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RPTR BAKER

EDTR ROSEN

H.R. ____: THE NUCLEAR WASTE POLICY AMENDMENTS ACT OF 2017

WEDNESDAY, APRIL 26, 2017

House of Representatives,

Subcommittee on Environment,

Committee on Energy and Commerce,

Washington, D.C.

The subcommittee met, pursuant to call, at 10:03 a.m., in Room 2123, Rayburn House Office Building, Hon. John Shimkus, [chairman of the subcommittee] presiding.

Present: Representatives Shimkus, McKinley, Barton, Murphy, Blackburn, Harper, Olson, Johnson, Flores, Hudson, Cramer, Walberg, Carter, Walden (ex officio), Tonko, Ruiz, Peters, Green, DeGette, McNerney, Dingell, and Matsui.

Staff Present: Grace Appelbe, Staff Assistant; Ray Baum, Staff Director; Karen Christian, General Counsel; Zachary

Dareshori, Staff Assistant; Wyatt Ellertson, Research Associate, Energy/Environment; Adam Fromm, Director of Outreach and Coalitions; Tom Hassenboehler, Chief Counsel, Energy/Environment; A.T. Johnston, Senior Policy Advisor, Energy; Alex Miller, Video Production Aide and Press Assistant; Chris Sarley, Policy Coordinator, Environment; Dan Schneider, Press Secretary; Peter Spencer, Professional Staff Member, Energy; Evan Viau, Staff Assistant; Hamlin Wade, Special Advisor, External Affairs; Everett Winnick, Director of Information Technology; Andy Zach, Professional Staff Member, Environment; Jeff Carroll, Minority Staff Director; David Cwiertny, Minority Energy/Environment Fellow; Tiffany Guarascio, Minority Deputy Staff Director and Chief Health Advisor; Rick Kessler, Minority Senior Advisor and Staff Director, Energy and Environment; Jessica Martinez, Minority Outreach and Member Services Coordinator; Alexander Ratner, Minority Policy Analyst; Matt Schumacher, Minority Deputy Press Secretary and Digital Director; and Tuley Wright, Minority Energy and Environment Policy Advisor.

Mr. Shimkus. The Subcommittee on Environment will now come to order. Can we have someone close the back door, and members please take your seats. The chair now recognizes himself for 5 minutes for an opening statement.

Good morning, and welcome to our hearing to receive testimony on the discussion draft titled the Nuclear Waste Policy Amendments Act of 2017. For over 50 years, the Federal Government has funded activities to fulfill its obligations for permanent disposal of nuclear waste. In 2008, after decades of scientific research, engineering design, and technical review of the Yucca Mountain site, the Department of Energy achieved a major milestone when it submitted the Yucca Mountain Repository license application to the Nuclear Regulatory Commission for review.

Another milestone was achieved in 2014, when the NRC's independent scientific review of the license application found that the site is expected to meet all regulatory requirements up to 1 million years. This meant that the NRC's technical staff found that the system, DOE, and its National Laboratory's design could protect the public by preventing radiation at the site from surpassing natural background levels for 10,000 years, and from surpassing EPA standards for 1 million years.

The NRC analysis determined the expected annual release is about equal to a cross country airplane flight, and less radiation

than we all receive from working here in the Capitol. Despite the positive safety assessments, the process toward the next legal milestone, adjudication and final NRC license decision had already stopped because the previous administration terminated, and I would say illegally, DOE's Yucca Mountain program.

In response to the situation, the committee heard from sources of expert witnesses over the past 6 years about challenges and opportunities to advance our Nation's nuclear waste management policy. This discussion draft reflects what we learned through those hearings, oversight activities, and related work. However, it is just that, a discussion draft, and today we start the process of taking input from all stakeholders on this draft.

The discussion draft amends certain provisions of the Nuclear Waste Policy Act to provide for a favorable path forward to dispose of spent nuclear fuel for our legacy, to end our legacy defense material. Key provisions in the draft will, number one, address issues identified by the NRC to successfully adjudicate the pending license application for the Yucca Mountain project and permit certain supporting infrastructure support activities to move forward.

Two, remove the existing requirement that Nevada waive its right to disapprove of the process in order to enter an agreement with the Department of Energy to mitigate potential impacts

associated with the repository.

Three, provide the Department of Energy authority to move forward with a temporary fuel storage facility, including the ability to enter into contract with a private entity for that purpose, while assuring that these interim efforts do not compete with resources to complete the permanent repository licensing.

Four, strengthen leadership within the Department of Energy to manage the multigenerational infrastructure project, and clarify that the Office of Civilian Radioactive Waste Management is the sole, statutorily designated office to manage activities under the law.

Five, reform a broken financing system to protect ratepayers and ensure that previous investments for nuclear waste disposal activities will be available when needed.

And six, protect our Nation's priority national security programs by ensuring previous appropriations to dispose of defense nuclear waste are taken into account.

A brief note on Nevada's concerns. On Friday, Governor Sandoval reasserted the State of Nevada's long-established opposition to Yucca in a letter to the committee. I recognize the State has filed over 200 contentions on the Yucca Mountain license application objecting to certain provisions of DOE's proposals. I believe it is important and right that Nevada make its case in

public before the appropriate body, and have its legal and technical challenges adjudicated impartially. To do this, the discussion draft would enable the resumption of the licensing process and provide the opportunity for the State's technical objections to be adjudicated in the NRC process. This would benefit all parties involved, and could, in fact, strengthen the ultimate license for repository. Also, in keeping with our practice of listening to Nevada stakeholders, today on a members panel, we welcome the testimony of two new Nevada representatives, Mr. Kihuen and Ms. Rosen.

The committee also welcomes back Representative Titus, who we heard from last July on this important issue. And I look forward to hearing from my former colleague in the House, Dean Heller, who is now the State's senior Senator. We will also hear from Congressman Joe Wilson of South Carolina, who will speak to a discussion draft provision that reflects language from his bill, H.R. 433, the Sensible Nuclear Waste Disposition Act.

Let me also welcome all the witnesses on the second panel. In particular, Ward Sproat, who will outline critical steps for the program. Mr. Sproat served as a director of the Office of Civilian Radioactive Waste Management during a critical time, and successfully led the Department's efforts to complete and submit the repository license application.

Maryland Public Service Commissioner Tony O'Donnell is here on behalf of the National Association of Regulatory Utility Commissioners to represent the American ratepayers. As we will hear, ratepayers have given DOE over $40 billion to pay for this multigenerational capital infrastructure project, and yet, the Federal Government has not fulfilled its legal obligations. Until Congress addresses perpetual problems with the Nuclear Waste Fund, project management challenges will remain.

Our goal here is to identify the right reforms to ensure we can fulfill the government's obligation to dispose of our Nation's nuclear material. We have the prospectus today to help us do just that.

My time has expired. The chair now recognizes the ranking member of the subcommittee, Mr. Tonko, for 5 minutes.

Mr. Tonko. Thank you, Mr. Chair. And I know this is an issue about which you are passionate, so I welcome the opportunity to hear more views on this discussion draft. I also want to welcome our colleagues, Representatives Titus, certainly Kihuen, and Rosen, and Wilson for joining us this morning. Welcome also and thank you to Senator Heller for joining us from the Senate side.

Mr. Chair, I appreciate you accommodating Mr. Kihuen's request to hold a member panel. Last year, we heard from some of

our Nevadan colleagues, including Ms. Titus, at nuclear waste hearing. Since then, we have welcomed two new members from the Nevadan delegation to the House, and it is important for us to hear their views on this very important issue.

Similarly, since our last hearing, we have had a change in administration. President Trump's initial budget proposal includes a $120 million effort to restart licensing activities for the Yucca Mountain Nuclear Waste Repository, and to initiate a robust interim storage program. Clearly, this is a change in policy from the previous administration which had not requested funding for the Yucca license application for a number of years and began to develop a consent-based approach. It is, indeed, important to get this administration's feedback on this bill, as well as a better sense of its policy on the future of America's nuclear waste.

I also want to highlight a concerning trend. This is the third legislative hearing this year in this subcommittee where we have not had a witness or feedback from the administration. We need to hear from them and should not rush forward without having a better understanding of their position. Today, there are over 72,000 metric tons of waste, which is as a number expected to grow to 139,000 metric tons by 2067. More and more reactors are shutting down. Many of them are going through decommissioning

early.

There is no question our Nation has serious nuclear waste management challenges. As we will hear, some of these are political, but there are also technical and transportation issues.

I understand these are very difficult challenges, but if we continue to ignore the problem, taxpayers from every State will pay the price. In December of 2015, CBO testified before this subcommittee on the Federal Government's liabilities under the Nuclear Waste Policy Act. Courts have determined that DOE has breached contractual obligations under this statute. DOE was scheduled to start removing waste by 1998. After the government missed this deadline, utilities began suing for damages, which have been paid from the Treasury's Judgment Fund. At the time of our previous hearing, those payments totaled $5.3 billion, which has only continued to grow. DOE estimated that if it could begin to accept waste within the next 10 years, liabilities would ultimately total $29 billion.

So, I understand the urgency of this issue, and I understand the chair's genuine desire to help communities dealing with waste and protect taxpayers from any further need to make payments from the Treasury, but I am not sure that the continued strong linkage between Yucca and an interim solution is the best option to limit further taxpayer liability.

The draft before us takes a number of steps to solve our Nation's nuclear waste problems, some of which, I think, are positive, but many provisions will not bring us to a solution any quicker. The bill authorizes interim storage that can be operated by DOE or a private contractor, but it prohibits any interim projects from moving forward until the Nuclear Regulatory Commission makes a final decision on a construction authorization for a permanent repository. We know there are companies interested in pursuing interim storage, but this link may create unnecessary uncertainty to their financing and business model. It would be possible for us to consider the merits of interim storage in a long-term repository on separate but parallel tracks.

Also, I know many members, many members, care about States' rights, and those from the West are especially sensitive about water rights. This bill would declare the construction of a nuclear waste repository a beneficial use of water. I find this troubling. It is not an issue we need to consider at this time.

There are many members on this committee, on both sides of the aisle, that would like to see a fair outcome that acknowledges these challenges, finds workable solutions, and protects the American taxpayers. But ultimately, if you have confidence in the new administration -- and, frankly, I do not, but there are many on the majority side that do -- you should trust them to move the

ball forward on a long-term, nuclear waste repository.

Regardless of the text before us today, a permanent solution will take many years and be mired by litigation. In the meantime, we may want to examine the steps Congress can take to start resolving the issue now. I am not wholly convinced that this draft, as currently written, would accomplish that. With that, I thank you, Mr. Chair, and I look forward to this morning's discussion, again, welcoming our colleagues. And with that I yield back.

Mr. Shimkus. The gentleman yields back his time. The chair now recognizes the chairman of the full committee, Mr. Walden, for 5 minutes.

The Chairman. I thank the gentleman not only for holding this hearing, but also for your diligent work on this matter for many, many years. I am glad that you are moving forward on this. It is an important task, and I want to welcome our colleagues from Nevada and South Carolina for being here as well. We look forward to hearing your testimony. I know it is important to have a member panel, and so we welcome what you have to say.

Just this year, an Oregon-based nuclear technology company, NuScale, submitted a new design for a small modular reactor to the Nuclear Regulatory Commission for review and approval. It is a first-of-a-kind design that could operate more efficiently than

existing plans. It would provide future optionality in design and construction for utilities to meet energy demand. However, while we look forward to advanced nuclear technology development, it is long overdue that we solve this waste issue. Again, when it comes to the Nuclear Waste Policy Act, as you know, the government established a fee tied to the generation of nuclear energy in order to finance the cost of multigenerational disposal programs. Along with 33 other States, Oregon ratepayers fulfilled their financial obligations under the law, paid the Department of Energy $160 million to dispose of that commercial spent fuel.

The Trojan Nuclear Power Plant, located in northwest Oregon, stopped producing electricity in 1993 with the expectation that DOE would then begin to remove the spent fuel in 1998, as required by Federal law. However, that has never happened. And since the plant's decommissioning activities were completed in 2007, only spent nuclear fuel remains stranded at that site. That hampers any redevelopment efforts surrounding that site. That story is repeated across the Nation in States and communities awaiting DOE to fulfill its obligations and dispose of spent fuel.

Mr. Chairman, I want to commend you and Secretary Perry for taking the time at different times to go out to Yucca and review that. I commend you for looking at interim storage as well, and I look forward to hearing from our witnesses.

I would now like to yield a minute to my colleague from Tennessee, Ms. Blackburn, and then I will yield to Mr. Barton the remaining time after that.

Mrs. Blackburn. Thank you, Mr. Chairman. And I am appreciative that each of you are here today before us. This is an issue that we have looked at previously, and will return to. Nuclear power does play an important component part in TVA's overall electric generation capability, and because of that, we in Tennessee are, indeed, concerned about this issue. And I know that more than 30 years ago, Congress has started the process of grappling with this issue. And while you can do on-site storage, and that is safe, there needs to be permanent storage. So for those of us that do rely on electric power generation coming from nuclear power, we appreciate the discussion and the ability to look at how we move forward with safe, reliable nuclear power in this country. I yield back.

The Chairman. I yield the balance of my time to the former chairman of the full committee, Mr. Barton.

Mr. Barton. Thank you, Mr. Chairman. Let's see a show of hands in the audience of people who have been born since 1982. Raise your hand if you have been born since 1982. Now this is a pretty gray-beard audience, Mr. Chairman. But in 1982, I was a White House fellow in the Department of Energy, and I played a

very minor, minor role in the drafting of what we now call the Nuclear Waste Policy Act of 1982. It was my job as a White House fellow to work with the technical staff in the Department of Energy, and then explain to the Secretary of Energy, the late Jim Edwards of South Carolina, what we were trying to do.

So, I had to read the language, understand from the technical staff, and then try to explain to him what we were doing. That was 35 years ago. And at that point in time, we thought by now we would, somewhere, be storing high-level nuclear waste permanently. That obviously has not happened for a lot of reasons. The amendments that you are discussing today, Mr. Chairman, the 2017 -- my phone is ringing.

The Chairman. They didn't have those in 1982, I would point out.

Mr. Barton. They sure didn't. Didn't have the internet. Al Gore hasn't invented it yet. In any event, the legislation that we are going to discuss today, Mr. Chairman, finally cuts the Gordian Knot, and I want to commend you and the full committee chairman and everybody that has worked on this. For the first time, it will allow interim to have a chance to be certified as we look at the permanent repository.

Mr. Shimkus. The gentleman's time has expired.

Mr. Barton. Anyway, Mr. Chairman, I will put my statement in

the record. I apologize for the phone call. This is an excellent piece of legislation. I totally support it, and we are finally going to solve it under the leadership of this committee and this Congress.

[The prepared statement of Mr. Barton follows:]

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Mr. Shimkus. The chairman thanks the gentleman. The chair now recognizes the gentlelady from California, Ms. Matsui, for 5 minutes.

Ms. Matsui. Thank you very much, Mr. Chairman. I want to welcome our colleagues here today on this panel and also the next panel also. This is such an important issue, and I think for all of us here, it really does need a solution, so we are hoping that we can move toward that. In my local public utility, the Sacramento Municipal Utility District, maintains the decommissioned Rancho Seco Nuclear Power Plant. So I have been interested in spent nuclear fuel management issues for many, many years now.

I support a comprehensive long-term strategy for nuclear waste disposal that includes an important role for consolidated interim storage. Regardless of the status of permanent repository, an interim storage facility is a necessary step in the right direction for the management of our Nation's nuclear waste. We have private consolidated interim storage applicants that want to take spent fuel. I believe we can move forward with the interim storage process, while at the same time, addressing the issues surrounding a repository.

