

# NUCLEAR WASTE

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HEARING  
BEFORE THE  
COMMITTEE ON  
ENERGY AND NATURAL RESOURCES  
UNITED STATES SENATE  
ONE HUNDRED THIRTEENTH CONGRESS  
FIRST SESSION  
TO  
RECEIVE TESTIMONY ON S. 1240, THE NUCLEAR WASTE  
ADMINISTRATION ACT OF 2013

JULY 30, 2013



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# CONTENTS

## STATEMENTS

	Page
Boyd, David C., Chairman, National Association of Regulatory Utility Commissioners Committee on Electricity, Vice Chair, Minnesota Public Utilities Commission .....	46
Davis, Lynn E., The RAND Corporation .....	86
Fertel, Marvin S., President and Chief Executive Officer, Nuclear Energy Institute .....	56
Fettus, Geoffrey H., Senior Attorney, Natural Resources Defense Council, Inc .....	64
Garcia, Joe, Vice President, Southwest Area, National Congress of American Indians .....	42
Jameson, Sally, Delegate to the Maryland House of Delegates, Chair, Nuclear Legislative Working Group, National Conference of State Legislatures .....	39
Knopman, Debra, The RAND Corporation .....	86
Lochbaum, David, Director, Nuclear Safety Project, Union of Concerned Scientists .....	75
Moniz, Hon. Ernest J., Secretary, Department of Energy .....	6
Murkowski, Hon. Lisa, U.S. Senator From Alaska .....	5
Smith, Chuck, Jr., Council Member, Aiken County, SC, Vice Chair, Energy Communities Alliance .....	51
Wyden, Hon. Ron, U.S. Senator From Oregon .....	1

## APPENDIX

Responses to additional questions .....	89
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## NUCLEAR WASTE

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TUESDAY, JULY 30, 2013

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

The committee met, pursuant to notice, at 2:34 p.m. in room SD-366, Dirksen Senate Office Building, Hon. Ron Wyden, chairman, presiding.

### OPENING STATEMENT OF HON. RON WYDEN, U.S. SENATOR FROM OREGON

The CHAIRMAN. The Energy and Natural Resources Committee will come to order.

Today the committee holds a legislative hearing on S. 1240, the Nuclear Waste Administration Act of 2013. I want to begin by expressing my appreciation to the bipartisan co-sponsors of the legislation, Senator Murkowski, Senator Alexander and Senator Feinstein for their exceptionally hard work and cooperation in bringing this bill forward for consideration.

I also want to thank the members of the Blue Ribbon Commission, including Secretary Moniz. He consulted with us and helped us chart a path forward for national nuclear waste policy.

Senator Feinstein has been a stalwart member of our team and provided invaluable input on the bill. She's submitted a statement for the record and without objection her statement will be entered into the hearing record in its entirety.

[The prepared statement of Senator Feinstein follows:]

PREPARED STATEMENT OF HON. DIANNE FEINSTEIN, U.S. SENATOR FROM CALIFORNIA

#### INTRODUCTION

Chairman Wyden, Ranking Member Murkowski, and members of the Energy and Natural Resources Committee: thank you for providing me, a former member of this esteemed committee, with the opportunity to testify on this extremely important piece of legislation.

The byproducts of nuclear energy represent some of the nation's most hazardous materials, but for decades we have failed to find a solution for their safe storage and permanent disposal.

Most experts agree that this failure is not a scientific problem or an engineering impossibility; it is a failure of government.

The Nuclear Waste Administration Act would finally establish a comprehensive nuclear waste policy, addressing the ever-growing amounts of highly radioactive waste that are being stored in communities across the country, costing taxpayers billions of dollars.

This issue is too important for politics as usual, which is why I'm proud to join Senators Wyden, Alexander and Murkowski in introducing the Nuclear Waste Administration Act.

This bipartisan legislation will establish a workable, long term nuclear waste policy for the United States—something our nation lacks today—by implementing the unanimous recommendations of the Blue Ribbon Commission on America’s Nuclear Future.

#### THE BILL

First, the bill would create an independent entity—the Nuclear Waste Administration—with the sole purpose of managing nuclear waste.

Second, the bill would authorize the siting and construction of three types of waste facilities: (1) a “pilot” waste storage facility for waste from shut down reactors, (2) additional storage facilities for waste from other facilities, and (3) permanent repositories to dispose of nuclear waste.

Third, the bill creates a consent-based siting process for both storage facilities and repositories, based on the successful efforts to build waste facilities in other countries.

Fourth, the bill would direct the fees currently collected from nuclear power ratepayers to fund nuclear waste management.

Finally, the legislation ensures that the new Nuclear Waste Administration will be held accountable for meeting Federal responsibilities and stewarding Federal dollars.

#### THE PROBLEM

The United States has 104 operating commercial nuclear power reactors that supply one-fifth of our electricity and nearly 75 percent of our emissions-free power.

However, production of this nuclear power has a significant downside: it produces nuclear waste that will take hundreds of thousands of years to decay. And unlike most nuclear nations, the United States has no program to consolidate waste in centralized facilities.

Instead, we leave the waste next to operating and shut down reactors sitting in pools of water or in cement and steel dry casks. Today, approximately 70,000 metric tons of nuclear waste is stored at commercial reactor sites. This total grows by 2,000 metric tons each year.

In addition to commercial nuclear waste, we must also address waste generated from creating our nuclear weapons stockpile and powering our Navy.

Although the Federal government signed contracts committing to pick up commercial waste beginning in 1998, the Federal government’s waste program has failed to take possession of a single fuel assembly.

Our government has not honored its contractual obligations. We have been sued, and we have lost. So today, the Federal taxpayer is paying power plant owners to store the waste at reactor sites all over the nation. The cost of this liability is forecast to reach \$20 billion by 2020.

As we try to manage our growing national debt, we simply cannot tolerate continued inaction.

#### THE SOLUTION

In January 2012, the Blue Ribbon Commission on America’s Nuclear Future completed a two-year comprehensive study and published unanimous recommendations for fixing our nation’s broken nuclear waste management program.

The Commission found that the only long-term, technically feasible solution for this waste is to dispose of it in a permanent underground repository. Until such a facility is opened—which will take many decades—spent nuclear fuel will continue to be an expensive, dangerous burden.

That is why the Commission also recommended that we establish an interim storage facility program to begin consolidating this dangerous waste, in addition to working on a permanent repository.

Finally, after studying the experience of all nuclear nations, the Commission found that siting these facilities is most likely to succeed if the host states and communities are welcome and willing partners, not adversaries. The Commission recommended that we adopt a consent based nuclear facility siting process.

The Nuclear Waste Administration Act would implement those recommendations, putting us on a dual track toward interim and permanent storage facilities. The bill also reflects much work by former Senator Bingaman, who put forward a similar proposal as one of the last bills he wrote.

In my view, one of the most important provisions in this legislation is the pilot program to begin consolidating nuclear waste at safer, more cost-efficient centralized facilities on an interim basis. The legislation will facilitate interim storage of nuclear waste in above-ground canisters called dry casks. These facilities would be

located in willing communities, away from population centers, and on thoroughly assessed sites.

Some members of Congress argue that we should ignore the need to interim storage sites and instead push forward with a plan to open Yucca Mountain as a permanent storage site. Others argue that we should push forward only with repository plans in new locations.

But the debate over Yucca Mountain—a controversial waste repository proposed in the Nevada desert, which lacks state approval—is unlikely to be settled any time soon.

I believe the debate over a permanent repository does not need to be settled in order to recognize the need for interim storage. Even if Congress and a future president reverse course and move forward with Yucca Mountain, interim storage facilities would still be an essential component of a badly needed national nuclear waste strategy.

