opportunity to say, well, Congressman, here is what we can do. I am giving you that opportunity.

Mr. SPROAT. Congressman, I appreciate the opportunity. I will take a first cut. For those of us who are very strong supporters of nuclear power in this country the reason I took this job is I very strongly believe that this country needs more nuclear energy. It has to be part of the strategic energy mix.

Mr. SHADEGG. So do I.

Mr. SPROAT. In my time in the industry everybody who has been a valid anti-nuclear advocate asks the same question, well, what about the waste? That is the key argument of why we shouldn't build any more nuclear power plants. Well, we are 3 to 4 years

away from answering that question and putting it to bed finally. And I and my team have been working very hard to get this license application together to get a design for the repository that the Nuclear Regulatory Commission will find acceptable. I believe we have done that. And, unfortunately or fortunately, that is how long the process has been set up by the Nuclear Waste Policy Act. And I can't speak for Mr. Weber, and he can't forecast how the NRC process is going to come out, but I do believe we have set this country on a path of potential success of having an approved repository in the next 3 to 4 years, so the issue of what about the waste is no longer a question to be asked of the nuclear industry and nuclear power in this country.

Mr. SHADEGG. Will a slow budget process by this Congress slow that down or keep it at that number, and would it get faster if we did an Apollo project and gave you the money you needed?

Mr. SPROAT. It will not get faster. It cannot get faster than 2020. In other words, that is the fastest it can go. Even if Mr. Weber completes his review in 3 years, we get the funding request per the cash flows at the numbers I sent up here before, 2020 is the earliest, and, quite frankly, that is at risk because of litigation. We know there is going to be additional litigation, and we know there are other issues that the State of Nevada and others will bring up, particularly around water rights and transportation, but it can be done.

Mr. SHADEGG. Anybody else want to comment?

Mr. FERTEL. I think, Congressman, let me just posit that if we do an Apollo project it probably should be focused on supply and we should deal with the waste, but I would not throw all my energy on to waste. Waste is managed very safely right now. I think Ward said it right. Opponents to nuclear energy always say what about the waste. Actually, people in our industry say that sometimes. We are focused on the wrong thing.

Mr. SHADEGG. I think I heard somebody today, I think Mr. Weber said we can store it for 100 years with the technology we have right now.

Mr. FERTEL. And we don't want to do that. We do want it moved, and we need to move forward. As the Ranking Member said, there is a lot of thinking and smart thinking about maybe recycling that we should be looking at, and as Dr. Garrick just mentioned geologic repositories are basically unanimously supported by the scientific community as the ultimate place to go with waste. What we need to do is move forward in a plausible way. I think for the American public, you are going home and speaking to them, they are looking for plausibility and action. The action we need in this country right now in electricity space is supply, improved transmission, improved supply, and that is everything from renewables to nuclear power.

And your discussion on carbon sequestration that Mr. Shimkus mentioned, clearly you can do it technically but we are just not sure you can do it on the scale you need to do it. So as a Nation our challenge in the electricity supply side is to—that is the Apollo project I would honestly think we need to look at, and I think the thought of changing some of the waste legislation to make it more plausible would also be very helpful not just from a licensing of

Yucca but for also looking at alternatives that have been mentioned.

Mr. SHADEGG. Thank you. Thank you, Mr. Chairman.

Mr. BOUCHER. Thank you very much, Mr. Shadegg, and I want to thank each of our witnesses for the time you have spent with us today and your very thoughtful responses to our questions. And to the 3 agencies represented here, let me thank you for your diligence. You are doing the very best that you can with serious constraints from a budgetary perspective. That is particularly true of our first 2 witnesses, and we acknowledge that and appreciate your work on behalf of the public. With that, thanks to each of the witnesses, and this hearing is adjourned.

[Whereupon, at 11:55 a.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

Congress of the United States
Washington, DC 20510

June 5, 2008

Honorable Dale Klein, Chairman
Honorable Gregory Jaczko
Honorable Peter Lyons
Honorable Kristine Svinicki
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Klein and Commissioners:

We write you today to express our deep concern with the Department of Energy's license application for construction of a nuclear waste repository in Nevada. It would be a grave error for the Commission to docket the Department's license application for a complete technical review.