Regardless of the path we choose, it is important that spent fuel from decommissioned plants receive first priority under a

waste management program. I would like, and all of us here would like to move forward on this, and I believe with the discussion that we have today, and we have been having, we are going to be moving forward. But I believe we also should understand that we have a lot of decommissioned nuclear power plants waiting right now, and we would like to move ahead with some interim-type storage so that some of these sites can actually be used for other purposes.

So, thank you very much, Mr. Chairman, for having this hearing here today. And I would like to ask my colleagues on my side if there is anyone who would like the rest of the time? If not, I yield back. Thank you.

Mr. Shimkus. The gentlelady yields back her time. We now conclude with members' opening statements. The chair would like to remind members that pursuant to committee rules, all members' opening statements will be made part of the record.

Now we want to thank our witnesses and first panel for joining us today. I will recognize you each when it is time for you to speak, and your full statement can be submitted for the record. Now it is my pleasure to introduce my friend, sometime combatant, the senior Senator from the State of Nevada, Dean Heller. Sir, you are recognized for 5 minutes.

STATEMENT OF THE HON. DEAN HELLER, A UNITED STATES SENATOR FROM THE STATE OF NEVADA

Senator Heller. Mr. Chairman, thank you. And to the ranking member, thank you also.

Mr. Shimkus. Are you close to the mic?

Senator Heller. Yeah, it is on. Let me just get a little bit closer. I want to thank the committee also and for the diverse testimony that we heard already here, and I am very appreciative of the opportunity to be here with most of the colleagues of our delegation. I think it sends a pretty strong message.

Having said that, Mr. Chairman, since 1987, Yucca Mountain's Nuclear Waste Repository has been a thorn in Nevada's side. Due to political antics, not science, Nevada quickly moved to the Federal Government's number one targeted location to permanently store all of the Nation's nuclear waste. Our State has been fighting this misguided proposal ever since, and we are not finished.

Although I recognize the role that nuclear power plays in our Nation's long-term energy strategy, and the need to properly store expired nuclear fuel, I remain strongly opposed to any effort to

reinstate Yucca Mountain. This ill-conceived project would not only cause significant harm to the well-being of my home State, it also poses a national security risk that is too great to ignore. So, Mr. Chairman, my position remains the same. It is that Yucca Mountain is dead.

It is time to move past failed proposals of the past and look for solutions to the future. Mr. Chairman, while we both disagree on the issue of Yucca Mountain, we are in agreement that it is in the best interest of our Nation that a program to dispose of and to store spent nuclear fuel and high-level radioactive waste be implemented as soon as possible.

I appreciate your commitment to ensure that progress is made on this issue. However, I do not believe the bill that is before the committee today is the solution. Rather, I believe it would only lead to more litigation on this issue, wasting more taxpayer dollars while usurping State's air and water permitting authority. Governor Sandoval has made it clear that the State of Nevada will contest over 200 elements of any application process.

Rather than attempting to force this project on the people of Nevada, a State that currently does not have any nuclear power plants of its own, taxpayer dollars would be better spent identifying viable alternatives for the long-term storage of nuclear waste in areas that are willing to house it.

Before I discuss the issue of consent-based storage, I would like to first address the bill that is before us today, and I have a test that I usually perform when evaluating legislation. It is called "More, Higher, Less." Does the bill more competition, higher quality at less cost? And let me address each of these categories with respect to the bill that is before us today.

Does this bill provide more competition? Instead of allowing the consent-based siting, this bill would make Yucca Mountain the only repository. It also eliminates the current requirement for progress on a second repository. This legislation does, however, allow for more Federal Government control over State permitting authority, usurping the State of Nevada. Mr. Chairman, the preemption of the State water laws and the States' authority to issue air permits is simply jarring. Let me repeat that. The preemption of State water laws and States' authority to issue air permits, in my opinion, is absolutely jarring.

Next, does this bill provide higher quality? Not to Nevadans. By eliminating the current capacity elimination of 70,000 metric tons of heavy metal, this legislation would allow for the unlimited disposal of spent nuclear fuel and high-level radioactive waste. Furthermore, by allowing the EPA administrator to change the repository radiation protection standards before final licensing by the Nuclear Regulatory Commission, you run the

risk of eroding standards that were put in place to protect public health.

And finally, by allowing thousands of nuclear waste shipments to Yucca Mountain, you create a higher national security risk, ignoring recommendations made by the National Academy of Sciences and the Blue Ribbon Commission.

Will this bill provide less cost? The Federal Government has already spent decades, wasted billions of dollars, to design and permit Yucca Mountain without any, without any rational hope that Nevada will consent to the project. And Nevada never will. The State of Nevada will contest any license application. This means years, years of litigation, while progress remains stalled on how to dispose of spent nuclear waste. But it doesn't have to be that way.

I come to the table with a bipartisan solution supported by members of my delegation that join us today. I want to thank Congresswoman Titus, Congressman Kihuen, and Congresswoman Rosen for partnering with me to introduce the Nuclear Waste Informed Consent Act. Our legislation would allow for the construction of a nuclear waste repository only if the Secretary of Energy has a secure written consent from the governor of the host State, affected units of local government, and affected Indian Tribes. This is consistent with the consent-based siting initiative to

site waste storage and disposal facilities initiated by the Department of Energy in the late 2015.

Identifying communities that are willing to host for long-term repositories, rather than forcing it upon States, is the only viable solution to our Nation's nuclear waste problems. I encourage the subcommittee to focus its efforts on that worthwhile initiative. Failing to do so would just squander more time and resources that would be better spent pursuing viable solutions to this important public policy challenge.

Mr. Chairman and Ranking Member Tonko, thank you again for the opportunity to appear before you, and I stand ready to partner with you, with you, to find a viable solution to this problem once and for all.

[The prepared statement of Senator Heller follows:]

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Mr. Shimkus. We thank the gentleman. Now we will turn to -- now we are always having this debate. We called your staff to make sure we had the pronunciation right. We were told Kihuen. Is that correct?

Mr. Kihuen. That is correct.

Mr. Shimkus. Okay. Very good. This is the first time we have had a chance to meet, so I am glad to welcome you, a Member of Congress representing the 4th District of Nevada, and you are recognized for 5 minutes.

STATEMENT OF THE HON. RUBEN J. KIHUEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEVADA

Mr. Kihuen. Thank you, Mr. Chairman. Thank you, Ranking Member Tonko and subcommittee members, for this opportunity to testify before today's subcommittee hearing, and I am grateful that you could accommodate my request despite the short notice, so thank you so much, Mr. Chairman.

I was disappointed to learn that the committee had scheduled a hearing on the Nuclear Waste Policy Act of 2017, especially considering that there was no representation from our State and this committee. As I mentioned in my letter, Yucca Mountain is in my district, and my constituents and all Nevadans have the right

to have their voices heard.

They deserve to be part of the conversation, especially when it concerns their safety and their security. To Nevadans, it seems like the other people are just trying to pawn off their problems by dumping nuclear waste in our beloved State. For many Nevadans, this just feels like deja vu, and is reminiscent of the 1987 law often correctly referred to as the Screw Nevada bill, that halted the study of possible repository sites elsewhere in the country over the vociferous objection of the State. Now, as in 1987, the idea that Nevada should be of use as nothing more than a dumping ground for the rest of the country's nuclear waste is opposed by most Nevadans, an overwhelming majority of most Nevadans. Democrat and Republican alike, Nevadans do not want this project to move forward in their State.

Yucca Mountain is located less than 100 miles northwest of Las Vegas, a metropolitan area of more than 2 million people, more than three times the entire population of Nevada when this bad idea was first passed in 1987.

The proposed nuclear waste repository site at Yucca Mountain would pose a real threat to the economy of southern Nevada. Our economy relies on tourism. With nearly 43 million people visiting Las Vegas in 2016, any accident involving nuclear waste in the area would lead to a massive, massive loss in visitors, which, in

turn, would have severe ripple effects through the entire Nevada economy.

Many of you may not know this, but the area around Yucca Mountain is seismically active, and an aquifer runs beneath the proposed repository site. Additionally, placing a large amount of nuclear waste in an unsuitable site, a site like Yucca Mountain, could lead to numerous potential health issues. Substandard care or the mere passage of time could lead to leaking and leaching of nuclear material into the aquifer.

Rather than waste millions more on unnecessary nuclear waste, we should look for ways to invest these funds in Nevada more strategically. Plenty of Nevadans are still out of work. Imagine what this money could do to help grow our economy. I have toured Nevada's 4th Congressional District on multiple occasions, and every time I visit, I see firsthand the need to invest in infrastructure projects that could create jobs. Dumping money into this project is a poor use of Federal funds.

Nevadans are strongly opposed to the construction of this project. As a State with no nuclear energy facilities, it is exceedingly unfair that Nevada is asked to serve as a dumping ground for the rest of the country's waste at the great risk of our citizens.

I ask each of you in the committee to consider this: If this

project was proposed in your district, near your family and threatened your constituents' lives and jobs, would you support it? If the answer is yes, then let's find a place in your district. If the answer is no, as it surely is, you cannot, in good conscience, vote to send a country's nuclear waste to my district. I urge the committee to vote no and keep this project dead and buried as it should be. Thank you, Mr. Chairman.

[The prepared statement of Mr. Kihuen follows:]

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Mr. Shimkus. The gentleman yields back his time. The chair now recognizes Congresswoman Titus, the first one who corrected me on how to pronounce Nevada versus Nevada. And I always get it right after that. So with that, you are recognized for 5 minutes.

STATEMENT OF THE HON. DINA TITUS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEVADA

Ms. Titus. Well, thank you very much, Mr. Chairman, I Ranking Member Tonko and members of the committee. I unfortunately was born in 1982, and I think I have been working on this project ever since. As you well know, Yucca Mountain has been an issue of major importance for three decades dating back to 1982 when President Reagan first signed the Nuclear Waste Policy Act. The Screw Nevada Amendments of 1987 made the matter even more pressing by singling out Yucca Mountain as the primary focus for a permanent repository. In the years that have followed, I, along with my colleagues, both Democrat and Republican here in Congress, along with the Governor's Office, the State legislature, Tribal and local government leaders, have together, with business leaders, been leading the fight against Yucca Mountain. We have been united and with just rare exceptions, in vehement opposition to this proposal.

And it is not just Nevada that is going to be adversely affected. Any waste coming to the site will have to travel through virtually every congressional district in the country, coming very close to homes, schools, churches, farms, and factories.

Just yesterday, I received a letter signed by over 80 organizations from across the country in opposition to the repository at Yucca Mountain, along with a letter from the American Gaming Association, expressing opposition. And with your permission, Mr. Chairman, I ask that these letters be entered into the record.

Mr. Shimkus. Without objection, so ordered.

[The information follows:]

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Ms. Titus. Thank you. Over the years, as you know, billions of dollars have been wasted on this boondoggle, and still, we are no closer to a solution. I agree with my colleagues that this is bad for Nevada in general. But let's look at some of the specifics of the legislation before us. It wasn't until the Obama administration assembled the Blue Ribbon Commission on America's nuclear future that included some of the most respected experts in the field, that we released a list of recommendations that could be used to guide us in this area. One such recommendation, which goes to the heart of the matter, is adopting a consent-based process by which repositories are sited. That is why I recently reintroduced H.R. 456, the Nuclear Waste consent Act, along with my colleague in the Senate, Senator Heller, and here in the House. This legislation codifies the Blue Ribbon recommendation that siting of a repository be done not just in consultation with host States, Tribes, local governments, but with their approval.

I was surprised to see, Mr. Chairman, that you adopted the framework of this legislation in Section 143 of the draft before us with regards to interim sites. They are now called monitored retrievable storage. If we are to be successful in addressing the concerns of communities like yours where nuclear power plants are located, we should also have this same consideration going forward with permanent sites. The draft bill should afford the same

consent-based provision that you are offering interim sites to permanent storage facility.

Other ways that this bill goes in the opposite direction from recommendations, the bill removes language from the original law that requires progress, progress on a second repository, thereby dictating that Nevada will be the sole site for dumping of the waste. If that is not bad enough, it removes the cap of 70,000 metric tons of nuclear waste, making way for us to take as much as you can possibly find or generate, an unlimited source. This is a significant change, which calls into question the entirety of the licensing and safety evaluation for the project. As NRC references in a number of different provisions, including the license application, this repository does not take into account unlimited increases in dangerous waste, as is being proposed in this bill draft.

And finally, as you have heard from the Senator, this is very important, especially to those of us from the West, you need to be concerned about Section 202. That is the section that usurps the State's right to control its own water. Now, I know many of you were opposed to the Waters of the West rule that came under the Obama administration, railing against it as Federal overreach and outrageous power grab, and yet, that is exactly what this bill does, takes that power to control water away from the States.

These are just some of the serious issues that we have been addressing for decades in Nevada. I ask that you give them consideration yourselves as you attempt to move forward to solve this solution. Nevada has done its share. We have still got the scars from the mushroom clouds and the atomic tests in the 1950s as we developed nuclear weapons. We didn't produce this waste. We don't want it. We don't deserve it. We don't have any nuclear plants, and we will continue to fight it. So keep it where it is, and let's look for some reasonable solution. And I thank you very much.

[The prepared statement of Ms. Titus follows:]

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Mr. Shimkus. I thank my colleague. The chair now recognizes another new Member of Congress, the Honorable Jacky Rosen from the 3rd District. Ma'am, you are recognized for 5 minutes.

STATEMENT OF THE HON. JACKY ROSEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEVADA

Ms. Rosen. Thank you. Thank you, Chairman Shimkus, Ranking Member Tonko, members of the subcommittee. I want to thank you for the opportunity to testify, and I am here to make one thing clear, that Nevadans wholeheartedly oppose become being the Nation's nuclear dumping ground. In 1987, Congress amended the Nuclear Waste Policy Act and targeted Yucca Mountain, located less than 100 miles northwest of Las Vegas as the sole site for our Nation's geological repository. For over 30 years, the State of Nevada and local communities, including the constituents that I represent, have rejected this project on safety, public health, and environmental grounds. In fact, the State has filed 218 contentions against the DOE's license application, challenging the adequacy of DOE's environmental impact assessments. Numerous scientific studies have deemed Yucca Mountain unsafe, based on the fact that the site is seismically active and sits above an aquifer. The repository may not be able to prevent radioactive

contamination for groundwater for over 1 million years. That is a Federal safety requirement.

Yucca Mountain would require transporting over 70,000 metric tons of radioactive waste, many of those routes right through my district, through the heart of Las Vegas, a city that attracts 43 million visitors annually, and generates $59 billion to our economy, according to the Las Vegas Convention and Visitors Authority.

Severe transportation accidents, they threaten the health and safety of tourists and individuals who live along these proposed routes and would cause hundreds of millions of dollars of damage in cleanup costs and related economic costs.

We are talking about shipping a total of nearly 9,500 rail casks, which is equivalent to 2,800 trains, or 2,650 truck casks over 50 years, which is bad enough. But eliminating the second repository, your bill, increases those numbers to 6,700 trains, and over 5,000 trucks. This translates to roughly one to three trains, or one to two truck shipments through Nevada per week every week for 50 years, from 76 shipping sites across the country. All those trucks would use the I-15 corridor, known to be one of the most dangerous highway systems in the country, according to the Nevada AAA. Do you honestly believe that shipping over 5,000 truck casks of high-level nuclear waste over a

span of 50 years won't result in at least one radiological accident?