By creating interim storage sites—a top recommendation of the Blue Ribbon Commission—we would begin reducing federal liability while our nation sites and builds a permanent repository.

Interim storage facilities could also provide alternative storage locations in emergency situations requiring spent nuclear fuel to be moved quickly from a reactor site.

Both short-and long-term storage programs are vital.

Permanently disposing of our current inventory of nuclear waste will take several decades.

Because of that long timeline, interim storage facilities allow us to achieve significant cost savings for taxpayers and utility ratepayers by shuttering a number of nuclear plants.

#### CONCLUSION

One thing is certain: inaction is the most costly and least safe option.

Our longstanding stalemate is costly to taxpayers, utility ratepayers and communities that are involuntarily saddled with waste after local nuclear power plants have shut down.

And it leaves nuclear waste all over the country, stored in all different ways.

It's long overdue for the government to honor its obligation to safely dispose of the nation's nuclear waste.

This will be a long journey, but we must take the first step.

Thank you, Chairman Wyden and the committee.

The CHAIRMAN. Before we hear from Secretary Moniz and our other witnesses, I'm going to make just a few points.

First, it's my strong belief that the country needs a way to permanently dispose of nuclear waste from commercial nuclear power plants and from Defense programs. Simply continuing to pass the burden of safely disposing of nuclear waste to future generations is not an option. That's true whether the waste is at shuttered nuclear power plants or if it's in tanks alongside the Columbia River in the Pacific Northwest.

The Federal Government is contractually obligated to take spent fuel for disposal and this liability, already in the billions of dollars, continues to grow with each passing day. The Federal Government is morally obligated to make sure that wastes from the Nation's nuclear weapons programs are safely disposed of in a permanent repository.

Second, whether you happen to be for or against opening Yucca Mountain, Yucca Mountain was not designed to be big enough to handle all of the spent fuel in nuclear waste that will need disposal. Today there are roughly 70,000 metric tons of spent fuel already sitting at nuclear plants around our country. The GAO, the Government Accountability Office, estimates that that amount is going to double just from the current generation of nuclear power plants, to over 140,000 metric tons.

Seventy thousand metric tons is the statutory capacity limit for Yucca Mountain until there is a second repository. That leaves no room for the commercial spent fuel that will be generated this year or next year or the year after that.

It also leaves no room for the spent fuel from the Navy or for the tens of thousands of canisters of high level waste expected from Hanford and the other Department of Energy nuclear weapons sites.

Third, continuing to keep spent fuel and high level waste where they are today—in reactor pools that were not originally designed to store large quantities of spent fuel for long periods of time at DOE nuclear sites and at decommissioned nuclear power plants—is an exercise in institutional inertia. I was reminded of a harsh truth when I visited Fukushima. Accidents don't always follow safety precautions. If plant safety can be improved by reducing the amount of spent fuel stored in existing pools, then there's an option that ought to be on the table.

It also is time to come to terms with the fact that having permanent disposal capacity for all of the waste that the country is going to have is not going to be up and running any time soon.

Fourth, no one who has commented on the subject believes that the U.S. Department of Energy should continue to be in charge of this program. S. 1240 would create a new agency with a 5 member independent oversight board to site and manage the government's nuclear waste, storage and disposal facilities. There is also a general consensus that the Federal Government needs to work with State and tribal governments in siting these facilities, not in conflict with them.

Finally the bill would also authorize the Secretary of Energy to revisit the decision made after the 1982 act was passed to commingle commercial spent fuel and high level waste in the same disposal system. S. 1240 would require the new agency to begin right away to site new facilities for storage of priority waste. Priority waste includes spent fuel at decommissioned nuclear plants and emergency shipments of spent fuel that present a hazard where they're stored.

However, storage is not permanent. It's temporary. The new agency is required to also site a permanent repository. Financial commitment to move ahead with the repository and selection of potential sites for that repository are prerequisites for any additional spent fuel storage facilities to come online.

It has now been 3 decades since Congress passed the Nuclear Waste Policy Act of 1982. In many ways the country is no closer to having a permanent solution to these problems than it was then. If anything, there is even less confidence in the government's ability to solve these problems and meet its commitments to utilities and their ratepayers.

Our goal with this legislation is to get the permanent repository program back on track and to make sure spent fuel and nuclear waste are handled safely until it is.

I want to recognize Senator Murkowski.

I just want to note that I think I misstated my judgment with respect to Fukushima because really the harsh truth with respect to Fukushima is accidents don't always follow safety predictions. I

believe I said, precautions. So in the broad sweep of Western Civilization, perhaps not everyone noticed. But I did. I appreciate the recorder correcting that.

[Laughter.]

The CHAIRMAN. So I thank my colleagues for their patience. Let me recognize Senator Murkowski.

**STATEMENT OF HON. LISA MURKOWSKI, U.S. SENATOR  
FROM ALASKA**

Senator MURKOWSKI. Thank you, Mr. Chairman.

I want to thank you for your leadership on this issue, working with you, Senator Alexander, Senator Feinstein, in trying to come together over the course of many months to really find this path forward. I think it is because of your leadership and the commitment of these others that we were able to reach consensus on the language and have this hearing relatively quickly after introduction. So again, thank you.

We know that there are provisions within this bill, there are certain segments that are not universally supported, some areas that were perhaps not addressed to everyone's satisfaction. But I think that what we have tried to do is to put forward legislation that can get us from where we are today on the back side of the nuclear fuel cycle, namely a process that has effectively mastered the art of going nowhere slowly, to a place where actually progress has been made.

Where spent nuclear fuel is deposited into permanent repositories.

Where the American taxpayer is no longer liable for the government's breach of contract. A breach that has cost nearly \$3 billion so far and of course, is likely to grow upwards of \$20 billion if the government fails to accept used fuel by 2020. By some estimates may increase by as much as \$500 million each year thereafter if no action is taken.

So we're talking real dollars here.

One of the areas of significant discussions centered on the structure of this new entity whether it should be led by a single administrator, a person who essentially calls the shots and is the person to go to if things are working or perhaps aren't working or a board of directors as recommended by the Blue Ribbon Commission. Either approach can work. Either approach could fail.

We chose the single administrator structure with an enhanced oversight board as a way to streamline the process and get the casks moving.

We have essentially written in a 10-year window for this new entity to show real results. I think we recognize that it is an aggressive timeline. But hopefully it's doable. I believe it sends an important message to the American people, to industry, and to all those who follow nuclear issues that we are not willing to wait another 30 plus years to resolve the back end of the nuclear fuel cycle.

Now as the committee considers the approach that we have offered. I'd like to mention an area that I think we're going to need to address more comprehensively during this committee process and that's the transportation of waste in dry cask storage to a storage facility or repository.

According to the NEI, more than 3,000 shipments of used nuclear fuel have been made over the past 40 years by rail, by truck and sometimes barge. While there are a handful of transport containers that are certified by the NRC, there are nearly 1700 dry cask units at operating reactors and stranded and shut down sites representing over 19,000 metric tons of used nuclear fuel. However, no transport containers have been procured for those units in large part because they just don't have any place to go.

But even if we were to pass this legislation tomorrow significant work needs to be done at the stranded sites. The priority sites that are identified in the bill just to get the storage casks to a rail head. DOE's Office of Fuel Cycle Technology estimates that it will likely take 12 to 15 years to remove the waste from the stranded sites with the first 5 to 6 years needed to acquire the resources and to prepare the infrastructure. So I do hope it is something that we'll have an opportunity to discuss more within this committee.

I, too, Mr. Chairman, would like to recognize the work of Secretary Moniz, his leadership on the Blue Ribbon Commission and also the fact that he was willing to consult with the 4 of us as we attempted to address some of these difficult issues.