As you know, on June 3, 2008 the DOE filed with the Commission the long-awaited license application to build a repository at Yucca Mountain. Over the next 90 days, Commission staff will review the application to determine whether it is complete or not. If the DOE's application is incomplete, the Commission has the authority to refuse to docket the deficient application and return it to the Department.

We recognize that the Commission and its staff faces what may seem like overwhelming pressure to accept DOE's license application for review. Highly qualified scientists have dedicated their entire careers to making Yucca Mountain the world's first repository for spent nuclear fuel. Up until very recently, the nuclear energy industry has erroneously told Americans that the fate of nuclear energy is tied to the construction of Yucca Mountain. It is indisputable that America faces difficult challenges in finding and implementing a scientifically sound solution for safely managing nuclear waste.

In light of this pressure, the Commission cannot allow the important goal of solving the nuclear waste problem to trump your agency's obligation to protect the health and safety of all Americans, including Nevadans.

The DOE's license application is undoubtedly incomplete. The Department is asking to build a one-of-a-kind nuclear waste facility that must permanently isolate a tremendous amount of radiation from the environment. Despite the gravity of its endeavor, DOE is only providing the Commission with designs that are 35 percent complete. Additionally, the Environmental Protection Agency has not finalized its radiation protection standard for Yucca Mountain, yet DOE has inexplicably expressed confidence that its incomplete repository design can meet the yet-to-be seen standard. Worst of all, DOE's designs rely heavily on the installation of titanium

"drip shields" over the nuclear waste casks in Yucca Mountain sometime over the next 300 years. But the Department will not tell the NRC how it plans to achieve this feat, which may be physically impossible and financially infeasible, 300 years from now.

Despite over 20 years of work on the Yucca Mountain project, uncertainty still plagues the science and engineering of the proposed repository. The Transportation Aging and Disposal (TAD) canister component of the project is an important example of how far away the DOE is from presenting the Commission with a licensable proposal. Last week, a respected engineering firm – Holtec International – that was bidding on DOE's contract to design and license TAD canisters for the project chose to discontinue its efforts to win the TAD contract, stating:

> "Our reason for reticence in this matter is the materiality of the project which, as configured, is a mission impossible. Consider DOE's mandate that the aging module at the Geological Repository Operations Area must be able to remain kinematically stable under the Yucca site's Design Basis Earthquake. At three times the acceleration due-to-gravity, the Yucca quake will turn an array of freestanding casks into a chaotic mêlée of bouncing and rolling juggernauts. (A computer simulation of a freestanding HI-STORM 170 under a 3g earthquake, available from us upon request, will convince the reader of this publication that pigs will fly before the cask will stay put!)"

As you probably expect, it concerns us greatly that the Commission would consider DOE's license application complete when there are: (1) no designs available for the TAD canisters – a critical component of the project; and (2) serious questions about whether DOE's concept will even keep canisters from "bouncing and rolling" while they are at an above ground temporary storage site by the proposed repository.

Finally, we share a deep concern with the timing of the DOE's license application submission and what it means for the NRC. As an independent commission, we would hope that the NRC would refrain from making any large decisions or announcements within 60 days of the presidential election to avoid any appearance of bias. Other independent agencies, such as the Government Accountability Office, refrain from publishing reports or making policy recommendations prior to elections to protect the integrity of the agency. We hope that the NRC would want to do the same.

We have no doubt that the Department of Energy's decision to file its license application on June 3rd was a political decision. There are too many components missing from the license application to suggest that the Department is genuinely prepared to make its case for moving forward on the Yucca Mountain project. We strongly urge the Commission to reject the Department's approach and avoid making a decision that could have the appearance of bias.

Sincerely,

Harry Reid
U.S. Senator

John Ensign
U.S. Senator

Shelley Berkley
U.S. Representative

Jon Porter
U.S. Representative

Dean Heller
U.S. Representative