And in the event of a radiological release, it is said to be nearly impossible to determine the range of exposure, let alone the long-term health effects for those facing exposure. Cancer, genetic defects, asthma, they have all been related to radiation. The victims of such negligent policy won't be your constituents, Mr. Chairman, but rather the ones who live in our districts. These are our friends, our neighbors, our children.

And yet, while any legislation must include and implement the National Academy of Science's safety and security recommendations, such as shipping older fuel first and full-scale testing of the casks, this bill fails, it absolutely fails to fulfill such requirements.

Any plan addressing nuclear waste storage must be based on scientific analysis, as well as trust and agreement among affected parties. In 2012, the Blue Ribbon Commission on America's Nuclear Future issued its final report on nuclear waste storage, recommending a consent-based process for choosing a site. I am proud to be an original cosponsor along with my colleagues, of the Nuclear Waste Informed Consent Act, a bill supported by the entire Southern Nevada delegation that would prohibit the dumping of nuclear waste in a State without its consent.

I request that the text of this bill and two other documents I have to be entered into the official record of this hearing.

Mr. Shimkus. Without objection, so ordered.

[The information follows:]

******** COMMITTEE INSERT ********

Ms. Rosen. Your Nuclear Waste Policy Amendments Act ignores the environmental, safety, and security concerns of Nevadans who would be forced to store nuclear waste that they had no role in creating. I urge the subcommittee to stop wasting billions in taxpayer dollars by resurrecting a project that has been dead for over 30 years, and instead identify viable alternatives for long-term repository in areas that are proven safe, and whose communities consent to storage. Thank you.

[The prepared statement of Ms. Rosen follows:]

******** INSERT 1-2 ********

Mr. Shimkus. The gentlelady yields back her time. The chair recognizes my colleague from South Carolina, Joe Wilson, for 5 minutes.

STATEMENT OF THE HON. JOE WILSON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF SOUTH CAROLINA

Mr. Wilson. Chairman John Shimkus, Ranking Member Paul Tonko, thank you for having me here today. I am grateful to have the opportunity to testify before the Energy and Commerce Subcommittee on Environment. I was grateful to serve as the former Deputy General Counsel to the Department of Energy during the Reagan administration, serving with Secretary Jim Edwards. I know the Department has very competent personnel, and we are fortunate with the new leadership of Secretary Rick Perry.

In January, I introduced the Sensible Nuclear Waste Disposition Act, and I appreciate that it has been included in the Nuclear Waste Policy Amendments Act of 2017. The Sensible Nuclear Waste Disposition Act is a commonsense legislation that simply requires that the Nuclear Regulatory Commission make a licensing decision one way or another about Yucca Mountain before the Department of Energy can consider other options for long-term disposal. I appreciate the concerns of Nevada. I am also hopeful

that we recognize that there should be a national perspective when it comes to managing and storing nuclear waste.

Today there are currently 121 communities across 39 States that are grappling with the limitations of storing nuclear waste while our country lacks a permanent geological repository. Communities in my home State of South Carolina, adjacent to our neighbors of Georgia, also in the chairman's State of Illinois, the ranking member's State of New York, and the home State of a majority of the members of this committee, all store nuclear material. Each of the 121 communities has been forced to store nuclear waste while they wait for the Federal Government to honor its promise by providing permanent storage at Yucca Mountain. Ms. Matsui has made an excellent, good new point. These sites can be redeveloped for better use.

While the nuclear material is currently being safely stored across the country, we are in desperate need of a long-term viable solution. Having a single permanent repository for high-level nuclear waste is critical for our national security. Right now, in the absence of a permanent repository, nuclear material is stored all over the United States, making it difficult and costly to secure. Having a single location, 1,000 feet underground, is far more effective and secure for the environment with one location instead of 121 sites across the Nation.

Additionally, competing the licensing process for Yucca Mountain is fiscally responsible. The Federal Government has dedicated enormous resources to completing the nuclear storage facility at Yucca Mountain. American taxpayers have invested over $3.7 billion into Yucca Mountain. Additionally, energy utility ratepayers from across the country have contributed over $30 billion to the Nuclear Waste Fund that can only be used toward the construction and operation of Yucca Mountain, with citizens from South Carolina, Illinois, New York, having put each State over $1 billion into the account. Starting over with another project would cost billions for taxpayers and ratepayers alike, and would take decades to complete, leaving 121 sites across the country as de facto dumping grounds for nuclear waste.

We have a duty to work toward a permanent repository for nuclear waste. The Nuclear Waste Policy Amendments Act does an excellent job of strengthening the Nuclear Waste Policy Act and advancing our shared goals of protecting National security and promoting our national environment cleanup mission.

Thank you for the opportunity to testify before you today. Thank you for your time and attention, and the balance of my testimony is being submitted for the record.

[The prepared statement of Mr. Wilson follows:]

******** COMMITTEE INSERT ********

Mr. Shimkus. The gentleman yields back his time. So I want to thank you all for your testimony. As you may know, it is committee practice not to ask the Members questions following their statements. So let me thank you again for taking the time to present your important perspectives today, and we will sit the second panel. Thank you very much.

We would ask our new guests to find a seat so we can get the door closed and start with our second panel as soon as possible.

We want to thank the second panel for appearing with us today. I will introduce you one at a time when your time to speak comes up. Your full statement is submitted for the record. You will have 5 minutes. We will be very lenient on that as long as you don't go 2 or 3 minutes over. And with that, I would like to first recognize the Honorable Ward Sproat. I mentioned him in my opening statement. Former Director of the Office of Civilian Radioactive Waste Management of the Department of Energy. I always beat on my staff not to do acronyms, OCRWM, and make sure we know what that really means. So we have worked together numerous times. It is great to have you. You are recognized for 5 minutes.

Mr. Sproat. Good morning, Chairman Shimkus, Ranking Member Tonko.

Mr. Shimkus. Let's try to pull the mic closer. Make sure the button is on.

STATEMENTS OF WARD SPROAT, FORMER DIRECTOR, OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT, DEPARTMENT OF ENERGY; ANTHONY O'DONNELL, CHAIRMAN OF NUCLEAR ISSUES SUBCOMMITTEE, NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS; DR. EDWIN LYMAN, SENIOR SCIENTIST, GLOBAL SECURITY PROGRAM, UNION OF CONCERNED SCIENTISTS; STEVEN P. NESBIT, CHAIRMAN OF BACKEND WORKING GROUP, NUCLEAR INFRASTRUCTURE COUNCIL; AND MARK MCMANUS, GENERAL PRESIDENT, UNITED ASSOCIATION

STATEMENT OF WARD SPROAT

Mr. Sproat. Thank you very much for your invitation to address the committee this morning about the proposed legislation. I would like to make it clear to the committee that the opinions I am going to express this morning are strictly my own. In no way should they construed as representing my current employer, and are based on my experience in running the Office of Civilian Radioactive Waste Management at the Department of Energy from 2006 through the beginning of 2009.

I appeared before this committee back in July of 2006, 11

years ago, and at that point in time, I made a commitment to the committee to submit a quality license application for Yucca Mountain by June 30 of 2008. I actually delivered that to the NRC on June 3 of 2008, after the work of several thousand very qualified, very smart people, both in the Department of Energy and the National Labs who had worked for a very long period of time to put that license application together.

The subsequent review by the NRC staff took almost 7 years, and culminated with the issuance of the last of their five volumes of their safety evaluation report, or their SER, in January of 2015. Their review, the NRC staff's review, concluded that the design met all the technical requirements, including the million year post-closure radiation release requirement that was set by the EPA.

However, in their evaluation, there were two issues left that they said need to be addressed before the staff could recommend to the full commission that a construction license for Yucca Mountain be granted. One was permanent land withdrawal, because the Department could not show that at some time in the future, public access to the site would be available. And the second was water. And in terms of the State of Nevada, water engineers not permitting the Department permits to make water withdrawals at the site.

So the next step in the NRC licensing process is to litigate the well over 200 contentions that have been filed by the interveners in front of the Atomic Safety and Licensing Board. Both the NRC and the Department of Energy must be adequately funded to litigate those contentions in front of the ASLB, and we would expect that period of time to be at least 2, probably 3 to 4 years for that litigation to occur before all the contentions can be adjudicated, appealed, and a final decision made by the Nuclear Regulatory Commission on granting a construction permit or not on the Yucca Mountain license application.

The other key thing that is very, very important on moving forward is the Department of Energy, as the applicant, must be a willing applicant to vigorously defend the license application, and I think it would be pretty safe to say that over the past 8 years, the past administration was not willing to do that.

So I would like to move on and just quickly address a couple of things about the issues that need to be addressed with modifying and amending the Nuclear Waste Policy Act. First of all, one of the first key issues is access to the Nuclear Waste Fund, and this issue arose a number of years back when the receipts being collected from the utilities around the country were classified as mandatory receipts, but the appropriations for the Department to build the repository are classified as

discretionary. As a result of that mismatch between mandatory receipts and discretionary appropriations, any appropriations for the repository is scored as negative against the budget. So that needs to be fixed.

The issue of permanent land withdrawal, we have already talked about a little bit. The issue of water permits at the site, we have talked a little bit about. I just want to give you one quick vignette. When we were trying to drill a small well at the site to understand the seismic aspects of the site, we needed water to cool the drill bits, and the State of Nevada withheld those permits. So that is one of the issues of why the issue of water rights is in this legislation.

The other issue that needs to be addressed is transportation. Regardless of whether we are talking about an interim storage site, a permanent repository, every site is going to need to address the issue of transportation. When you have high-level waste at 121 sites in 39 different States, it doesn't matter whether you have local consent or not if you are not able to get the material there, which means that getting consent across those various political boundaries is going to be a challenge without some kind of clear Federal direction on their ability to direct that transportation to occur.

So in conclusion, it has been 35 years since the Nuclear

Waste Policy Act has been passed, and right now, we are probably within 3 to 4 years of finally getting a decision on whether or not the repository at Yucca Mountain is licensable or not. Providing the necessary funding to the Department and to the NRC to finish the hearings and finish the licensing process, I think is really the right next step. To me, starting over at this stage of the game, being this close to getting a final NRC decision, makes no sense at all given the past history of this project and how long it has taken.

And I guess finally, the last point I would like to make, is regardless of the outcome of the NRC licensing process, new legislation is going to be needed in order to address the problems that I have outlined in order to get the spent nuclear fuel and high-level nuclear waste from those 121 sites in 39 States to a central repository at some point in time in the future.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Sproat follows:]

******** COMMITTEE INSERT ********

Mr. Shimkus. We thank you for your service to our country, and it is great seeing you again. The chair now recognizes Mr. Anthony O'Donnell, chairman of the Nuclear Issues Subcommittee at the National Association of Regulatory Utility Commissioners, which is NARUC. You are recognized for 5 minutes.

STATEMENT OF ANTHONY O'DONNELL

Mr. O'Donnell. Thank you. Thank you, Mr. Chairman. Good morning and Ranking Member Tonko, both, and members of the Subcommittee on the Environment. Thank you for the opportunity to testify today on the Nuclear Waste Policy Amendments Act of 2017. My name it Tony O'Donnell. I am a commissioner on the Maryland Public Service Commission, and I also serve as chairman of National Association of Regulatory Utility Commissioners, as you heard from the chairman, NARUC, Subcommittee on Nuclear Issues and Waste Disposal.

As you know very well, this matter of the Nation's high-level nuclear waste policy is a high-priority issue for NARUC and its members. The electricity consumers in the United States, often referred to as ratepayers in industry jargon, have paid more than $40 billion in direct payments and accrued interest into the Nuclear Waste Fund over the last 30 years. To date, we have

virtually nothing, repeat, nothing, to show for this substantial tax on nuclear-generated electricity. In fact, the collection of the fee to pay for the Federal nuclear waste program is the only component of the program that has ever worked as intended.

I am here today on behalf of NARUC to applaud the subcommittee for its leadership, and support your efforts to get this program moving once again. In our view, the discussion draft that is the subject of today's hearing is a very positive and welcome step forward to put the program on solid footing, and to move the program to a point where decisions will be based on the merits of the work performed and not based on the politics of the moment.

I would like to very briefly address what we believe are some of the highlights of the draft legislation and point out a couple areas of concern.

We are very pleased that the draft aggressively addresses the threshold issue of licensing. The draft requires a final NRC decision approving or disapproving Yucca Mountain license application before other major provisions can be implemented. We commend the committee for making progress contingent on some decision on a permanent repository license.

We are similarly pleased that the discussion draft addresses how the current funds in the Nuclear Waste Fund will be disbursed.

The draft specifies that certain percentages of the amounts in the waste fund on the date of the enactment must be available to the Secretary on certain trigger dates. The specification that those funds be made available, quote, "without further appropriations," end quote, is an excellent way to assure both confidence and progress in the program.

Please note that NARUC members will need to see the actual percentages prior to providing unqualified support for that section, 503. The discussion draft's revised mechanism assures any fees collected going forward are immediately available to the Secretary for the waste-related activities without additional appropriations. If the NWF fee is restarted, this provision is absolutely crucial.

With regard to restarting the fee collection, we believe that expressly linking any restart of the NWF fee to a final NRC decision on licensing repository is, again, the right approach. The legislation would benefit from a specification that is part of the annual assessment of the need for, or level of, any fee. The Secretary included an analysis on whether the annual interest on the corpus is sufficient to cover the projected outlays for the repository and any other required disbursements.

The draft contains a provision which NARUC supports, that a cost benefit analysis is a prerequisite for any non-federally

licensed storage facility. In Section 602 of the draft, the Director of the Office of Civilian Radioactive Waste Management is given a 5-year term. The subcommittee may wish to consider increasing the term length to provide greater stability in the program across successive administrations.

Finally, one area that has raised definite concerns is Section 301's discussion of the requirement for DOE to take title to waste. The discussion draft should clarify and/or define what constitutes, quote, "delivery and acceptance," end quote. The definition must assure that DOE cannot simply take title of waste in situ, that is where it is currently being stored, and claim they have met their contractual obligations. Additionally, the definition must make clear that any transfer of title to DOE includes removing the waste to a different NRC licensed storage facility.

Mr. Chairman, this concludes my testimony today, and I will be pleased to take any questions that the members may have.

[The prepared statement of Mr. O'Donnell follows:]

******** INSERT 1-3 ********

RPTR GENEUS

EDTR ZAMORA

[11:02 a.m.]

Mr. Shimkus. The gentleman yields back the time. Thank you very much.

Now, I would like to turn to Dr. Edwin Lyman, senior scientist of the Global Security Program at the Union of Concerned Scientists.

Sir, you are recognized for 5 minutes.

STATEMENT OF EDWIN LYMAN

Mr. Lyman. Yes. Good morning. And on behalf of the Union of Concerned Scientists, I would like to thank Chairman Shimkus and Ranking Member Tonko and the other distinguished members of the subcommittee for the opportunity to provide our views on this very important subject.

UCS has more than 500,000 supporters united by a central concern that we need sound, scientific analysis to create a healthy, safe, and sustainable future. In addition, we are neither pro- nor anti-nuclear power, but we have served as a nuclear power safety and security watchdog for nearly 50 years. And in that respect, we believe it is critically important that spent fuel be managed safely and protected from a terrorist attack until it can be buried irretrievably in a geologic repository. But in addition, the sustainable nuclear waste strategy must also have broad public acceptance.