I'll be interested in hearing the comments from our second panel here today on how we can better address the issues of our nuclear waste within this country.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Murkowski.

First of all my thanks to you for your continued cooperation as we've done a whole host of issues. I think your point with respect to transportation is very well taken. I'm anxious to work with you on it.

Several colleagues said that they were on a time crunch with respect to this afternoon. I think Senator Heinrich said that he may want to make a comment early on? Are there other colleagues that would like to make a comment before we go to Secretary Moniz?

Senator HEINRICH. Actually, Chairman, I'll hold my opening comments until we get to the questions.

The CHAIRMAN. Very good.

Senator HEINRICH. First panel.

The CHAIRMAN. Any other colleagues?

OK, Secretary Moniz, welcome and again, our thanks for your cooperation in a number of those meetings. I had real questions about whether or not we were going to be able to get a bipartisan agreement here. The fact that we did, to a great extent, was sparked by your assistance and cooperation.

So we thank you.

We'll put your prepared remarks into the record in their entirety. Just please proceed to outline your views.

**STATEMENT OF HON. ERNEST MONIZ, SECRETARY,  
DEPARTMENT OF ENERGY**

Secretary MONIZ. Thank you, Mr. Chairman and Ranking Member Murkowski.

First of all let me say I want to thank you for, and your colleagues, Senators Alexander and Feinstein for the chance to discuss these issues some weeks ago. I think it was pretty important

for us to be able to exchange those views. I appreciate that opportunity to work together.

So to both of you and members of the committee, thank you for inviting me here to discuss the Nuclear Waste Administration Act of 2013 and the activities this Administration has ongoing to meet the challenge of managing and disposing of used nuclear fuel and high level radioactive waste.

I wish to commend, again, the 4 sponsoring Senators on their leadership in crafting what I believe is a very thoughtful approach to nuclear waste management in S. 1240. While the Administration has not taken a formal position on the legislation, I certainly believe it is very promising framework for addressing the key issues.

It's based on the recommendations, as you have said, of the Blue Ribbon Commission on which I had the pleasure of serving under the leadership of Lee Hamilton and Brent Scowcroft.

The Administration embraces the principles of the Commission's core recommendations and like, S. 1240, the Administration supports the goals of establishing a new, workable, long-term solution for nuclear waste management. I appear before the committee today to reinforce that the Administration is ready and willing to engage with both chambers of Congress to move forward. I believe that S. 1240 provides a workable framework for that engagement.

Any workable solution for the final disposition of used fuel and nuclear waste must be based not only on sound science, but also on achieving public acceptance at the local, State and tribal levels. When this Administration took office, the timeline for opening Yucca Mountain had already been pushed back by two decades, stalled by public protest and legal opposition and with no end in sight. It was clear the stalemate could continue indefinitely.

Rather than continuing to spend billions of dollars more on a project that faces such strong opposition, the Administration believes a pathway similar to that the Blue Ribbon Commission laid out, a consent based solution for the long term management of our used fuel and nuclear waste, is one that meets the country's national and energy security needs, has the potential to gain the necessary public acceptance and can scale to accommodate the increased needs of the future that includes expanded nuclear power deployment.

In January 2013 the Administration released its strategy for the management and disposal of used nuclear fuel and high level radioactive waste which, again, endorses the key principles of the Commission's report. The strategy lays out plans to implement, with the appropriate authorizations from Congress, a long term program that begins operations of a pilot interim storage facility, advances toward the siting and licensing of a larger interim storage facility, and makes demonstrable progress in the siting and characterization of repository sites to facilitate the availability of one or more geological repositories.

Consolidated interim storage is a critical component of an overall used fuel, waste management system and offers a number of benefits such as offering the opportunity to remove fuel from shut down reactors, meeting the government's waste acceptance obligations sooner and reducing the government's liabilities caused by delayed waste acceptance. No matter how many facilities or what specific

form they take, a consent based approach to siting is critical to success. The Administration supports working with Congress to develop a consent based process that is transparent, adaptive and technically sound.

The Commission emphasized that flexibility, patience, responsiveness and a heavy emphasis on consultation and cooperation will all be necessary in the siting process and in all aspects of implementation. The strategy also highlights the need for new waste management and disposal organization to provide the stability, focus and credibility to build public trust and confidence. Again, there are multiple models that exist along a continuum from government program to Federal corporations. But as we've discussed, whatever form the new entity takes, keys are organizational stability, an appropriate level of autonomy, leadership continuity, oversight and accountability and public credibility, all critical attributes for future success.

So we feel we are facing a unique opportunity to address the needs of the back end of the nuclear fuel cycle by setting it on a sustainable path and providing the flexibility needed to engage potential host communities and anticipated advancements in technology. We need to move forward with tangible progress toward used fuel acceptance, initially from closed reactor sites, providing more certainty to the nuclear industry. This progress is critical to assure that the benefits of nuclear power are available to current and future generations.

I'll be happy to answer any questions you may have.

Thank you.

[The prepared statement of Secretary Moniz follows:]

PREPARED STATEMENT OF HON. ERNEST J. MONIZ, SECRETARY, DEPARTMENT OF ENERGY

Chairman Wyden, Ranking Member Murkowski, and members of the committee, thank you for inviting me to discuss the Nuclear Waste Administration Act of 2013 and the activities this Administration has ongoing to meet the challenge of managing and disposing of used nuclear fuel and high-level radioactive waste.

The United States, like all countries, faces challenges associated with ensuring its people have access to affordable, abundant, and environmentally friendly sources of energy. President Obama has made climate change mitigation a priority and set a goal of reducing emissions in the range of 17 percent below 2005 levels by 2020. The promise of nuclear power is clear. Electricity generation emits more carbon dioxide in the United States than transportation or industry, and nuclear power is already the largest source of carbon-free electricity in this country. Nuclear power has an important role in President Obama's all-of-the-above approach to energy, and will play a significant part in reducing carbon pollution under the President's Climate Action Plan. As the President noted in Korea last spring, "in the United States, we've restarted our nuclear industry as part of a comprehensive strategy to develop every energy source." This includes providing conditional commitments to loan guarantees to support the first commercial reactors licensed and built in the U.S. in three decades. Currently, we have five new commercial nuclear reactors under construction, including four AP1000 reactors, with passively safe features. The Department of Energy (DOE) is also helping accelerate the commercialization of first generation of Small Modular Reactors (SMR) through a cost shared program with industry. We believe SMRs will be part of the future model of nuclear energy worldwide, where both SMRs and gigawatt-class reactors are deployed depending on the requirements.

Nuclear power has reliably and economically contributed almost 20 percent of electrical generation in the U.S. over the past two decades. It remains the United States' single largest contributor (more than 60 percent) of non-greenhouse-gas-emitting electric power generation. We believe that nuclear energy will continue to be an important part of the Nation's low carbon future.

I wish to commend Senators Wyden, Murkowski, Alexander, and Feinstein on their leadership in crafting a thoughtful approach to nuclear waste management in the Nuclear Waste Administration Act of 2013, S. 1240. While the Administration has not taken a position on the legislation, I believe it is a promising framework for addressing key issues. It is based on the recommendations of the Blue Ribbon Commission on America's Nuclear Future, on which I had the pleasure of serving under the leadership of Lee Hamilton and Brent Scowcroft. The Administration embraces the principles of the Commission's core recommendations and, like this legislation, supports the goals of the establishing a new, workable, long-term solution for nuclear waste management. I look forward to continuing to work with you and your colleagues on the continued development of the new program.