So to this end, we appreciate the interest of the authors of the discussion draft in moving the ball forward in nuclear waste disposal, but we do disagree with the draft bill's limited scope and its Yucca Mountain-centric approach. We need a comprehensive strategy that addresses all aspects of the problem, including

security and safety of transportation and storage both at and away from the actual sites. And we do need to find -- at least try to find an approach for a repository siting that could facilitate local and regional cooperation rather than heighten already entrenched opposition. And I think we have already seen the discussion draft is going the wrong direction by attempting to resolve disputes by overriding State authority instead of promoting dialogue and cooperation. And the State of Nevada, predictably and justifiably, is crying foul.

We strongly support the development of geological repositories for direct disposal of spent fuel. We do not have the geological expertise on staff to assess the technical suitability of Yucca Mountain or any other potential site. But with regard to political suitability, we do believe that the Blue Ribbon Commission report was correct that the process by which Yucca Mountain was selected was flawed and has contributed to the erosion of trust that caused the program to stall.

And so we believe Congress needs to pursue a different and less adversarial approach that would be more likely to lead to selection of sites that are both technically suitable and publicly acceptable. And once such a process is in place, Yucca Mountain could and then should compete with other repository proposals on a level playing field.

One cannot underestimate the technical problems associated with building repository to effectively isolate nuclear waste from the environment for hundreds of thousands of years. The foundation of such an effort is good science. And one of the best ways Congress could improve the prospects for any repository is to fully support the scientific work needed to establish its technical basis.

In the case of Yucca Mountain, there are nearly 300 technical contentions that would have to be adjudicated, and we think the viability of Yucca Mountain depends on their -- critically on their resolution. And we do note that technical members within DOE have no doubt moved on to other things since the Yucca Mountain was terminated. So DOE, even if it gets all the resources it needs now, it will take time to reconstitute that expertise and to attempt to successfully defend its application.

A comprehensive strategy for waste management must address safety and security of spent fuel at reactor sites. Even if Yucca Mountain received a license tomorrow, there would be a lot of spent fuel at reactors for many decades to come.

So we believe, in principle, it can be managed safely and securely at reactor sites, but the NRC has failed to take steps needed to remediate a very dangerous situation that exposes millions of Americans to needless risk, and that is the potential

for fires and dangerously overloaded spent fuel pools. An earthquake or terrorist attack could cause a pool to lose its cooling water, releasing a large fraction of radioactive contents into the environment. The impact on the American economy would be profound, more than likely far worse than the estimated 200 billion damages caused by the much smaller release of radioactivity from the Fukushima Daiichi accident.

These consequences could be greatly reduced if nuclear plants transferred more of their older spent fuel to dry casks -- dry storage casks onsite, but the NRC has refused plans to do so insisting that the current risk is tolerable, and the industry will not voluntarily spend the money to do so if they are not forced to do so. So we urge Congress, as part of any nuclear waste management reform package, to address this risk either by requiring or creating strong incentives for plants to move more of their spent fuel to dry cast storage, and this requirement would also add good jobs in the dry cast storage construction industry.

The risk does not go down to zero even after the fuel has moved to dry casks. They have to be protected adequately from sabotage. And I would note that the NRC has suspended a rulemaking which would address additional vulnerabilities for sabotage of dry casks either in transit or in storage that need to be addressed.

With regard to consolidated interim storage, we do believe that a strong linkage needs to remain between licensing a repository and allowing consolidated interim storage to go forward because of the potential for derailing the momentum for geological repository. So we note that the discussion draft in allowing the DOE to move forward, even if NRC says no to Yucca Mountain, would be the wrong outcome and that there would be no other alternatives. So we believe we need to start looking for new geological disposal sites, and the time is to start looking for them now.

And I am already going over, so I will just conclude.

We think the U.S. can afford to allow the NRC to take its time in reviewing the safety of Yucca Mountain and to locate and characterize other possible repository sites provided that plants thin out their high-density spent fuel pools and other necessary upgrades are carried out. So there is no urgent need to rush forward with a less-than-optimal solution for the long term.

Thank you for your attention, and I would be happy to answer your questions.

[The prepared statement of Mr. Lyman follows:]

******** INSERT 2-1 ********

Mr. Shimkus. Thank you very much.

The chair now turns to Mr. Steven Nesbit, chairman of the Backend Working Group at the Nuclear Infrastructure Council.

You are recognized for 5 minutes. Welcome.

STATEMENT OF STEVEN NESBIT

Mr. Nesbit. Good morning. On behalf of the United States Nuclear Infrastructure Council, I thank you for the opportunity to appear and offer testimony on the Nuclear Waste Policy Amendments Act of 2017.

I appear before you today discouraged by the country's lack of accomplishments in the area of used fuel management over the past three-and-a-half decades but encouraged by the opportunity to make real and lasting progress over the coming months and years.

Let me start by emphasizing the urgent need to successfully manage the back end of the nuclear fuel cycle in this country. The used fuel impasse is costing U.S. taxpayers billions of dollars. In addition to the mounting costs, failure to bring closure to the back end of the nuclear fuel cycle adversely impacts nuclear energy as a vital component for reliable, affordable, and clean electricity and energy independence, jobs, exports, and competitors.

Speaking from the standpoint of my employer, Duke Energy Corporation, nuclear power has been a remarkable success story for our customers in North Carolina and South Carolina. Duke Energy operates 11 nuclear power reactors in these two States, and these nuclear plants generate about half of the electricity the company provides to its Carolinas' customers reliably, economically, and with minimal environmental impacts. Used fuel management, however, continues to be a costly and time-consuming burden for Duke Energy and other utilities, as described in more detail in my written remarks.

While nuclear power plants store used fuel safely and securely, extensive onsite storage of used fuel is a distraction from the plant's primary mission of producing electricity, and it has cost U.S. taxpayers billions of dollars to date with tens of billions to follow. There is an imperative need for action.

In a recent issue brief -- it is attached to my testimony -- the United States Nuclear Infrastructure Council made six recommendations on how to break the used fuel logjam. In particular, USNIC believes the government should carry out its mandate under the Nuclear Waste Policy Act and complete the initial licensing process for geological repository at Yucca Mountain.

Yucca Mountain is located in a remote arid region of the

country on federally owned land, and its suitability for disposal of used fuel has been confirmed by decades of scientific study involving the Nation's national laboratories and most recently a favorable safety evaluation by the Nuclear Regulatory Commission. It is time to follow the law and complete the regulatory review of Yucca Mountain.

USNIC applauds the Nuclear Waste Policy Amendments Act of 2017 as a significant positive step toward a more effective and sustainable used fuel management program for the country. Let me highlight some key points.

The discussion draft provides for necessary Federal actions to support completion of the licensing process at Yucca Mountain. It encourages a dialogue with the State of Nevada and its citizens about impact assistance and benefits that might be made available in return for hosting a geological repository. It provides a legal framework for a consolidated interim storage program for used nuclear fuel. It addresses funding, perhaps the most challenging aspect of this issue facing the Federal Government.

The draft legislation establishes a framework for accessing the existing balance in the waste fund as well as preserving future receipts, if any, for the purpose for which they were collected.

Finally, the discussion draft reestablishes and strengthens

the Office of Civilian Radioactive Waste Management, or OCRWM, within the Department of Energy as the entity responsible for fulfilling the government's obligations related to used fuel management. Of course, simply reestablishing OCRWM requires no authorizing legislation. And I would be remiss if I did not point out that DOE should act immediately to do so.

In addition, Congress should appropriate funding to DOE and the NRC to restart the Yucca Mountain licensing process, another action already authorized by Federal law.

In closing, I want to reiterate my thanks to your subcommittee for considering this important issue, and in particular, to Chairman Shimkus for his unswerving advocacy for an effective Federal program to manage used fuel and high-level waste in a manner that is consistent with Federal law. It has been said many times that used fuel disposal is a political problem, not a technical one. Nevertheless, it is an issue that must be addressed, and the nuclear industry which has consistently fulfilled its obligations under the Nuclear Waste Policy Act stands ready to work with the government to do so.

I look forward to answering your questions.

[The prepared statement of Mr. Nesbit follows:]

******** INSERT 2-2 ********

Mr. Shimkus. The gentleman returns the balance of his time.

The chair now recognizes Mr. Mark McManus, the general president of the United Association of plumbers, pipefitters, welders, and service techs of the United States and Canada.

Sir, you are recognized for 5 minutes. Thanks for being here.

STATEMENT OF MARK MCMANUS

Mr. McManus. Good morning. Chairman Shmikus and Ranking Member Tonko and members --

Mr. Shimkus. Let's do that again. Shimkus.

Mr. McManus. -- Shimkus and Ranking Member Tonko -- not Tomko -- Tonko and members of the Subcommittee on the Environment. Thank you. Thank you for your invitation to appear before the committee today to discuss the state of the nuclear energy industry and the economic impacts to our country.

My name is Mark McManus, and I serve as general president of the United Association of union plumbers, pipefitters, welders, and service techs. We represent 340,000 of the hardest working, highly trained men and women in the piping industry. When it comes to nuclear power, our members are at the forefront ensuring we deliver safe, clean energy to consumers. However, the nuclear

industry is in dire crossroads in America. To remain viable, we must recognize nuclear energy as a key component to our energy future and be actively committed to its overall success.

This hearing could not have come at a more important time. With many recently announced closures and other plants on life support, the time to act is now. As the best method of generating electricity without producing greenhouse gases, expanding nuclear power must be a top priority. In fact, most scientists agree that the world cannot sufficiently battle climate change without serious commitment to expanding our nuclear fleet.

Nuclear power currently makes up roughly 20 percent of the energy mix in the United States. Our current fleet, which stands at 99 reactors, is facing severe difficulties due to intense pricing pressures from natural gas. Natural gas alone, while carbon intense -- less carbon intensive than coal, is simply not enough to meet our overall reduction goals. To be successful, it is critical that we not only keep our current fleet of nuclear reactors open, but we also expand the nuclear power industry in the United States.

Consider the following: One, nuclear power produces 70 percent of our carbon-free electricity today. In contrast, wind and solar produce only 2 percent of the electricity and only 6 percent of our carbon-free electricity. Nuclear energy also

produces none of the air pollution that comes from burning fossil fuels.

Two, American nuclear reactors operate all day, all night, every hour on the hour, making nuclear a most reliable source of electricity. Renewable energy is intermittent with power available only when the wind blows or the sun shines, which is only about a third of the time.

Three, according to the National Academy of Sciences, nuclear energy can produce electricity at or below the cost of wind, solar, or coal with carbon capture. Renewable sources may seem cost effective, but only because they are subsidized with billions in government subsidies. At the current rates, the government and taxpayers would have to pay 170 billion to subsidies, 186 -- for the 186,000 wind turbines necessary to equal the outfit of 100 nuclear reactors.

Nuclear power is also vitally important to the American economy and job creation. The vast majority of nuclear reactors generating carbon-free power in the United States have been successfully maintained by the United Association members and our union contractors.

Each nuclear facility in our country employs 400 to 700 workers per 1,000 megawatts of power capacity. A new reactor like AP1000 currently under construction in Georgia will employ

thousands of our members for nearly a decade. When construction is complete, our members will handle the refueling and maintenance of these plants for 60 to 80 years. This is truly a long-term employment.

The same can also be said for the next generation of reactors. Small modular reactors, SMRs, are in various stage of developments. As it stands now, the first SMR that will be deployed in the United States is a reactor being built by NuScale for the Utah municipal authority on the Idaho National Lab site. This project includes the installation of over 150,000 linear feet of piping, 2,500 pieces of equipment, and 4,500 valves. These numbers represent thousands upon thousands of man hours for our members. This offers them the opportunity to provide for their families and sustain the middle-class life they worked so hard to have.

The economic benefits reach beyond the project construction and maintenance. Consider the tax revenue generated for the local schools, hospitals, and impact on local businesses that rely on the workers and their families' patronage. These projects create valuable communities for our citizens.

When a nuclear plant closes, it jeopardizes the ancillary jobs and the economies that support the plant. Communities that are left devastated are much like when we saw the auto

manufacturing plants close. The nuclear industry needs your assistance. It is no secret that the Westinghouse bankruptcy has cast a cloud over the future of nuclear power in the United States.

Over the next month or two, we hope to have a clearer picture on the long-term ramifications. But even before the Westinghouse situation, the United States was rapidly losing ground to countries like China and India who are outpacing us on development. As is happening with infrastructure in our country in general, we are falling behind others civilized countries. We must do more to become a world leader in this industry.

Hearing all this makes nuclear energy sound like a no-brainer. So why are we falling behind? Why won't we push forward? Why? Because despite of the economic -- the environmental benefits and job creations, we see reactors closing. Short answer is politics and public misperception.

Yucca Mountain is a prime example. It has been 30 years since Congress designated Nevada's Yucca Mountain as a secure site for our Nation's nuclear wastewater. Since then, $11 billion later, Yucca Mountain sits empty. Yucca Mountain is in a remote section of Mojave Desert and the secure storage facility is located 1,000 feet underground.

A case study released by the NRC in 2014 concluded that the

design met all the agency's requirements. They stated the proposed repository and design will be capable of safely isolating used nuclear fuel to the higher radioactivity waste for 1-million-year period specified in the regulations.

There are currently 79,000 tons of existing nuclear waste in America right now. It is stored in smaller facilities scattered across the country. These facilities are much less secure and much more less permanent than the long-term solution of Yucca Mountain. Each one of these smaller sites, 34 in all, require constant maintenance and vigilance from safety to security.

Mr. Shimkus. You have to wrap it up pretty quickly.

Mr. McManus. In conclusion, Mr. Chairman, United Association -- I believe the Nuclear Waste Policy Act of 2017 offers a great first step in revitalizing the nuclear energy and putting people back to work.

On behalf of the United Association, I apologize for going over my time. Thank you for hearing me.

[The prepared statement of Mr. McManus follows:]

******** INSERT 2-3 ********

Mr. Shimkus. The gentleman's time has expired. Thank you for your testimony.

I want to thank you all for your testimony. And I will move to the question-and-answer portion of the hearing and recognize myself for 5 minutes.

First of all, Ward, I want to thank you for coming. I know you are retiring May 4th. I know you jumped through hoops to make sure you were here. I personally appreciate it. Again, thank you for your service.

Let me turn to you, Mr. Sproat. During your tenure as the director of DOE's Yucca Mountain office, you oversaw the development of a project scheduled for, and I quote, "Best case scenario to get the repository open and operational." In 2006, you testified before Congress that certain provisions included in this discussion draft were critical to moving forward expeditiously.

Will you please -- I know you mentioned this in your opening statement. Will you please clarify which of these provisions are the most critical to successfully move forward with the repository?

Mr. Sproat. I would say, Mr. Chairman, the very first or top priority is about getting the issues associated with the nuclear waste fund fixed. You are talking about a major capital project

that will stretch over decades. And anybody who has been involved in running a major capital project, whether it is building a repository, building a power plant, knows that the first thing you need is to be able to hold somebody accountable for the costs and schedule that is needed to deliver that project is a source of funding that is predictable so that you can actually plan the project to meet that source of funding.

So getting the issue around the nuclear waste fund and the mismatch between the mandatory receipts and discretionary appropriations I would say is probably the top priority. Because without getting that fixed -- when I went back and looked at some of my older testimony in front of the Senate Budget Committee about what we anticipated we would need during peak construction of the repository, it was between $1-1/2- to $2-1/4 billion dollars a year during that peak construction period where we are buying canisters and building a repository. And at $750 million a year of receipts in the nuclear waste fund when the government was collecting those receipts, that had to be made up out of the nuclear waste fund. So I would say that would be number one.

Mr. Shimkus. I appreciate that. And just going off script, so we are talking about a big infrastructure plan for the country and the President has mentioned $1 trillion. Well, this could be 100 billion over 100 years.

Mr. McManus, that would probably employ at lot of your members, don't you think?

Mr. McManus. I do think so, and I think it is much needed, sir.

Mr. Shimkus. Thank you.

Again, back to Mr. Sproat. Section 503 of the discussion draft would make certain portions -- and this is kind of what you were talking about -- the balance of the corpus of the nuclear waste fund available for DOE if the Department reaches certain milestones over the course of the 120-year construction, operation, decommissioning, both -- and post-decommissioning monitoring phases.

Mr. O'Donnell, how would this approach benefit your ratepayers?

Mr. O'Donnell. Thank you for the question, Mr. Chairman. Clearly, it will give confidence and continuity to the program. In other words, it won't be up to the whims of when these funds will be available. But it will give the secretary the discretion and the program the confidence that it is going to be funded going forward. And I think that is essential to the central component from NARUC's perspective on this draft legislation.

Mr. Shimkus. And we haven't seen, historically, how political whims have derailed projects before, have we?

Mr. O'Donnell. I know that is a rhetorical question, Mr. Chairman.

Mr. Shimkus. Thank you.

Mr. Sproat, how would this provision assist with DOE's ability to properly plan and budget for certain milestones for a multigenerational capital infrastructure project?

Mr. Sproat. I don't profess to fully understand the intent of the wording, but I will say that in terms of maybe some of the implications of trying to implement it, the very first thing it would be is reestablishing the revenue coming in from utilities. And one of the things I would like to point out to the committee is that when we looked at -- when we, the Department, looked at the adequacy of the nuclear waste fund the last year I was there in 2008, we concluded that the nuclear waste fund corpus and its -- and its earnings through interest would be adequate to build and operate the repository. It would not be adequate to build and operate the repository and interim storage if -- assuming even at that point in time that the Department had full access to the corpus and the revenue coming into the fund. So it is one thing for the committee to consider in terms of adequacy of the fund going forward.

Mr. Shimkus. I am going to sneak one more in, and I am going to shorten it.

In 2007, the Department of Energy submitted a legislative proposal that intended to clarify whether RCRA applied to the disposal material on Yucca Mountain. Why is this clarification necessary?

Mr. Sproat. The reason that clarification is necessary is that -- and by the way, I am no expert on RCRA, but however, in talking with Department attorneys and some of my experiences post-employment with the Department, EPA has basically delegated an amount of regulation of -- to the States, I think appropriately so, for regulating what gets buried and how -- how various materials are disposed of in their State. In this case, the RCRA would allow the State of Nevada to regulate the burial of material at the site. And, for example, the waste canisters and the waste packages that are evaluated as part of the NRC license application where they -- they have determined there is adequacy to meet the design of their repository, the State could make a determination that those materials won't be allowed to be buried in their State.

So that issue of RCRA and the State ability to regulate various aspects of the -- of the buried material and the operation of the repository is something, I think, at least needs to be recognized and addressed appropriately.

Mr. Shimkus. Thank you very much. And RCRA, for the laymen, is Resource Conservation Recovery Act. I don't like to use

acronyms, but I tried to be quick.

So the chair now recognizes the ranking member of the subcommittee, Mr. Tonko, for 5 minutes.

Mr. Tonko. Thank you, Mr. Chair.

It is my understanding that there are over 200 contentions with the Yucca license application. Does anyone on our panel have an estimate on how long or expensive it will be to resolve these issues? Are we talking years? What kind of dollar amounts?

Mr. Sproat. Mr. Tonko, based on my experience in the commercial nuclear sector where I was involved with licensing one of our nuclear power plants back in the 1980s where we had, I think, probably -- I forget the exact number -- it was maybe about 16, 17 contentions, and that litigation in front of the Atomic Safety and Licensing Board took a little over a year.

It is not beyond the realm of possibility that with these number of contentions -- and the licensing board has the ability to combine those contentions together. They don't need necessarily to be litigated each one individually, but I would expect -- and I think in my written testimony I said two to three. It could be as many as four, depending on how that -- because not only does the Atomic Safety and Licensing Board make an additional -- an initial determination, there is an appeals board also if any of the parties want to appeal that before it goes to

the Commission.

Mr. Tonko. Thank you.

Anyone else? Dr. Lyman?

Mr. Lyman. Sorry. Yeah. I was involved in a few NRC adjudications, and there was one that took 10 years to resolve two contentions. I just thought I would put that in.

Mr. Tonko. Thank you.

Mr. O'Donnell?

Mr. O'Donnell. Thank you, Ranking Member Tonko. I think it is also important to note at this juncture that there is a cost that needs to be factored in of inaction. And the cost of inaction comes in from the judgment fund payments. About $800 million dollars a year coming out of the judgment fund payments. Up to this point, DOE has already paid $6.1 billion in damages, and that is the cost of inactivity. So the cost of inaction is very tremendous, about $2-1/2 million a day, and that is important to note.

Mr. Tonko. Thank you.

Mr. Nesbit, did you want to say something?

Mr. Nesbit. Mr. Tonko, I would like to agree with Mr. Sproat. And I would add that several years to resolve this number of contentions I don't think is unreasonable. I don't think you should expect that any repository anywhere would not

have contentions. So it is not like going somewhere else would save the time.

Moreover, we need to reestablish the infrastructure at the Department of Energy to be, as Mr. Sproat puts it, a willing applicant. And that is why I strongly recommend that we immediately reestablish the Office of Civilian Radioactive Waste Management.

Mr. Tonko. Thank you.

So I am hearing a number of years before construction and then transportation can even begin. And that may not fully take into account, I would believe, the State of Nevada's continued opposition, potential litigation, and appropriations issues here in Congress.

So with that, Dr. Lyman, given the timeframe to construct the long-term repository, waste will continue to accumulate at given sites. Should more be done to enhance safety at spent fuel pools?

Mr. Lyman. Yes. Thanks for the question. As I said in my written testimony, we don't think that the NRC is doing enough to assure the safety and security of spent fuel at reactor sites and also at consolidated interim storage sites, should they be built.

One issue I raised was the potential for a spent fuel pool fire, which is a result of the dense packed storage policy at U.S. plants which, in part, is a legacy of the failure to go forward

with a -- with a U.S. plan to take title and take spent fuel away from sites, but nonetheless, does not require that option to be mitigated, because you can expedite a transfer by taking most of the inventory of fuel out of the spent fuel pools, you can greatly reduce the risk of the spent fuel pool fire. And so that is one issue that I raised.

And there is no question that spent fuel will be onsite for many decades, especially since some reactors may be getting license extensions for up to 80 years. And as long as they operate, they are going to need onsite spent fuel storage.

Mr. Tonko. Well, with its given powers, can NRC require greater safety procedures, or is it something that Congress should consider legislating?

Mr. Lyman. Well, NRC to date has not -- they have considered these issues and not taken any action. So, really, it is up to Congress. At this point, until the composition of the Commission changes and their direction changes, there is room for some congressional action on this I think.

Mr. Tonko. Okay.

Mr. Nesbit, Duke Energy has paid 2.5 billion from customers into the nuclear waste fund. And Duke Energy has also been paid out significant sums from the Federal Government. Obviously, we don't know the specifics, but generally speaking, given the option

for interim storage, would Duke Energy or utilities in similar situations consider it a potential alternative while the government continues to work on a long-term solution?

Mr. Nesbit. We support consolidated interim storage. We think that it should -- the country should move forward with that and particularly focusing on fuel that is currently stored at shutdown plants. Because those plants do not have the -- if it were not for the used fuel onsite, they wouldn't have to maintain the infrastructure in terms of security, safety, emergency planning, radiation protection, et cetera.

Mr. Tonko. Thank you. I yield back. In fact, I have exhausted my time, so --

Mr. Shimkus. The gentleman's time has expired.

The chair now recognizes Congressman Joe Barton, former full committee chairman, for 5 minutes.

Mr. Barton. And I have handed both my phones to my staff so I won't be interrupted.

Mr. Shimkus. Good job.

Mr. Barton. It was her suggestion, so I have to give her the credit.

Mr. Sproat, what would happen, in your opinion, if we were to reopen -- and I am not advocating this, but if we were to reopen the site selection process for a permanent repository? Would we

have a different outcome?

Mr. Sproat. Mr. Barton, that is a very good question. I will just tell you, my own personal opinion is the answer to your question is no, we won't. If you go back and take a look at the history -- and, by the way, the staff put together a very good history on the Nuclear Waste Policy Act and its evolution and the activities that followed attached to the hearing notice. And we have attempted at least once, I think twice, going to various States and looking for a willing host community. One of the -- you know, we went to I think it was 31 or 32 governors that turned us down back in the 1970s or early 1980s, and then we had the nuclear waste negotiator whose job it was to negotiate a willing site, and they failed also.

My personal opinion, based on what happened about that history as well as what happened with privatized spent fuel storage, was that you could have a willing host community. Nye County in Nevada have said they want the repository. However, the surrounding units of government and the surrounding States, because any place we are going to have -- place a site, material is going to be transported through those local government jurisdictions will have a say. And quite frankly, I think the political opposition will occur if not in the host community, in the surrounding host communities and the transportation routes no

matter where we put it.

Mr. Barton. So it is really not feasible, in your opinion, to reopen the permanent site selection process? Personal opinion.

Mr. Sproat. Unless -- unless the Commission rules that the Yucca Mountain site cannot be licensed under the current regulatory regime, then we have to do something else.

Mr. Barton. The staff brief -- the majority staff brief for this hearing says that the Yucca Mountain site has passed all technical and safety reviews and has been found safe to store high-level nuclear waste for a million years. Is that correct?

Mr. Sproat. That is correct.

Mr. Barton. What is the half life of high-level nuclear waste, radioactive half life?

Mr. Sproat. Depending on -- why don't you ask Dr. Lyman that question? No. Depending on the radionuclides we are talking about, it is -- it could be -- it varies quite a bit. But if you went and took a look at the license application and some summaries of it, you will see a distribution of what the projected radioactive releases from the repository are out to a million years. And as I think Chairman Shimkus talked about at the very beginning, it was less -- less exposure than a cross-country airline flight.

Mr. Barton. Well, a million years puts it beyond my tenure

in this Congress. I mean, we are --

Mr. Shimkus. We can only hope.

Mr. Barton. Love that love you just gave me, Mr. Chairman.

How many -- I am going to ask Mr. O'Donnell this question: How many sites do you think will vie for the temporary repository if this bill becomes law? How many States?

Mr. O'Donnell. I appreciate that, Mr. Chairman, Congressman Barton. I really don't know. It would be hard for me to anticipate how many States might. I know that there are States that have interests. We have seen that. So --

Mr. Barton. One is my State.

Mr. O'Donnell. Of course. And there is your neighboring State as well, in New Mexico, I believe. So there is some interest out there, but it is hard for me to predict how many others may decide it is in their interest moving forward.

Mr. Barton. Are there -- is your association supportive of this pending legislation that requires for the -- for the temporary repositories that the States have to affirm that they will accept it?

Mr. McManus. We believe that those provisions for the temporary facilities are good. And we also believe that forward progress on any other opportunities to go forward are contingent on the licensing decision at the NRC, and NARUC believes it is

very, very important.

Mr. Barton. Mr. Chairman, I appreciate your courtesy. I yield back the balance of my time.

Mr. Shimkus. The chair recognizes the gentleman from California, Mr. Peters, for 5 minutes.

Mr. Peters. Thank you very much, Mr. Chairman. I appreciate the topic coming up in the subcommittee today.

It is interesting to hear that representatives from Nevada testify, obviously, nuclear fuel, what we do with it affects a lot of congressional districts around the country. Just on the edge of San Diego County is the San Onofre Nuclear Generating Station, one of the more recently shutdown locations. We have about 3.6 million pounds of spent fuel in need of safe storage. I think my constituents assert, and I agree, that the current property is not optimal. I also understand that our options to move it are limited.

I know that one of the ways to improve the situation is with the preferred location interim storage that allows us to consolidate some of the onsite storage. Seventy-eight sites in 34 States with spent fuel waiting, many in substandard storage with a number of -- growing number of nuclear facilities shutting down. Since 2012, nuclear plant owners have closed or announced the closure of 14 facilities, that includes San Onofre, which hasn't

produced electricity since 2012.

So moving spent fuel from these sites, especially shutdown sites, is not a new idea, but obviously in need of some new momentum, probably. So I had a couple of questions. And maybe, Mr. Sproat, jumping ahead to when Yucca Mountain would be open, say. There is obviously a capacity issue already with it. There is probably not enough space in Yucca Mountain to deal with a lot of the waste that we are dealing -- we are talking about moving. How would you prioritize what gets put in? A number of factors you might look at to weigh areas with the most fuel, largest concentration of people in the surrounding region, most dangerous environmental hazards, facilities that have already shut down, have been waiting the longest, nature of the field. How would you decide what gets in and what doesn't?

Mr. Sproat. Mr. Peters, actually, within -- and my memory here is a little vague. I can't remember whether it is in the Nuclear Waste Policy Act or whether it is in the implementing regulations in the Department of Energy, but there is something called the queue. And it has been in the law from the very beginning, which is oldest fuel gets moved first.

Mr. Peters. Okay.

Mr. Sproat. And when the liability of the Federal Government for not complying with the spent -- with the spent fuel removal

contracts that all the utilities signed, that contract required the beginning of moving of that fuel in 1998 from the oldest plants first. The courts have held that the liabilities that the government has is based on when that fuel should have moved based on the plant spot in the queue.

Mr. Peters. Okay.

Mr. Sproat. So in terms of the format and the regulations, I guess I would say, regarding what gets moved first, that has already been determined in terms of oldest fuel first. So San Onofre 1 would be very high in that queue, for example.

Second point I would just like to make about the capacity of the repository. The Nuclear Waste Policy Act set a limit of 72,000 metric tons heavy metal for that repository. But when the Department did the environmental impact statement, we -- I am sorry -- we evaluated a higher level, and my notes said it was 120,000 metric tons. So the license application is submitted based on what the law currently says is the legal limit. However, in terms of the EIS, the environmental impact statement, we evaluated 120,000 metric tons, which is -- which showed we could take more if that was permitted by law.

Mr. Peters. Thanks for your help.

I had another question that no one is raising. Maybe a little out of my comfort zone here, but I understand that the next

generation nuclear we have talked about a little bit purports to be more effective at spending more of the fuel, leaving less residual behind to dispose of. Is there any chance that the material we are talking about disposing of today would be useful in that next generation process?

Mr. Sproat. There is -- it is very interesting. That topic keeps coming up over and over again over the past couple of decades about taking the spent nuclear fuel and reprocessing it and generating more fuel. I will tell you my personal opinion based on what I know.

Number one, it doesn't make economic sense. The business case for doing that doesn't exist. It is very expensive. And, number two, the older fuel at this stage in the game is probably -- doesn't have enough residual energy in it to make it worthwhile anyway. So while it is -- I would believe -- I think a number of people would say it is scientifically and engineering possible to do that. I don't think it makes any economic sense.

Mr. Peters. When you say it doesn't make economic sense, are you comparing it to the use of new fuel? I understand that. But are you considering the costs that we are incurring to get rid of it? Is that part of the calculus?

Mr. Sproat. Yes, it is. Because even if you were to follow the reprocessing process and reprocess some of that fuel, you

still have, in some cases, some high level but a lot of medium level of radioactive waste left over that has to be disposed of. So it doesn't all disappear.