Any workable solution for the final disposition of used fuel and nuclear waste must be based not only on sound science but also on achieving public acceptance at the local and state/tribal levels. When this Administration took office, the timeline for opening Yucca Mountain had already been pushed back by two decades, stalled by public protest and legal opposition, with no end in sight. It was clear that the stalemate could continue indefinitely. Rather than continuing to spend billions of dollars more on a project that faces such strong opposition, the Administration believes a pathway similar to that the Blue Ribbon Commission laid out—a consent-based solution for the long term management of our used fuel and nuclear waste—is one that meets the country's national and energy security needs, has the potential to gain the necessary public acceptance, and can scale to accommodate the increased needs of a future that includes expanded nuclear power deployment.

The Administration's Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste provides a basis for discussions between the Administration and Congress on a path forward for disposal of nuclear waste and provides near-term actions to be implemented by the Department of Energy pending enactment of new legislation. We are facing a unique opportunity to address the needs of the back-end of the nuclear fuel cycle by setting it on a sustainable path and providing the flexibility needed to engage potential host communities and anticipate advancements in technology development. I appear before this committee today to reinforce that the Administration is ready and willing to engage with both chambers of Congress to move forward.

#### STRATEGY FOR THE MANAGEMENT AND DISPOSAL OF USED NUCLEAR FUEL AND HIGH-LEVEL RADIOACTIVE WASTE

Finding a solution to managing and disposing the nation's high-level radioactive waste and used nuclear fuel is a long-standing challenge. Such a solution, however, is necessary to assure the future viability of an important carbon-free energy supply and further strengthen America's standing as a global leader on issues of nuclear safety and nonproliferation.

In FY 2010, Secretary Chu, at the direction of President Obama, established the Blue Ribbon Commission on America's Nuclear Future (BRC, or the Commission) composed of representatives from government, labor, academia and industry. The charter charged the Commission with conducting a "comprehensive review of policies for managing the back end of the nuclear fuel cycle, including all alternatives for the storage, processing, and disposal of civilian and defense used nuclear fuel, high-level waste, and materials derived from nuclear activities. . . [and to] provide advice, evaluate alternatives, and make recommendations for a new plan to address these issues." The Commission issued its final report on January 26, 2012.

The report included eight key recommendations:

1. A new, consent-based approach to siting future nuclear waste management responsibilities.
2. A new organization dedicated solely to implementing the waste management program and empowered with the authority and resources to succeed.
3. Access to the funds nuclear utility ratepayers are providing for the purpose of nuclear waste management.
4. Prompt efforts to develop one or more geologic disposal facilities.
5. Prompt efforts to develop one or more consolidated storage facilities.
6. Prompt efforts to prepare for the eventual large-scale transport of spent nuclear fuel and high-level waste to consolidated storage and disposal facilities when such facilities become available.
7. Support for continued U.S. innovation in nuclear energy technology and for workforce development.
8. Active U.S. leadership in international efforts to address safety, waste management, non-proliferation, and security concerns.

In January 2013, the Administration released its Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste, which endorses key principles of the Commission's report. The Strategy lays out plans to implement, with the appropriate authorizations from Congress, a long-term program that begins operations of a pilot interim storage facility, advances toward the siting and licensing of a larger interim storage facility, and makes demonstrable progress on the siting and characterization of repository sites to facilitate the availability of a geologic repository. It is important to stress that neither the BRC recommendations, nor the Administration's Strategy, make recommendations on siting of such storage facilities or repositories.

As noted, the Administration's Strategy endorsed the concept of the development of three different, but intimately related, facilities. While the Strategy indicates one of each of three separate facilities, it is conceivable, as the result of a consent-based siting process, that some or all of these facilities could be co-located and/or more than one of each type could be constructed.

Consolidated interim storage is a critical component of an overall used fuel and waste management system and offers a number of benefits. As outlined in the Strategy, it offers an opportunity to remove fuel from shutdown reactors—places where in many cases removal of used fuel is one of the last steps to releasing the site for other uses. There are now twelve such sites. In addition, a consolidated interim storage facility could enable the Federal government to begin meeting its waste acceptance obligations sooner and ultimately reduce the government's liabilities caused by its delay in meeting its obligations. These liabilities are currently projected to be as much as \$23 billion over the next 50 years, assuming waste pick-up begins in 2020. Also, a consolidated interim storage facility or facilities would provide additional capability to receive spent fuel in emergency situations. It would allow for repository designs for waste emplacement after a sustained cooling period. Finally, an interim storage facility would also support the repository by providing a buffer for disposal operations and flexibility for the system as a whole, even potentially providing the capability to package waste for disposal prior to shipment to the repository. The BRC recommended that the interim storage facility include facilities to monitor and characterize waste packages over time and to have or develop the capability for making sure that the waste meets transportation criteria over time. In short, the BRC viewed a storage strategy as important, independent of the siting and timing of geologic repositories.

The Administration supports the development of a pilot interim storage facility with an initial focus on accepting used nuclear fuel from shut-down reactor sites. Acceptance of used nuclear fuel from shut-down reactors provides a unique opportunity to build and demonstrate the capability to safely transport and store used nuclear fuel, and therefore to make progress on demonstrating the federal commitment to addressing the used nuclear fuel issue. A pilot would also build trust among stakeholders with regard to the consent-based siting process and commitments made with a host community for the facility itself, with jurisdictions along transportation routes, and with communities currently hosting at-reactor storage facilities. There are reports that a number of communities are exploring the possibility of hosting a consolidated storage facility.

Beyond a pilot-scale facility, the Administration supports the development of a larger consolidated interim storage facility with greater capacity and capabilities that will provide flexibility in operation of the transportation system and disposal facilities. A larger-scale facility could take possession of sufficient quantities of used nuclear fuel to make progress on the reduction of long-term contractual liabilities, and could also accept defense wastes. In parallel, as supported in the Administration's Strategy and recommended by the BRC, DOE has initiated an analysis of the pros and cons of commingling civilian and defense waste.

The rationale for deploying interim storage in no way minimizes the need for a permanent disposal capability, and the Administration is committed to advancing development of both interim storage and geologic disposal facilities in parallel, even though they may become operational at different times. The development of geologic disposal capacity is currently the most cost-effective way of permanently disposing of used nuclear fuel and high-level radioactive waste while minimizing the burden on future generations. The Administration agrees with the BRC that linkage between storage and disposal is critical to maintaining confidence in the overall system. Therefore, efforts to implement storage capabilities within the next 10 years will be accompanied by actions to engage in a consent-based siting process and initiate preliminary site investigations for a geologic repository.

No matter how many facilities or what specific form they take, a consent-based approach to siting is critical to success. The Administration supports working with Congress to develop a consent-based process that is transparent, adaptive, and tech-

nically sound. The BRC emphasized that flexibility, patience, responsiveness and a heavy emphasis on consultation and cooperation will all be necessary in the siting process and in all aspects of implementation. Experiences in other countries indicate that a consent-based process—if developed through engagement with states, tribes, local governments, key stakeholders, and the public—can be successful. For example, Sweden and Finland have successfully executed programs to select a site among multiple volunteer communities. Others such as France, Switzerland, and Canada, have programs underway that appear to be demonstrating some success. DOE is currently evaluating critical success factors in the siting of nuclear facilities in the U.S. and abroad to facilitate the development of a siting process.

The Strategy highlights the need for a new waste management and disposal organization to provide the stability, focus, and credibility to build public trust and confidence. Again, there are multiple models that exist along a continuum from a government program to federal corporations—entities that report to a cabinet secretary and those that have their own board of directors that report independently to the President. Whatever form the new entity takes, organizational stability, an appropriate level of autonomy, leadership continuity, oversight and accountability, and public credibility are critical attributes for future success. Further, the authorities and responsibilities of the new organization are more important than the specific form. The Administration will work with Congress to ensure that the authorization of any new body established for this purpose provides adequate authority and leadership as well as appropriate oversight and controls.