Mr. Peters. Right. Okay.

Thank you very much, Mr. Chairman. I yield back.

Mr. Shimkus. Thank you.

The chair now recognizes my vice chairman, Mr. McKinley, from West Virginia, for 5 minutes.

Mr. McKinley. Thank you, Mr. Chairman. Maybe you can follow up back on that line of questioning. I visited the recycling facility in La Hague in France, and they told us there that the cost of the recycling was very expensive and would require substantial subsidization if we were to -- if we were to embark on that. It is costing the French Government quite a bit of money to do that. But I know the technology there is very, very expensive to do that. So thank you for that.

But I also just want to congratulate our chairman on this. I am a Scotch Irishman. We are pretty stubborn on some things. But I thought this guy is even more stubborn than I am because he has endured this for the last 6 years that I have been in Congress, pressure. He has wanted to talk about this. He has wanted to be able to move this and advance this ball down the pike, but because of the previous administration we weren't able to do it. And I

admire the chairman for his not blinking. Because if nothing else, he has been able to educate a whole new group of Congressmen that have come in in the last 6 years to understand the merits of this program. So I really do admire him for being able to do that. Because, you know, we know, facts are stubborn things, and I think we are going to follow the science as we go down through this.

So, Mr. Sproat, if I could ask a question, as you have just -- my comment is that our country lost a substantial amount of time in getting this -- getting the licensed decision on Yucca Mountain after the administration shut the program down. Some opponents of the Yucca Mountain project suggested it will be too time consuming or costly to resume this licensing process. Do you agree with that? Based on your experience, would you expect it to be cheaper to continue or we start all over again?

Mr. Sproat. Well, the way I view it, Congressman, is we have a 35-year-plus investment in this process that the Nuclear Waste Policy Act laid out and specified how this whole process was to evolve. And we are now within 3 or 4 years of concluding it. And when I talk about that, I mean getting a final decision from the Nuclear Regulatory Commission on acceptability of the Yucca Mountain site and design.

There is no way, I believe, that that is going to be more

expensive than starting over again at this stage of the game. I just -- I can't be convinced of that.

Mr. McKinley. Won't we -- in this process, if we advance this, if there are questions, isn't that the purpose of the licensing decision process to find out, to ferret out any issue that we need to address? Isn't that what this is all about?

Mr. Sproat. It absolutely is. And the license application for Yucca were in three-ring binders about this wide and the five safety evaluation reports that the Nuclear Regulatory Commission staff issued where they evaluated the design is probably about this big. So in terms of the amount of time and effort spent by some people a lot smarter than me who figured out and evaluated all the technical issues associated with the repository, that is a huge investment, and I believe is worth a final determination by the NRC of whether or not to move forward or not.

Mr. McKinley. Just to finish it now.

So, Mr. O'Donnell, do you believe it would be cheaper and quicker to complete the licensing process and follow where the science leads us or the issues, or do you think we should start all over again?

Mr. O'Donnell. Congressman, I appreciate the question. Clearly, I don't think we should start over again. The ratepayers in this country have already made a substantial investment, $40

billion, for this process to continue. And as a commissioner and regulatory commissions across this country, all 50 States, the District of Columbia and the territories, that is what we do. We get presented with an application. We take a look at that application and allow it to have the due process and make that decision on the merits of that case. That is what we do day in and day out. That is how our system works. And yet in this particular process where the ratepayers have paid $40 billion, that due process is being denied because the application is not allowed to go forward through a merit-based evaluation, and that should stop. We should not restart this process. Thank you.

Mr. McKinley. Thank you.

Mr. Nesbit, the same question to you. Your thoughts?

Mr. Nesbit. I do not think there is any way it would be quicker, faster, and cheaper to start over and start looking around for another site. Not on this planet, sir.

Mr. McKinley. Okay. I am just thinking from a common sense thing, finish the job, find out what the facts are. The facts will lead us to the final decision. And I don't think we should be intimidated, and I hope we stay with the science rather than let politics come into play. Let the science lead us, get the decisions, and then we can make a decision. If it leads properly, that is fine.

Thank you. I yield back my time.

Mr. Shimkus. Spoken like a true engineer. So thank you. The gentleman yields back his time.

The chair now recognizes the gentleman from Texas, Mr. Green, for 5 minutes.

Mr. Green. Thank you, Mr. Chairman. And thank you and the ranking member for holding this hearing.

I have had the opportunity over a number of years ago to go with the chair to Yucca Mountain. I also, last fall, went and visited our South Texas nuclear plant that -- we have two nuclear plants in Texas, and interim storage is sitting there on those properties.

Decisions were made in the 1980s that none of us ever were a part of. But like my colleague from West Virginia, somewhere along the way we have to do something. And I know in Texas we already have an interim storage -- potential facility for interim storage in West Texas. So that is the frustration that we have, that, you know, we have this 72,000 metric tons of spent nuclear energy held at plants both active and retired across the country today.

Mr. Nesbit, does the nuclear -- U.S. Nuclear Infrastructure Council support the development of interim storage facility?

Mr. Nesbit. Yes, we do. We think that interim storage is a

component of an integrated used fuel management program for the country that could be very beneficial. However, we think the primary focus of that program needs to be on a geologic repository for ultimate disposal of the material.

Mr. Green. Well -- and I don't disagree, because the bill would actually prohibit going forward on interim storage, I understand, without some decision on the permanent storage. So -- but somewhere along the road, we have to have both. You can't ride a bicycle -- well, I guess you could ride a bicycle with one wheel, but we need to have both of them.

What are the advantages of opening interim storage facilities provide?

Mr. Nesbit. I am sorry, sir?

Mr. Green. What is the advantage of opening an interim facility?

Mr. Nesbit. I think the primary advantage would be to allow the consolidation of used fuel from shutdown plants, and I am referring to those sites around the country where the reactor is shut down and no longer producing power. And in many cases, there is nothing there except a dry storage facility for used fuel. It really doesn't make sense to maintain safety, environmental, radiation protection infrastructure at these scattered sites around the country. We do it, we can do it safely. But it really

makes sense to consolidate the material in one place so we can maintain it there a lot more cheaply. And I think the ongoing cost to the U.S. taxpayer would be much lower.

Mr. Green. And I agree that opening an interim facility should not preempt the completion of the licensing of an underground permit repository. An interim facility cannot become the de facto permanent repository like the sites are now, as you said.

Do you believe that the licensing and opening of an interim facility can be contingent on licensing of Yucca Mountain?

Mr. Nesbit. That is a decision for the Congress when it authorizes the legislation. I would like, personally, to see -- I think we can walk and chew gum at the same time, sir.

Mr. Green. Okay.

Mr. McManus, I want to welcome you to the panel. Coming from Houston, I obviously have both the pipefitters and the plumbers local. But when I visited the nuclear power plant in South Texas, it was mostly IPW members. I assume there were plumbers and pipefitters on the site in almost all of the nuclear power plants.

Mr. McManus. Yeah, I think we have jurisdiction on about 90 percent of the nuclear power plants in the United States.

Mr. Green. Okay. About how many members of the plumbers, pipefitters or the UA work in the nuclear industry?

Mr. McManus. It varies from outage to outage. We have 340,000 members. About 60 percent of our man hours are on the energy sector in the country, and they break out the nuclear industry per power plant, 400 permanent, 500 permanent jobs on average from there.

Mr. Green. And those are permanent jobs at the power plants?

Mr. McManus. Permanent jobs. New construction of a nuclear power house would probably peak out at about 3,000 -- 2,500 to 3,000 members on the construction of new nuclear power plant.

Mr. Green. And the average wage at those plants for --

Mr. McManus. Well, it certainly varies from South Texas to northern -- central California to New England. I would say the average wage would be $60 an hour, everything in.

Mr. Green. Okay. I know our committee also has jurisdiction over pipelines. And we had some issues about there were temporary jobs to build pipelines. These are not temporary jobs?

Mr. McManus. Temporary jobs built the Golden Gate Bridge and the Empire State Building. And where we are sitting here today, sir, it built every hospital. Our members are proud to work on temporary jobs. We take it as a badge of honor. We move from one job to another job. So the issue of temporary jobs is something I am passionate about, my membership is passionate about. Temporary jobs built this country, sir.

Mr. Green. I agree. And, of course, after they finish one pipeline, they can go to another pipeline.

Mr. McManus. Absolutely.

Mr. Green. I yield back my time.

Mr. Shimkus. The gentleman yields back his time.

The chair now recognizes the gentleman from Pennsylvania, Mr. Murphy, for 5 minutes.

Mr. Murphy. Thank you, Mr. Chairman. I am glad my friend, Mr. Green of Texas, pointed out -- by the way, we are also temp employees. We are just on a 2-year contract, some more than others. Some more temporary than others is what it comes down to.

Anyway, thanks for being here. First of all, Mr. McManus, I want to thank you for being here. I have got Local 27 in Pittsburgh, some just great men and women who work there, and I am proud to know many of them.

I want to talk about some of the aspects here if we don't build nuclear power as well. Of course, we also have Westinghouse in Pittsburgh, which has its own problems right now. But nonetheless, we know its value.

And what I want to talk about here is the economic impact of employment tax revenue, another aspect of maintaining and building power plants. I mean, a recent media story said that the termination of Yucca Mountain project resulted in a 2,500 job loss

in Nevada, 14 million lost revenues for the host communities. But what is the impact upon communities then around the nature too, not only with regard to building and maintaining power plants, but if we are talking about dealing with spent nuclear fuel and preparing it and sending it around, do you have some ideas the impact of jobs on that are?

Mr. McManus. I would be guessing on direct numbers there, but every closure of a nuclear power plant or of Yucca Mountain is an economic impact on not only the construction workers that maintain, build, and look after the places, it is everything that is surrounding the community as well, from the barber shops to the downtown communities that we all live and grown up in, from Pittsburgh to New England. Yankee closed up in New England, and it is a devastating effect to the community, every one of the closures.

Mr. Murphy. I appreciate that. And also I appreciate your comments too with regard to the nuclear fuels 24/7. It doesn't rely on wind and solar as it goes on. And I want to make sure we are maintaining that.

Anybody else want to comment on that economic impact of power plants and closures?

Mr. Nesbit?

Mr. Nesbit. Yes, sir. I will say that our plants are,

basically, economic engines for their local communities. We provide a number of dependable, high-paying jobs. We spend a lot of money to run those plants. Most of the cost associated with running a nuclear power plant is in the people and money that goes back to the local communities in terms of not just tax dollars but businesses that support those plants and the workers there. So we spend hundreds of millions of dollars a year on O&M costs for those plants, and that money goes right back into the local communities.

Mr. Murphy. Thank you. I want to ask a little more technical question now with some members here. Maybe Mr. Nesbit, Mr. O'Donnell, or someone else can answer this. Refer back to section 602 of the discussion draft which clarifies that the Office Civilian Radioactive Waste Management is the sole office in the development of energy to carry out activities required by the Nuclear Waste Policy Act.

Following President Obama's decision that Yucca Mountain was unworkable -- and those are in his words -- DOE closed that office and transferred all of the DOE responsibilities to the Office of Nuclear Energy, DOE's office that manages civilian nuclear energy research and development activity. So for any of the witnesses, do you support reconstituting this office to a single dedicated office to manage DOE's nuclear waste disposal activities,

particularly the near term while NRC's review of Yucca Mountain's license application is being completed? Who would like to comment on that?

Mr. Sproat. If I could, Mr. Murphy, the -- I would -- I do support that. I would say having run that organization for 2-1/2 years, it was made up of a number of people who spent a significant portion of their career trying to advance -- trying to execute the Nuclear Waste Policy Act and trying to move forward with solving the spent nuclear --

Mr. Murphy. By "execute" do you mean kill or execute --

Mr. Sproat. Actually -- no. To actually enable it, I guess is the right word to use.

Mr. Murphy. Thank you.

Mr. Sproat. But -- and a number of those people have moved on, but a number of those people are also still in the Department. And in order to successfully defend the license application and litigate the contentions in front of the Atomic Safety and Licensing Board, that needs to be one organization with one purpose that is not divided among different loyalties and among different missions. It needs to be single focused to get the license application approved.

Mr. Murphy. Thank you.

Mr. O'Donnell. Mr. Murphy, may I add something to that?

Mr. Murphy. Yes, Mr. O'Donnell.

Mr. O'Donnell. I think it is important to note that in my oral testimony and written testimony that the office was given a 5-year term. And NARUC is suggesting that the committee and the Congress may want to consider a longer term of office there as an insulator from the political whim so that should things change, we have some continuity in this very important program that is in the Nation's interest.

Mr. Murphy. I appreciate that. Thank you.

Mr. Chairman, I yield back.

Mr. Shimkus. The gentleman yields back the time.

The chair now recognizes the gentleman from California, Mr. McNerney, for 5 minutes.

Mr. McNerney. Well, I thank the chairman for holding this, and I thank the panelists for testifying this morning.

This is an important issue. I mean, I don't care how you feel about nuclear power, but we need a comprehensive Federal policy to deal with this issue in the long run.

I would like all the panelists to answer with a simple yes or no. Would you be able to support the current draft legislation with only minor modifications?

Mr. Sproat?

Mr. Sproat. Yes.

Mr. McNerney. Mr. O'Donnell?

Mr. O'Donnell. That is a difficult question. I know you want yes or no, but we have not evaluated all --

Mr. Shimkus. Look at your staff behind you real quick.

Mr. O'Donnell. Okay. The right answer is yes.

Mr. McNerney. Thank you.

Mr. Lyman. No, Mr. McNerney.

Mr. McNerney. Thank you.

Mr. Nesbit. Speaking personally, yes.

Mr. McManus. Yes, sir.

Mr. McNerney. Thank you.

Mr. Sproat, in answer to Mr. Peters' question about the priority list for waste to be removed, should that list -- you said that there is a priority list. Should that list be revised?

Mr. Sproat. Again, personal opinion, I would say no. And the reason I say no is because that -- essentially, the Federal Government has contractual obligations to remove spent fuel from the oldest plants first, and that's been in place for decades. And I think if we tried to modify that or change it at this stage in the game, that would open up another whole round of litigation that would be quite costly and just delay things.

Mr. Nesbit. Mr. McNerney, could I add some clarification?

Mr. McNerney. Sure.

Mr. Nesbit. We have contracts as utilities. We have contracts with the Department of Energy for the removal of the used nuclear fuel from our sites, and those contracts specify what Mr. Sproat referred to as the waste fuel. I do not believe that needs to be revised. And I will point out that the contracts contain a provision that allows the DOE, at its own discretion, to go pick up fuel from shutdown plants first if it deems it to be necessary and appropriate. So I think the current contracts are adequate in that regard.

Mr. McNerney. Thank you.

And I thank the chairman for the extra 2 minutes you are giving me here.

Mr. Shimkus. Just keep going on this line of -- these questions.

Mr. McNerney. Mr. Sproat, you mentioned that the water rights, but that was with respect to getting water to cool drill bits. What about the water -- I mean, I am from California. We have a little water contingent -- you know, issues. What about the water rights for areas that are nearby nuclear waste sites?

RPTR BAKER

EDTR ZAMORA

[12:01 p.m.]

Mr. Sproat. If I understand your question right, Mr. McNerney, this issue that I mentioned is strictly about at the Yucca Mountain site itself. In terms of if the Nuclear Regulatory Commission, from a technical standpoint, determines that the design of the repository is adequate, the site is adequate, and it gives the Department permission to build the repository, today, the State of Nevada, you know, can tell the State water engineer not to grant any water permits to the Federal Government to allow that repository to be built or operated.