The Administration also recognizes that providing predictable funding is critical to the success of the nuclear waste mission. The Strategy and the FY 2014 President's Budget propose a funding approach that contains three critical elements: discretionary appropriations within existing spending caps to pay for program management and administrative support costs; legislative reclassification of annual fee income from mandatory to discretionary or a direct mandatory appropriation to make dedicated funds available in sufficient amounts for multi-year projects and program activities without competing with other government priorities; and eventual access to the existing balance of the Nuclear Waste Fund in the Treasury.

Full implementation of this program will require legislation to enable the timely deployment of the system elements noted above, independent of the process to site storage and disposal facilities using a consent-based approach. The Administration supports the goal of the Nuclear Waste Administration Act of 2013 recently introduced in the Senate to establish a new, workable, long-term solution for nuclear waste management and looks forward to working with Congress to move forward on this important national issue. The constructive efforts and dedication of Senators Wyden, Murkowski, Feinstein and Alexander are deeply appreciated. In the meantime, the Administration, through the Energy Department's Office of Nuclear Energy, is undertaking activities consistent with existing Congressional authorizations and appropriations to plan for the eventual transportation, storage, and disposal of used nuclear fuel.

#### ONGOING ACTIVITIES

Since the closure of the Yucca Mountain Project in 2010, the Department of Energy has continued activities related to the management and disposal of used nuclear fuel and high-level radioactive waste as part of its Fuel Cycle Research and Development program. Initial activities were outlined in DOE's Nuclear Energy Research and Development Roadmap, sent to the Congress in 2010, and included research into the performance of high burn-up used fuel in storage, among other activities. The roadmap noted the establishment of the Blue Ribbon Commission on America's Nuclear Future and acknowledged that all research and development activities and plans outlined would be revisited and revised as needed to reflect the Commission's findings and associated Administration decisions while, at the same time, remaining consistent with existing statutes.

In December 2011, the President signed the Consolidated Appropriations Act of 2012, which provided \$60 million in funding for used fuel management and disposal activities. Specifically, the Joint Explanatory Statement accompanying the bill provided that DOE should build upon its current knowledge base to fully understand all repository media and storage options and their comparative advantages and expand its capabilities for assessing issues related to storage of spent fuel.

In its final report in January 2012, the Blue Ribbon Commission noted the need for near-term actions that can lay the groundwork for the next generation of nuclear waste policies and programs. For the most part, these near-term activities identified by the BRC were encompassed in activities already being undertaken by the Department. It included in its recommendations:

- Continuation of a research effort in used fuel and storage system degradation phenomena, vulnerability to sabotage and terrorism, and others.
- Moving forward with geologic disposal through valuable, non-site specific activities, including R&D on geological media, work to design improved engineered barriers, and work on the disposal requirements for advanced fuel cycles.
- Development of a research, development, and demonstration plan and roadmap for taking the borehole disposal concept to the point of a licensed demonstration.
- Performance of system analyses and design studies needed to better integrate storage into the waste management system, including standardization of dry cask storage systems and development of a conceptual design for a flexible federal spent fuel storage facility.
- Development of a database to capture the experience and knowledge gained from previous efforts to site nuclear waste facilities in the United States and abroad.
- Completion of policies and procedures for providing technical assistance funds to states, tribes, and local jurisdictions which are likely to be traversed by transportation shipments.

The Administration's Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste recognized the ongoing research and development, analytical and planning activities already underway and endorsed them as laying the groundwork for implementation of the Strategy. DOE is currently undertaking activities to address these recommendations. For example, DOE is working with industry to conduct R&D (lab, field, and modeling) to further develop the technical basis for continued safe storage. Specifically, a key element of the storage R&D is to implement, on a cost-sharing basis with industry, a full scale storage demonstration project focused on getting field information on the long term storage of high burn-up fuel. This demonstration project was awarded in April.

DOE is also working to analyze the characteristics of various geologic media that are potentially appropriate for disposal of radioactive waste. This research will help provide a sound technical basis for a repository in various geologic media, and will help provide confidence in whatever future decisions are made. To leverage expertise and minimize costs, DOE is taking advantage of existing analyses conducted by other countries that have studied similar issues.

With regard to borehole disposal, DOE is developing a draft plan and roadmap for a deep borehole project. The project would evaluate the safety, capacity, and feasibility of the deep borehole disposal concept for the long-term isolation of nuclear waste. It would serve as a proof of principle, but would not involve the disposal of actual waste. The project would evaluate the feasibility of characterizing and engineering deep boreholes, evaluate processes and operations for safe waste emplacement and evaluate geologic controls over waste stability.

In FY 2012, DOE initiated system-level analyses for the overall interface between at-reactor consolidated storage and geologic disposal and the opportunities for use of standardized canisters, including the development of supporting logistic simulation tools to better understand aging of fuel and loading requirements. In addition, DOE acquired services of the industry to develop design concepts for a generic interim storage facility and in FY 2013 is evaluating their submissions.

A database on experiences with siting radioactive materials facilities both in the U.S. and abroad has been developed that will be a public resource and will inform the planning process. A report on the findings of the initial studies and an examination of case studies in the database of siting experience is being prepared and will be available this summer.

For transportation planning and engagement with stakeholders, DOE has convened a Working Group comprised of Federal, State, and Tribal governmental representatives to address training-related issues and develop a revised policy for preparing public safety officials along proposed transportation routes, as required by Section 180(c) of the Nuclear Waste Policy Act. The Working Group will analyze and, when possible, make recommendations on specific issues related to Section 180(c) policy and implementation.

The Department has also initiated studies to evaluate whether defense and commercial wastes should be "commingled" in a single repository. While it has been the U.S. policy since 1985 to commingle these wastes, the Strategy stated that the commingling of these waste would be the subject of analysis going forward, consistent with the urging of the BRC.

## THE PRESIDENT'S FISCAL YEAR 2014 BUDGET REQUEST

The President's FY 2014 budget request includes a multi-part proposal to move ahead with developing the nation's used nuclear fuel and high-level waste management system outlined in the Administration's Strategy. First, it lays out a comprehensive funding reform proposal that includes three elements. Ongoing discretionary appropriations within existing funding caps are included to pay for planning, management, and regulatory activities. In addition, the proposal includes reclassification of existing annual fees from mandatory to discretionary or a direct mandatory appropriation, and eventual access to the balance of the nuclear waste fund. Included in the amounts that would be made available under this proposal are defense funds to pay for the management and disposal of government-owned wastes within the overall system. These elements, in combination with anticipated offsets result in relatively modest pay-as-you-go cost of about \$1.3 billion. Significantly, the Administration proposes \$5.6 billion in spending to implement the Strategy over the next 10 years within the framework of this funding proposal.

Second, for the first time, the budget baseline reflects a more complete estimate of potential future costs of the liability associated with continuing to pay utilities based on the Government's liability for partially breaching its contract to dispose of used nuclear fuel. The cost of the Government's growing liability for partial breach of contracts with nuclear utilities is paid from the Judgment Fund of the U.S. Government. While payments are extensively reviewed by Department of Energy, and must be authorized by the Attorney General prior to disbursement by the Department of the Treasury, as mandatory spending they are not subject to Office of Management and Budget or Congressional approval. Previously, judgments were recorded in the budget largely after the fact, but until now the budget has included only a partial estimate of the potential future cost of continued insufficient action. To improve budget projections, the baseline for the Judgment Fund in the FY 2014 budget request reflects a more complete estimate of potential future cost of these liabilities. By reflecting a more complete estimate of the liability payments in the baseline, costs over the life of the nuclear waste management and disposal program would eventually be offset (for the purposes of scoring against the baseline) by reductions in liabilities as the Government begins to pick up sufficient waste from commercial sites.