Mr. McNerney. Well, I guess I was just trying to make a point that we need to consider what is going to happen to water rights for people that draw water near repository sites.

Mr. Lyman, you recommended gaining public support for storage sites. Absolutely obvious to me. How would you recommend -- what steps would you take to get public support? And would that be -- is there any chance or any hope of getting that support in the Yucca site?

Mr. Lyman. You called my bluff. Yes. Obviously, the how is difficult. The Blue Ribbon Commission had a proposal. The

Department of Energy presented one. The Nuclear Waste Technical Review Board have all come up with schemes by which you could have a process that would have a more formalized staged approach to getting consent.

Now, I think probably it all comes down to benefits. And the question is, is everyone going to benefit who may potentially be at risk from this? And the answer may be a quantity of benefits which may be, you know, unsustainable in the future, but we need to do at least something for the spent fuel that has already been generated and then decide whether this is an approach that is going to work for the future.

Mr. McNerney. So I mean, complete utter transparency has got to be part of it.

Mr. Lyman. Yes. Certainly, there has to be a framework in place where the technical aspects of the repository are considered independently. So you need site-independent technical criteria as a prerequisite so that at least any community will know that the process is not being gamed to force something just because that is what is available. And I think that is the situation we have now.

Yucca Mountain is the only site that has undergone, you know, enough characterization, that has gone through part of the licensing process, and that has a lot of momentum behind it, but it also has a lot of technical flaws and there are unresolved

technical issues. And so we don't want to see that political pressure short-circuiting the consideration of those technical issues. That is one thing, actually, which this discussion draft would seem to do in some of its provisions.

So you need to start with the science, with technical criteria, and you need to have multiple candidates. To put all the eggs in the Yucca Mountain basket could be a problem if you get to the end of the process and the NRC says no, and then you are left with no other candidates. That is why we think there need to be alternatives starting now.

Mr. Shimkus. The gentleman's time has expired, long expired.

Mr. McNerney. Well, I take back my compliment for giving me those extra two minutes, Mr. Chairman.

Mr. Shimkus. I still got a minute and a half more.

So the chair now recognizes the gentlelady from Tennessee, Mrs. Blackburn, for 5 minutes.

Mrs. Blackburn. Thank you, Mr. Chairman. And thank you all for your time today.

Mr. Nesbit, I think I want to come to you and kind of pick up on what Mr. McNerney was talking about with transportation. You know, with TVA, we have loved watching and really appreciated the work that has gone into Watts Bar 2. And I had the opportunity to visit that facility just as it was finished. And, of course, we

know that it was project number one coming into this century.

But talk to me just a minute about what your assessment is of the situation surrounding future transportation of the spent fuels in the cask. I know there is concern that has been raised, but we look at this and say there has to be a solution. And so we have touched on transportation. Let's just kind of close that loop, if you will.

Mr. Nesbit. Thank you very much for the question. There are a couple of things I would like to say. First of all, if you are going to solve the issue of what you ultimately do with nuclear waste, you have to transport the material. So simply being opposed to transportation of nuclear waste for some ephemeral reason is not grounds for opposing Yucca Mountain.

I heard a lot of concerns expressed about transportation this morning. I want to point out that transportation of used nuclear fuel is one of the safest endeavors in the history of mankind, and I don't say that lightly. Used fuel is transported in strong, robust waste packages that are designed to withstand a number of things: Impact, fire, immersion. They are regulated by the Nuclear Regulatory Commission and by the Department of Transportation. There is careful planning and security involved with all shipments.

From the experience of my company, Duke Energy Corporation,

we have transported more than 5,000 used fuel assemblies between our sites in the 1970s through the 2000s. We transported --

Mrs. Blackburn. Hold on just a minute. Reiterate that number again.

Mr. Nesbit. Over 5,000 used fuel assemblies.

Mrs. Blackburn. Okay. Without incident.

Mr. Nesbit. Without incident.

Mrs. Blackburn. Okay.

Mr. Nesbit. We transported them across State lines. We transported them by rail. We transported them by truck. We did not have a problem doing it. And that just reflects the larger worldwide experience.

There has been extensive transportation of used fuel and high-level waste around the world, particularly in Europe. It has happened for decades. No one has ever been hurt as a result of radiation released during transportation of this material. So I think it is important that we put that into context.

We should also note that the number of transportation activities in any given year for Yucca Mountain is not that large. It is in the hundreds. It is not this great transportation campaign that will be taking over the entire country or something like that.

But you don't have to take my word for it. There have been a

couple of very important studies that put transportation risk in context. In 2006, the National Academy of Sciences did a report that is called "Going the Distance: The Safe Transport of Spent Nuclear Fuel and High-Level Radioactive Waste in the United States." More recently, in 2016, the Oak Ridge National Laboratory published a report, "A Historical Review of the Safe Transport of Spent Nuclear Fuel." Both of those showed that this is an endeavor that can be done safely and securely.

Mrs. Blackburn. Thank you.

Mr. O'Donnell, I wanted to see if you could touch on section 402, and the better agreements and how the modifications made in section 402 will incentivize stakeholders to better work with the Federal Government in the Yucca Mountain project. And then as you touch on it, talk about how you support those changes or do not support those changes, what your approach to it is.

Mr. O'Donnell. I am trying to get to 402, so I apologize for that.

Mrs. Blackburn. It is the benefits agreement.

Mr. O'Donnell. Okay. We did not take a position on that.

Mrs. Blackburn. Okay.

Mr. O'Donnell. We didn't testify on it, and we are still evaluating. Because we have a short window to evaluate a lot of the aspects of this, we haven't evaluated that piece yet. So I

would be glad to make sure that we get our position --

Mrs. Blackburn. Okay. Why don't you submit that to me in writing.

Mr. Nesbit, I am coming back to you then. How about the Nuclear Infrastructure Council, do you support the provision?

Mr. Nesbit. The U.S. Nuclear Infrastructure Council believes that ultimately the Yucca Mountain repository should be and can be a win-win for the State of Nevada, the local residents around the repository, the nuclear power industry, and the Nation as a whole. I will point out, as has been mentioned earlier, that the county around Yucca Mountain, Nye County in which the repository resides, favors the development of a repository there as long as it meets the regulatory requirements for safety and environment.

I think that the legislation makes constructive changes to the benefit structure in allowing an open dialogue between the Federal Government, the States, and the counties, and I think that should facilitate that win-win that we are looking for.

Mrs. Blackburn. I yield back.

Mr. Shimkus. The gentlelady yields back.

If I may, just to talk about the benefits package, what this really is is an effort to open the door again to the State of Nevada because they previously said no. So under the current law, they don't get any benefits. They can't negotiate the benefits.

So what we are doing in this language, saying even though you said no, we are still willing to negotiate with you on benefits for the State of Nevada. So just to make sure we clarify what that provision is.

And I would like to turn to my colleague from Texas, Mr. Olson, for 5 minutes.

Mr. Olson. I thank the chair. And welcome to our experts.

Yucca Mountain is a 20-year story of raw politics, State versus State, Republican versus Republican, Democrat versus Democrat. I support Yucca Mountain for one simple reason: Yucca Mountain ensures that America is more secure from attacks by terrorists with radioactive weapons.

It doesn't have to be a big thermonuclear explosion, a mushroom cloud. It can be a simple dirty bomb, a conventional bomb that scatters radioactive material across a city like Houston, Texas.

As you all mentioned, we have 130 sites across America that high-level radioactive waste is stored. That sounds like a lot, but I have been told if you had that waste on a football field, it would go from goal line to goal line, 100 yards, sideline to sideline, 53 and a third yards, and 10 feet high, 3 and one-third yards. Look around. That is probably enough waste to fill two rooms this size. This is not some big pile. It is bad stuff, but

not some massive pile of radioactive waste.

I worry, as I mentioned, about terrorists picking out the weakest site of these 131 sites and grabbing that material and hitting my home. And that is why I support Yucca Mountain. Now, that is my wish. Let's talk about what is happening right now.

My first question is for you, Mr. McManus. For every piece of red tape that holds employers back, there is also the problem of lack of certainty. Can you talk about why it is important for us to get a path to permanent storage of spent fuel? Why do this now?

Mr. McManus. Why do it now? As you opened up, Congressman, it has been 20 years' worth of a political football. If not now, the question is when. Uncertainty is one of the biggest challenges of any construction industry, builder, owner, end user, for performance of work.

I also agree with your comments about the safety and the security of the Nation. So the red tape that we see on regular construction jobs, from the pipelines to this, is always a hampering of the industry. I congratulate the administration, the current administration, to try to cut through some of the red tape. Quite frankly, if not now on Yucca Mountain, when?

Mr. Olson. Thank you, sir.

My next question is for you, Mr. Nesbit. Your group supports

the development of an interim storage option. As you know, as the chairman knows, there are some Texans and others who want that option. Under current law, can we give a contract for a non-Federal entity to serve as an interim storage facility? Does this discussion draft give you that authority?

Mr. Nesbit. Sir, it is my understanding that it does. And the U.S. Nuclear Infrastructure Council supports the use of private entities to the maximum extent possible in the management of used fuel and high-level waste.

Mr. Olson. This bill, Title I says we can't go forward with that until we have a final decision on Yucca Mountain license. Is that correct?

Mr. Nesbit. Yes, sir.

Mr. Olson. Great. Again, I support Yucca Mountain. As I mentioned, I was in the Navy for 9 years. And they teach you if you are fighting defensively and protecting a sacred part of your infrastructure, you want your forces concentrated and you want to control the battlefield. So that means Yucca Mountain is the best place to do that. We have our forces there. Instead of 130 places all across the country, right there, one big repository. And the terrain, we control all the terrain. Again, as I mentioned, I am so concerned about this material getting in bad people's hands and having some sort of radiological attack on our

towns.

One more final question about interim permits. While waiting for Yucca Mountain to be actually -- the license approved first, how will those delays impact these interim storage facilities? Good, bad? How long will they wait for their permits? Any idea?

Mr. Nesbit?

Mr. Nesbit. It is hard to tell, because for the past 6 years, the country has been doing essentially nothing in the realm of used fuel management. We believe at U.S. Nuclear Infrastructure Council that both a repository at Yucca Mountain and consolidated storage are desirable elements of an integrated program, and we think that they will be additive. We think that one will help the other if both are pursued with vigor.

Mr. Shimkus. The gentleman's time has expired.

The chair now recognizes the gentleman from Ohio, Mr. Johnson, for 5 minutes.

Mr. Johnson. Thank you, Mr. Chairman. I appreciate the opportunity and thank our panel for joining us today.

Section 203(h) of the discussion draft makes the EPA the sole permitting authority for air quality permits exclusively within the defined Yucca Mountain site withdrawal area, and only for the purpose or support of activities to site, construct, or to operate a repository.

So, Mr. Sproat, will you describe what sort of activities that EPA would permit within the designated site?

Mr. Sproat. Within any major construction site, whether it is the repository or any other major construction site, there are a number of air permits that are required, whether you are running a -- and they are called source permits. So if you are running a boiler for steam, whether you are emitting exhaust from a diesel generator, all of those require air permits, source air permits. And in most cases, those are provided by the State.

So in this case, the State of Nevada would have the ability to block air permits needed for both the construction and the operation of the repository.

Mr. Johnson. Well, but I asked you about the EPA. So what would the EPA do? If the State holds that authority, what does the EPA do?

Mr. Sproat. I believe the reason that wording is in there is because under current regulations today, those air emission permits are regulated at the State level. And what this legislation is saying is, for the repository site itself, that is to be regulated by the Federal Government.

Mr. Johnson. So is the EPA still obligated to conduct the same review of all permitting documentation as Nevada would be?

Mr. Sproat. Yes. And those emissions would have to meet all

of the same guidelines that would be normally required.

Mr. Johnson. Okay. Section 202 of the discussion draft names the Yucca Mountain project beneficial to interstate commerce and in the public interest. This provision was previously proposed by the Department of Energy due to the State of Nevada objecting to providing access to water at the Yucca Mountain site.

So, Mr. Sproat, again, will you please provide some context regarding how much water is necessary and what sort of activities the water is used to support.

Mr. Sproat. It has been a long time, Congressman, and I certainly can't remember the exact quantities of water. But in the environmental impact statement that the Department submitted for the repository, those quantities are in that analysis. But as I mentioned before in I think my opening statement, the reason this was in here was because -- and where I became personally aware of some of the difficulties associated with the State permitting was that, as part of putting the license application together, we needed to do an exploratory drill of the subsurface to be able to do the seismic analysis for the buildings. And we needed water, a very, very small quantity of water to cool the drill bits, and the State water engineer was basically directed from the Governor's office not to give it to us.

Mr. Johnson. Okay. So how did DOE manage the operations

previously when Nevada turned off the spigot?

Mr. Sproat. We basically trucked water in.

Mr. Johnson. You trucked it in, okay.

Does the State of Nevada issue water permits for the Nevada National Security Site or other Federal facilities, such as military bases located in the State, that you know of?

Mr. Sproat. I have been told they do not, but I don't know that personally myself.

Mr. Johnson. Okay. Based on your experience at the Department, would enactment of this language that we are talking about today help satisfy the NRC's requirement that the Department has access to the required level of water for repository operation?

Mr. Sproat. I believe it would.

Mr. Johnson. Okay.

All right, Mr. Chairman, I yield back 38 whole seconds.

Mr. Shimkus. The chairman thanks you.

And the chair now recognizes the gentleman from North Carolina, Mr. Hudson, for 5 minutes.

Mr. Hudson. Thank you, Mr. Chairman.

And thank you to the panel for taking your time today for this really important discussion.

Mr. Nesbit, why shouldn't the country develop a separate

defense repository or deep borehole disposal?

Mr. Nesbit. Thank you for the question. It is one that is raised by the fact that in 2015, the previous administration made a determination that, in fact, the country should do that. I look at these things rather simplistically because I am an engineer. We have a fair amount of material that needs to be disposed of, used nuclear fuel, but also high-level waste residing at defense sites around the country, including the Savannah River site in the State of South Carolina.

And there are many different kinds of waste, but the challenge so far in this program has been to find a site to dispose of it in a geologic facility. If you were to develop separate repositories for different kinds of materials, then that would just compound the difficulty of finding multiple sites. Deep borehole disposal has been hypothesized. It has not been carried out, so there is no regulatory structure to cover it. So it would require an extensive program to qualify that method as well, so that would be additional cost. And ultimately, I think what makes sense is if you are going to dig a big hole in the ground and put waste there, you might as well make it big enough for everything.

Mr. Hudson. It makes sense to me too.

Mr. Sproat, kind of tie this all together for me. What

should DOE be doing to restart this Yucca Mountain project?

Mr. Sproat. At this stage of the game, it is extremely important to be able to, number one, reassemble a small group of experts, both from the national labs as well as the designers of the repository as well as the key Department staff as well as some outside legal counsel that is very familiar with NRC regulatory law, and to bring that team together and begin the adjudication of the contentions for -- in front of the NRC.

And that would require, basically, adequate funding to the Department to do that, to bring those people back together. In a lot of cases, those people either moved on or retired. But I can tell you -- I know a number of them personally -- they would be more than happy to come back on a part-time basis and defend the work they have done and they spent the majority of their career doing. So that is really what needs to happen next.

Mr. Hudson. I appreciate that.

For the panel, in addition to DOE, are there steps that should be taken by the EPA and the NRC? What would be the next steps to get us jump-started? I would open it up to anybody that wants to jump in.