Third, the President's budget includes funding for the Environmental Protection Agency (EPA) to begin the review and update of generic (non-site specific) disposal standards to help guide the siting of used fuel and high-level waste facilities. Current EPA standards for all sites other than Yucca Mountain are defined in 40 CFR Part 191, "Environmental Radiation Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes," and were last updated in 1993. The Administration agrees with the BRC that generally applicable regulations are more likely to earn public confidence than site-specific standards. In addition, having an updated generic standard will support the efficient consideration and examination of multiple sites.

Finally, in FY 2014, DOE's Office of Nuclear Energy will support the Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Waste by funding activities to lay the ground work for the design of an integrated waste management system as well as related research and development work. Specifically, in the used nuclear fuel research and development area, the Department will work with industry on conducting investigations into the extended storage of used nuclear fuel and the transport of such fuel under a range of cask loadings. In addition, ongoing research into alternative disposal environments, including modeling, experiments, and field tests will be continued. Finally, the Used Fuel Disposition program will undertake R&D activities to further the understanding of hydro-geochemical, physical geology, structural geology, geophysical state and engineering properties of deep crystalline rocks for deep borehole disposal.

In the management and disposal system design area, DOE will conduct system architecture and operating evaluations of various used fuel management systems, including consolidated and/or regional storage facilities, various repackaging scenarios and acceptance rates. DOE will also update transportation and storage system models, and develop cost databases. Further, DOE will conduct analyses for initial used fuel shipments from shutdown reactor sites including staffing, routing, procurement, operations, security, quality assurance, emergency response, training, logistics, site servicing, mobilization, operational readiness, and site servicing schedules. Work will also continue on an evaluation of standardized containers for storage, transportation, and potentially disposal. Outreach activities to stakeholders on transportation planning will also continue. When the new management organization is established in legislation, it will be able take over many of these activities.

## CLOSING

The Administration looks forward to working with this Committee and other Members of Congress on crafting a path forward for used nuclear fuel and high-level waste management and disposal. This progress is critical to assure that the benefits of nuclear power are available to current and future generations. I will be happy to answer any questions you may have.

The CHAIRMAN. Dr. Moniz, thank you very much.

I think you know that the sponsors of the legislation made the judgment right at the outset that we have to have a permanent disposal process for nuclear waste. At the same time, and this was reaffirmed both at Hanford and at Fukushima, our sense was that there's going to be a lot of spent fuel and nuclear waste that is going to continue to sit in temporary storage for decades to come before it goes to a permanent repository and that is the case wherever the repository is located. The current storage pools and the tanks simply weren't designed for long-term storage.

So what we thought to do in the bill is to create a new program for the Federal Government to build new storage facilities that are linked to continued progress on siting a repository.

Do you agree with the judgment that our country needs a Federal policy that includes both storage and disposal in a way that makes sure that storage doesn't become the de facto permanent solution?

Secretary MONIZ. Thank you, Mr. Chairman, for the question.

I certainly agree that, as did the Commission and does the Administration strategy, that the parallel tracks of storage and disposal facilities are both essential and frankly, are both needed in a comprehensive system. I think the S. 1240 has presented a specific and I think, again, workable approach to this question of linkage of the two pathways.

The CHAIRMAN. Now, the Senators involved and Senator Heinrich and others have made very constructive contributions with respect to the debate about how tightly linked the two programs, storage and disposal, ought to be. Now the bill, as you know, calls for proceeding right away with storage for what the sponsors have deemed to be priority waste. That means for example, the spent fuel of decommissioned reactors would get priority access for Federal storage. But under our bill not every reactor gets priority access. Additional storage for non priority waste is tied to progress on the permanent repository.

In your judgment and again, we appreciate we're just talking about the concepts. Is this the right distinction to draw? Any thoughts you have about the linkage that's been proposed in the bill being sufficiently strong to assure progress on the repository will proceed in parallel with storage?

I think those two questions together.

Secretary MONIZ. Yes.

So first of all, I personally agree. This was again, clear on the Commission, that starting out with moving fuel from our shut down reactors is something that, hopefully, we can accomplish expeditiously. These sites really could be returned to other uses if we could move this fuel. I think, again, S. 1240, lays out a fast track to get that pilot facility going.

I think this will also create, if done again in our consent based approach, a lot of confidence. Again, it's moving down the track. Then I think the bill, as you've described, then moves into this, the linkage situation for future facilities. Again, I think the Administration strategy is completely consistent with that approach.

The CHAIRMAN. Your thoughts, Mr. Secretary, about the idea of a new agency. I think it's fair to say that a fair number of us were ambivalent about the whole proposition. Here we are in a time of sequester. The Blue Ribbon Commission made that recommendation. There's a little bit of an irony here.

I don't want to make you uncomfortable because you're arriving in an agency and I don't want you to say anything bad about your agency. But there was concern that keeping DOE in charge of the Federal nuclear waste program was not the way to go.

So what are your thoughts with respect to transferring the program to a new agency and whether that kind of approach with the independent oversight board is the right way to go?

Secretary MONIZ. Again, the Administration strategy is pretty clear in stating that we do need a new organization. There are many organizational approaches. The S. 1240 has certainly laid out a potentially workable solution.

But we feel, again, the keys really are the authorities that go to this agency.

Second, something that was pointed out in the Commission's report, but also in another report that I was part of some years ago and this goes to Senator Murkowski's comment on transportation, the National Academy Report on Transportation of spent fuel and high level waste some years ago. The point was made that this is a multi-decadal activity. It draws upon, ultimately the waste fund, for example. We feel that a dedicated organization that manages all aspects of the back end is the right way to go.

The CHAIRMAN. Let me ask another question real quickly just because of its importance to the Pacific Northwest.

As you know, Mr. Secretary, today Defense and civilian high-level waste are stored separately. But the plan is to dispose of them in the same repository. The proposed repository, Yucca, was not designed to be big enough to dispose of all the civilian spent fuel, much less the tens of thousands of canisters of high-level waste expected to be produced at Hanford and other Department of Energy sites.

On the other hand in his testimony today, Mr. Fertel, from the Nuclear Energy Institute, suggests that spent fuel from the Navy and the Department of Energy could be stored in the same consolidated storage facilities as commercial spent fuel.

The bill would allow you, as Energy Secretary, to revisit the way in which Defense and civilian wastes are stored and disposed.

Would you agree that it is time to take another look at this issue, Mr. Secretary?

Secretary MONIZ. I certainly do, Mr. Chairman.

Again, the outcome of a study is different from doing the study. I agree with Mr. Fertel that technically these wastes could be combined.

However, there may be advantages to not having them combined certainly since the decision was made to comingle there have been

quite a few changes such as agreements. I note with Idaho, for example, in terms of moving spent fuel and waste with somewhat different conditions, Defense waste with different conditions.

Second, I would note that it is true that there are differences in how spent fuel and waste are packaged. There are differences in that the much of the Defense waste came from so called low burn up activity versus the higher burn ups in commercial fuel.

So I think the issue is to study this. I will say that we have launched that study. Hopefully sometime this fall we'll be able to come back with how we balance the various factors.

The CHAIRMAN. That would be very helpful to be able to get that this fall. We do intend to consult with Mr. Fertel and the Institute and others and that would be part of the debate.

Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman.

Mr. Secretary, you've answered so many of these questions that are, kind of, key to the construct of this legislation.