Mr. O'Donnell. I will take a stab at your previous question first, and that is, there is an additional benefit to a combined repository, because it reduces the burden paid by the ratepayers.

So the ratepayers in your district and across this country have already paid $40 billion, and having DOE and a combined facility actually helps.

With regard to the next step, NARUC believes that this particular discussion draft is the most important next step before us. It is a very good first step and it moves the ball forward. So, from our perspective, we believe this is the right way to head.

Mr. O'Donnell. I appreciate that.

Mr. Lyman. Can I throw in one thing?

Mr. Hudson. I am about to run out of time. I am sorry. I want to get one more question in to Mr. O'Donnell.

Dealing with section 501, adequacy of Nuclear Waste Fund, current law requires the Secretary of Energy to conduct a fee adequacy analysis to evaluate the estimated program cost required by the Nuclear Waste Policy Act. NARUC successfully challenged DOE's most recent analysis which resulted in the D.C. Circuit Court of Appeals prohibiting further collection of the annual fee. Do you believe that DOE must conduct a new fee adequacy assessment prior to resumption of the fee collection?

Mr. O'Donnell. We do. And we believe that that analysis on the corpus of the money that is already there ought to determine and instruct whether a new fee is necessary or the interest from

that corpus can pay for the activities going forward. And additionally, if you do need a new fee, at what level it should be set. And we don't understand how you could ever set a new fee or start a new fee without analyzing it.

Mr. Hudson. I appreciate that.

Mr. Nesbit, back to you. Should the statutory requirement for DOE to conduct a life-cycle cost analysis remain?

Mr. Nesbit. Yes, absolutely. Any project should have an up-to-date and maintain total life-cycle cost analysis.

Mr. Hudson. Mr. Sproat, you conducted the life-cycle cost analysis for Yucca Mountain project. Will you describe the role of that analysis and the Department's assessment of the adequacy of the Nuclear Waste Fund?

Mr. Sproat. It is a fundamental input to that fee adequacy assessment. And the one thing I would like to point out is, so when we did that, the last one that I am aware of in 2008 had a number of assumptions regarding the number of plants that would life extend and when the repository construction would start that are no longer valid, so it needs to be redone.

Mr. Hudson. Okay. Mr. Chairman, thank you. My time has expired.

Mr. Shimkus. The gentleman's time has expired.

The chair now recognizes the gentleman from Texas,

Mr. Flores, for 5 minutes.

Mr. Flores. Thank you, Mr. Chairman.

I would like to say the ultimate solution to a lot of these issues is to continue basic research investment in newer technology, including small nuclear reactors, reactors that haven't even been thought of, also in terms of reprocessing. I think nuclear energy is an essential component of a clean energy future, particularly because, as Mr. McManus pointed out, it provides base load power on a low emissions basis.

Prior to asking my questions regarding funding for our Nation's nuclear waste management disposal program, I would like to make a point. And I think this follows onto something Mr. Nesbit said earlier, and that is that every day the Federal Government does not act increases the long-term cost on the American taxpayer for nuclear waste disposal. Last year, the American taxpayers paid out over $2 million every single day because the Federal Government is allowing spent nuclear fuel to sit scattered around the country.

Now I would like to discuss a couple reforms to move forward and fix this problem, and they follow Mr. Hudson's questions from a minute ago. The first one, Mr. Sproat, your testimony notes that DOE does not have access to funding from the Nuclear Waste Fund, as envisioned when the fund was created by the Nuclear Waste

Policy Act.

Title V of the discussion draft, the current discussion draft, seeks to address this challenge by allowing the fees to be used as offsetting receipts, which would permit Congress to more easily prioritize nuclear waste management activities in a budget-constrained environment, while preserving the portions of the previously collected fees for DOE activities over the life cycle of the Yucca Mountain project.

So three questions real quickly. Are the provisions, these provisions an important improvement from the existing funding mechanism?

Mr. Sproat. Yes.

Mr. Flores. Okay. And what further recommendations would you make to ensure necessary and proper financial resources are available to the Department?

Mr. Sproat. Whatever the legislation that is required to be able to give the Department access to the corpus of the fund as well as the interest being generated on the fund in a manner that meets the construction, the optimum construction expenditure profile, needs to be figured out how to do that.

Mr. Flores. Okay.

Mr. O'Donnell, let me ask you this: In your view, would the current discussion draft help enable a program to properly fund

nuclear waste management activities?

Mr. O'Donnell. It certainly would, Congressman. By determining that the Secretary shall have available on dates certain certain portions of the fund, that is tremendously important. It gives continuity and it tells you that the money is going to be there. The milestones are defined. And NARUC wants to look at the percentages on those milestones, but we do believe that, without further appropriations, the language is an improvement in this draft discussion, and we think that you are heading in the right direction here.

Mr. Flores. Thank you.

Mr. Nesbit, same question. In your view, would the current discussion draft help enable a program to properly fund nuclear waste management activities?

Mr. Nesbit. I believe it would, sir. I do not couch myself as an expert on the intricacies of congressional funding, but I think that this would be an improvement

Mr. Flores. There are several Members of Congress that don't either. Not me, I am a CPA, I got it.

The discussion draft removes activities to support a centralized interim storage facility from unauthorized use of the Nuclear Waste Fund. How would opening up the Nuclear Waste Fund to pay the cost associated with an interim storage facility

potentially impact the overall adequacy of the fund?

Mr. Sproat. What I can say is, based on the fee adequacy study that we did back in 2008, with the assumptions that went into that, in terms of the revenue stream and the interest rates that the fund would generate --

Mr. Flores. Yes, sir.

Mr. Sproat. -- we had enough -- the fund at that point in time under those assumptions was adequate to design and build and operate the repository and get it to closure. Nothing else.

Mr. Flores. Okay. Thank you to the panel for testifying today, and I yield back the balance of my time.

Mr. Shimkus. The gentleman yields back his time.

The chair now recognizes the former vice chair of the subcommittee, Mr. Harper, for 5 minutes.

Mr. Harper. Thank you, Mr. Chairman.

And thanks to each of you for being here today on this very important topic.

And so, Mr. Sproat, how close did I come on pronunciation there?

Mr. Sproat. Perfect.

Mr. Harper. All right. Look, I am sure you have visited the Yucca Mountain site on a number of occasions and viewed that. Is that safe to assume?

Mr. Sproat. Yes, that is correct.

Mr. Harper. Will you please describe the ownership and management of lands identified in the withdrawal description around the Yucca Mountain site.

Mr. Sproat. Right now, the Yucca Mountain site is part of the national security area that was part of the Nevada test site. And so the Department of Energy has responsibility for managing that site.

The issue that I mentioned in my opening testimony that was one of the issues that the Nuclear Regulatory Commission staff identified is that as under the regulations for the repository, the Secretary of Energy needs to show that that land cannot be used any time in the future for other public use, that it will be isolated from public use going forward, which means that land needs to be permanently withdrawn from public use by the Congress, and that hasn't been done yet.

Mr. Harper. So just so that I am clear then, the land withdrawal didn't just transfer land from a few Federal agencies to the Department of Energy. Is that correct?

Mr. Sproat. I can't speak to the legal aspects of land withdrawal and how that works, but what I can say is that what I do remember is that it requires an act of Congress to permanently withdraw that land from future public use.

Mr. Harper. Got it. The discussion draft would assure that the land withdrawal sections are effective if the Nuclear Regulatory Commission approves the issuance of the construction authorization for the repository. Do you believe that this will fulfill the necessary NRC requirements to demonstrate DOE's permanent ownership of the Yucca Mountain site?

Mr. Sproat. Yes.

Mr. Harper. All right. With that, Mr. Chairman, I will yield back.

Mr. Shimkus. The gentleman yields back his time.

The chair now recognizes the gentleman from Georgia, Congressman Carter, for 5 minutes.

Mr. Carter. Thank you, Mr. Chairman.

And thank all of you for being here. It is certainly an important subject, certainly something that all of us need to be concerned with.

I know we are concerned in the State of Georgia. You see, our ratepayers have paid over a billion dollars, over a billion dollars into the Nuclear Waste Fund to dispose of commercial spent nuclear fuel, yet the Department of Energy hasn't fulfilled its legal obligations and hasn't been disposing of my State's spent fuel. So, you know, I am going home and my constituents are asking me, where did our billion dollars go? What are we getting

out of it? And quite honestly, I don't know what to tell them, except we are not getting anything out of it. And they are tired of it, just like I am. I mean, you know, we want to do our part, but when we are told we are going to get something and we don't get it, then obviously we are upset about it.

Upstream from my district -- I represent the entire coast of Georgia. I start in Savannah and go all the way down to the Florida State line. Upstream from my district is the Savannah River plant, and that is where, of course, we have the storage of nuclear waste that is created as a byproduct of our Nation's national defense program. And under the provisions of the Nuclear Waste Policy Act, the American taxpayers have specifically paid for a portion of the Yucca Mountain project to dispose of this Department of Energy waste.

I want to ask you, Mr. O'Donnell, if I could, when President Obama reversed this, and whenever the policy to dispose of defense waste in a single repository with commercial spent fuel, as we have talked about during this time, that kind of put at risk almost $3.7 billion in investment that we had. Would you agree with that?

Mr. O'Donnell. I would agree with that. And I would say that that investment from the Department of Energy helps mitigate the exposure and the burden needed to be carried by the

electricity consumers in this country. And so it is a positive contribution to the infrastructure, and putting that at risk increases, in my opinion, the liability and exposure of the electricity ratepayers in the country going forward. And NARUC is very concerned about that.

Mr. Carter. And I am assuming, and I think correctly so, that all of you have read the proposed draft and that you are familiar with section 205. So section 205, which tells us that we will be able to do that, or at least the Department of Energy will not have to separate the two.

What kind of ramifications, Mr. O'Donnell, do you think that will have?

Mr. O'Donnell. One thing it will do is it will make clear that it is the policy of the United States, through the Congress, that combining these facilities going forward is a possibility and that it is restated in the law, which is to be disregarded at all of our peril.

Mr. Carter. And the impact that that would have on ratepayers. Again, I allude to what I led off with, and that is that I am having to answer to these people. They want to know where their billion dollars went, billion with a B.

Mr. O'Donnell. I agree. NARUC agrees strongly. We know the Georgia Legislature recently passed resolutions in this regard,

and that is very important. And NARUC is in strong agreement with you, Congressman, that we need to move forward and we need to realize the benefits that the ratepayers have already paid for, in my State, in your State, in all of our States.

Mr. Carter. Mr. Nesbit, real quickly, he just mentioned a resolution that the Georgia State Senate passed just last month dealing with this. Your group that you represent, how do you feel about the 205 provision?

Mr. Nesbit. We are very much in favor of it. I think it is a win-win for both the customers of nuclear-generated electricity, the burden that they bear, and the taxpayers who bear the burden of funding the disposal of so-called defense waste. Very much in favor.

Mr. Carter. All right. I want to shift gears real quick with the minute that I have got left.

Mr. McManus, I know that you have somewhat of a different approach, because you look at the economic and the jobs that come out of this and the economic impact and the economic well-being of your members. And, as you know I am sure, the industry is doing a lot of work down in Georgia. And I wanted to just get your input on the thousands of jobs that these construction sites, that they generate. And what kind of jobs are they? Are they highly skilled, highly paid jobs?

Mr. McManus. They are highly skilled jobs. The United Association, we spend $250 million a year every year. So in 4 years, that is a billion dollars in training, all privately funded from our own union, to have the technology of -- the changing technology of going forward. That is just not only apprenticeship training; that is continuing journeyman training of the new technologies coming. So we are highly skilled. These are good middle class, middle-of-the-road paying jobs that people can sustain a family, sustain a lifestyle in the good State of Georgia. And Georgia is a fantastic State for us concerning nuclear power.

Mr. Carter. Absolutely. And thank you.

And I yield, Mr. Chairman.

Mr. Shimkus. The gentleman's time has expired.

The chair now recognizes the gentleman from Michigan, Mr. Walberg, for 5 minutes.

Mr. Walberg. Thank you, Mr. Chairman.

And thank you to the panel. I wish I could have heard more. Due to a markup, I couldn't be here for the whole time. But having a nuclear power plant in my district that sits on the shores of Lake Erie storing spent fuel now in casks, this is of great interest to me for many reasons.

Mr. Nesbit, section 503 of the discussion draft would make

certain amounts of money available to DOE for activities associated with Yucca Mountain construction, operation, decommissioning, and post-decommissioning activities.

Does the NIC support this model as a way to assure DOE has funding available for the 120-year capital infrastructure?

Mr. Nesbit. The U.S. Nuclear Infrastructure Council hasn't conducted a thorough evaluation of this particular aspect of the legislation, but it appears to be a positive step forward in terms of assuring that the money will be available to carry out the various phases of this very long project.

Mr. Walberg. That being the case, would you describe how current operating nuclear power reactors budget to assure that funding is available over the course of a reactor and to pay for certain decommissioning activities?

Mr. Nesbit. Yes. We have requirements to set aside moneys in what we call the decommissioning fund, a certain amount each year to make sure that we are funded to a level such that when we do ultimately shut the plant down, we will be able to carry out the decommissioning activities, dispose of the radioactive materials, et cetera.

The one part of the equation that we can't handle when it comes to decommissioning is the disposal of the used fuel, and that is what we look to the Federal Government for.

Mr. Walberg. Okay. Mr. O'Donnell, section 501 of the discussion draft would limit the amount collected by the Federal Government to 90 percent of the appropriated level for nuclear waste management activities. Is this modified collection method an improvement from the existing statute? And secondarily, does NARUC have additional recommendations to modify the fee collection?

Mr. O'Donnell. Two things. We do believe it is an improvement because it more closely matches the collection with the appropriations, as Mr. Sproat testified to earlier, and we think that is a good direction to head.

In terms of additional fee collection conditions, we would simply say -- and I recall this in my testimony. You will see where I say that we think an evaluation of the ability of the interest on the corpus that has already been collected to fund the activities is essential before any new fee or any fee level is set. We have to understand how that works before we can set the fee level. So we believe strongly in that, and I hope that helps your understanding.

Mr. Walberg. Thank you.

Mr. Chairman, I yield back.

Mr. Shimkus. The gentleman yields back his time.

And we want to thank our panel.

Seeing no other members present -- for what purpose does the gentleman --

Mr. Tonko. Mr. Chair, if I could please respectfully ask for unanimous consent for a letter dated April 26, 2017, from NRDC be submitted for the record.

Mr. Shimkus. Without objection, so ordered.

[The information follows:]

******** COMMITTEE INSERT ********

Mr. Shimkus. And I have a whole list here. I was going to thank our panel before I adjourn.

I also would like to ask unanimous consent for the following letters: The letter to Representative Titus from the American Gaming Association; a letter from Governor Brian Sandoval; a letter from Senator Dean Heller; a letter from Board of County Commissioners in Nye County, Nevada; a letter from the Nevada section of the American Nuclear Society; editorial by the Albuquerque Journal Editorial Board; editorial by the Chicago Tribune Editorial Board; article from the Los Angeles Times, March 2017.

[The information follows:]

******** COMMITTEE INSERT ********

Mr. Shimkus. Pursuant to the committee rules, I remind members that they have 10 business days to submit additional questions for the record. If you get those, I would ask you to submit those back to the committee within 10 business days. Without objection.

Again, we want to thank you all for obviously spending a lot of time with us this morning.

And the hearing is adjourned.

[Whereupon, at 12:43 p.m., the subcommittee was adjourned.]