One of the things that we were wrestling with for quite some time was this issue of the linkage. You've addressed that with the Chairman here. But as we have built this bill, we have a 10-year window effectively to get a storage facility up and running. There's some discussion, I use the word aggressive in my opening statement.

Do you believe that given the priority given to the stranded fuel that 10 years is enough time, sufficient time, to get a storage facility up and operating given the infrastructure needs that we have?

Secretary MONIZ. I do believe it is quite feasible. It's aggressive, but quite feasible.

But of course, this will depend upon having the statutory authorities available soon, hopefully this year or next year at the outside.

That would allow us then to be very active. We, I should say, we, DOE, or of course, in all cases potentially the new nuclear waste agency, if those responsibilities novate. But to really go out there and help support communities, who may want to come forward in this consent based process and provide them the technical assistance that they will need to go to the next step.

Then, as you quoted earlier, our program estimates that to actually then establish the first pilot interim storage facility could be a 6-year project.

So I think if we all take our steps smartly, I think we could do it in 10 years.

Senator MURKOWSKI. As you point out our legislation is neutral as to the site location for the facilities or for the repositories. Is it your belief that given what we currently have with our used nuclear fuel and what we will anticipate in the future, that we will need more than one repository?

Secretary MONIZ. Clearly if we look at the Nuclear Waste Policy Act guidance of 70,000 metric tons. We will definitely need the capacity for more than that.

Now clearly a lot of this will depend upon the trajectory of nuclear power. But our view is that we should certainly be enabling, at least, a future in which nuclear power may grow substantially.

If that happens I would guess we will almost certainly need more than one repository.

As I said, it will depend upon the arrangements worked out with the communities who come forward in terms of how many there will be.

But if nuclear power grows to a level, even if maintaining market share of 20 percent would almost certainly, I think, drive us to more than one repository.

Senator MURKOWSKI. Now when I made comment about the transportation aspect of how we're dealing with our nuclear waste, you were, kind of, nodding your head in agreement.

Secretary MONIZ. Mm-hmm.

Senator MURKOWSKI. So you would not disagree with the numbers that I have outlined in terms of the numbers of years, a multiyear process, to really get us to the place where we can even move these casks to storage.

Secretary MONIZ. Yes, it will take a quite a while to get going certainly for a full bore program.

I believe you quoted the NEI number for the number of movements that we've had so far in this country, several thousand. I might also add and this goes back, I'm relying on my memory from the National Academy report on transportation a few years ago.

But if one looks at Europe there have been, roughly speaking, as many movements of spent fuel as there will be in the entire campaign of moving all the spent fuel we currently have. That's had a very good safety record.

So I think there's a lot of evidence for being able to manage this transportation program. Clearly, it's got to be timed very, very carefully. There are issues of truck versus rail there. But it's a big logistical enterprise. It will take some time. It will take a dedicated organization, I think, to manage that.

Senator MURKOWSKI. Let me ask you one more then. This speaks really to, I think, the future development and growth of the nuclear industry within this country resolving the back end of the nuclear fuel cycle and other nuclear related endeavors. If we can get this resolved how do you see new development of new nuclear plants moving forward?

Most particularly, the small modular reactors which many of us are very interested in trying to advance.

Secretary MONIZ. I think quite clearly, we need to solve the back end to have any form of nuclear power going forward. Small modular reactors will need storage and geologic repository just as our current reactors do. They may have different fuel forms depending upon their design. But we will certainly need this back end resolved, for sure.

Senator MURKOWSKI. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Murkowski.

Senator Heinrich.

Senator HEINRICH. Thank you, Chairman and Ranking Member Murkowski for holding this hearing today.

First let me say I agree, we need to move forward on nuclear waste in this country. At the same time I think we also need to make sure that this legislation doesn't just lead to short term progress but will get us all the way through to a geologic, operating

geologic repository for permanent disposal. I hope we can work together to make sure that this legislation will get us there.

I have a few concerns. I want to outline those.

One is that we're setting up a process potentially where the interim storage facility could end up being permanent because we don't have a clear link between creating temporary storage and eventually siting a repository for spent fuel and high level waste.

The other concern I have is that instead of focusing on interim solutions, the legislation should assure that future Congresses and future Administrations sustain the political will and the financial will for the next 30 or 40 years that is going to be required to open a geologic repository.

The BRC was clear. Communities must have confidence that this time the government will actually meet its commitments to dispose of waste in a geologic repository. I agree with that conclusion. Certainly look forward to working with members of the committee to achieve that goal.

So that leads me to my first question, Secretary Moniz.

Your written testimony says that you agree that linkage between storage and disposal is critical to maintaining confidence in the system. The Commission's final report actually said quote, "A program to establish consolidated storage will succeed only in the context of a parallel disposal program that is effective, focused and making discernible progress."

What in practical and specific terms did you and the Commission mean by establishing positive linkages between building storage facilities and opening the permanent geologic repositories we're talking about?

Secretary MONIZ. In the Commission context I would say—and it's very similar to the strategy of the Administration—the feeling is that first of all some communities may, of course, come forward with the idea of having both storage and repositories, others only storage or only repository.

For those coming forward for a storage facility the view was simply that there has to be confidence that there's going to be a pathway to geologic disposal. So quite simply that's what's needed.

I think then we do believe that the initial storage facilities can be established more rapidly, realistically, from where we are today. The Administration plan lays out timelines. So it's very important that as we move out that we have an aggressive program for moving out on the repositories at the same time as storage is being implemented.

That will require looking at different kinds of geologies, characterizing potential sites, working with communities interally and flexibly.

Senator HEINRICH. But how would you describe that linkage because given the fact that we've spent 30 years and gone through this with Yucca Mountain. My concern is that there may be communities that may be interested in a storage facility but not a permanent repository.

Secretary MONIZ. Mm-hmm.

Senator HEINRICH. If we move so aggressively forward on storage and we don't address the steps needed to get to a permanent geological repository those communities could end up being de facto

permanent storage. That, I believe, is someplace we shouldn't be going.

So, how do we make sure that these things are sequential and that there is a direct linkage that gives confidence to those communities that temporary storage is not going to become permanent storage rather than permanent disposal?

Secretary MONIZ. Again, I think the issue is establishing that program and funding it well moving out. Again, I would say in S. 1240 there is this issue of tying the commitment of resources to repositories for going forward with additional storage. So I think we have to hold to that.

I think we need to have an aggressive program on repositories. Also I might say this is something again, that the Commission emphasized. We also should take a new look at things like deep bore holes as a different kind of geological isolation medium.

So I think we really just have to pick up the game and look at these geological isolation issues aggressively. I do want to repeat a statement made in the Commission's report. That is that there is fundamentally a view in the scientific community that long term geological isolation is sound.

We have to implement the programs appropriately.

Senator HEINRICH. Thank you, Secretary.

Mr. Chair.

The CHAIRMAN. Thank you, Senator Heinrich.

It seems very fitting that our next Senator in order of appearance is Senator Alexander. I'm not going to put any words in anybody's mouth and let Senator Alexander make his points. But I think Senators know that this issue of linkage is one that has consumed as much discussion as perhaps any other. It obviously will be one we'll continue to have.

Senator Alexander.

Senator ALEXANDER. Thanks, Mr. Chairman.

I want to continue with Senator Heinrich asked an excellent question and one I hope we'll continue to discuss.

I want to thank you and Senator Murkowski, Senator Feinstein and the Secretary for helping with the bill.

Mr. Secretary, I learned a lesson as Governor. We were stuck on locating a prison. Nobody could locate one. I changed it around. Said, OK, let's have a competition.

We were able to locate 3 in the next 5 years because we weren't forcing it down the throat of a community. We were saying if you want one, come apply for it and tell us under what conditions you'll take the prison.

Now am I correct that as you read this legislation a new long-term repository could only be located with the consent of the State?

Secretary MONIZ. Correct. We believe it's got to be both local and State.

Senator ALEXANDER. Consent.

Local and State.

That was—

Secretary MONIZ. Tribal if appropriate.

Senator ALEXANDER. It would be appropriate to say, I think, that that was a main thrust of the bipartisan commission.

Secretary MONIZ. In my view, that was the most important recommendation of the bipartisan commission.

Senator ALEXANDER. It's a part of the Administration's strategy? Secretary MONIZ. Correct.

Senator ALEXANDER. So that means if New Mexico or Oregon or Alaska or Tennessee don't want one of these repositories, we won't—or Nevada.

[Laughter.]

Senator ALEXANDER. We won't have one.

Is that correct?

Secretary MONIZ. Under this that's what consent based means.

[Laughter.]

Senator ALEXANDER. Now going to Senator Heinrich's excellent question about linkages. As I understand your answer to Senator Wyden, you said that the so called linkage along parallel tracks. The idea that we would be going to a repository long term and the consolidationsite, short term would go along parallel tracks. But they need to be linked and that the language in this legislation, in your opinion, was sufficient minimum linkage.

Is that correct?

Secretary MONIZ. Yes. As I said I think it's quite workable.

Senator ALEXANDER. But would you not agree that it is only minimum linkage. Let's say that a New Mexico or Nevada or Tennessee community wants a short term consolidationsite. But we don't want it to turn into the next Yucca Mountain.

We can negotiate our own linkage, can't we?

Secretary MONIZ. Sure.

Senator ALEXANDER. I mean, we can come to the Department of Energy and say in order to make sure that our short term site doesn't become a repository we won't take it unless we negotiate with the Federal Government these additional requirements.

Secretary MONIZ. Yes. The Administration strategy includes the idea that we need to retain the flexibility for how linkage is implemented in individual proposals.

Senator ALEXANDER. So the Governor or the community might create its own linkage which might be in addition to the minimum linkage provided.

Secretary MONIZ. That's all in a negotiation and consent based process.

Senator ALEXANDER. Let me shift gears a little bit to what would happen if we don't have nuclear power. As I understand it about half our nuclear capacity, the licenses on the plants end in 2038. You understand that?

Secretary MONIZ. That's of course, the 40-year licenses and the 20-year extensions.

Senator ALEXANDER. The combination would be about half our capacity unless renewed.

Secretary MONIZ. Correct.

Senator ALEXANDER. Would be gone in 2038.

Secretary MONIZ. Sure.

Senator ALEXANDER. I understand that's about 20 percent of our electricity production in the United States?

Secretary MONIZ. Almost. Yes.

Senator ALEXANDER. About 60 percent of our carbon free electricity?

Secretary MONIZ. Agreed.

Senator ALEXANDER. I know you're concerned about the effect of carbon production on climate change. What would be the effect if in 2038 suddenly half our nuclear capacity was gone? What would be the consequences to the United States?

Secretary MONIZ. Again, my commitment is to a low carbon economy.

Senator ALEXANDER. Right.

Secretary MONIZ. We do have multiple technologies, nuclear, carbon capture and sequestration, potentially at large scale and of course, renewables. In my view it's all of the above.

Senator ALEXANDER. But nuclear is a base load.

Secretary MONIZ. The job is much harder if we don't have all—

Senator ALEXANDER. The major base load are coal, gas and nuclear, correct?

Secretary MONIZ. Correct, and hydro in certain parts of the country.

Senator ALEXANDER. Hydro is 6 or 7 percent of the total. But it would be substantial problem, would it not?

Secretary MONIZ. Yes.

Senator ALEXANDER. Would it not be both in terms of our capacity to have clean, cheap electricity in the United States if that did happen. If we do not solve this problem of where to put used nuclear fuel we run the risk, do we not, of not being able to build new nuclear plants.

Secretary MONIZ. Yes. In particular, of course, different State laws have issues with regard to so called waste confidence rulings, etcetera. So it would certainly be a major complication.

Senator ALEXANDER. Right.

So and my last question is something you said. But one way to say it is this, would you agree—well you said this and that the legal capacity for Yucca Mountain is 70,000 metric tons.

Even if it were to be over the most eloquent and vigorous opposition of my friend from Nevada, if for some reason we're going to be filled up with all of the commercial used nuclear fuel we have today. It would be about full. So we would therefore need, at least, one more new repository.

Is that not what you said?

Secretary MONIZ. With the assumption that the current plants are going to run their lifetimes.

Senator ALEXANDER. Yes.

Secretary MONIZ. We are going to be way over 70,000 metric tons.

Senator ALEXANDER. So it would be fair to say that whether you're for Yucca Mountain or against Yucca Mountain that one could be for a bill, one should be for a bill that finds some reasonable way to create new repositories and new consolidated sites on a parallel track as long as they're consent based and can't be crammed down the throat of a host community or State which is perfectly free to negotiate its own linkage to make sure that doesn't happen.

Secretary MONIZ. That is core of the Administration position and of S. 1240 as well.

Senator ALEXANDER. Thank you.

The CHAIRMAN. Senator Franken.

Senator FRANKEN. Thank you, Mr. Chairman. Thank you, Mr. Secretary.

In my State this issue directly affects Prairie Island Indian Community. Some members live within or just 600 yards from where the fuel is, the spent fuel sits in dry casks. They'd like to see this removed. It's not the best use of land. It was never intended for long term storage.

So I support the long term solution of this problem. I have a number of questions.

You talk about in the end a repository or multiple repositories for disposal. What is the distinction between storage and disposal in terms of, I guess, disposal is a permanent solution, but is it just storage in a permanent repository? Is that what we're talking about? Is that disposal versus storage?

Secretary MONIZ. Of course, yes. I mean the difference clearly is being 1,000 feet below ground for disposal.

Senator FRANKEN. So how many—

Secretary MONIZ. I think the assumption has always been, but again this is a question of design of the next repositories. It's something that has always been that there would be a period of retrievability from an underground storage site or disposal site and that ultimately upon monitoring, etcetera, this would be a policy decision to be made later.

One could, in effect, assume like it's kind of closed up. Whereas storage, we're talking about above ground, typically dry cask storage in appropriate containers.

Senator FRANKEN. How many geological formations are candidates for this around the country? I mean, in other words are we looking at a, you know, just a whole bevy of these or is this, I mean, what are we looking at?

Secretary MONIZ. In the original studies of the National Academy going back decades there were multiple geologies proposed. If you look at Europe where they're moving forward, it's in hard rock. In Scandinavia it's in clay.

In France, granites, salts, multiple geological—

Senator FRANKEN. It's almost an embarrassment of riches in terms of things—

Secretary MONIZ. There has to be specific site investigation and understanding of groundwater movements, etcetera.

Senator FRANKEN. Yes, and consent.

Secretary MONIZ. Yes. Yes, and incentives.

Senator FRANKEN. That too.

In terms of transporting waste you talked about how Europe does it. So then what do they do? Do they do it by rail mainly or by truck or how?

Secretary MONIZ. There's quite a bit of rail. In fact the Academy report several years ago recommended going toward rail as a principal mode. But clearly it has to be multimodal. You would certainly need some trucks, some barges. It's that system design that we need.

The Nuclear Energy Office at DOE has launched a number of transportation studies over these last years. But once we get to this stage, in some years, of major movements it will require substantial planning and systems integration.

Senator FRANKEN. Which would come first the choice of the sites or the transportation, you know the basic—

Secretary MONIZ. For example.

Senator FRANKEN. Kinds of plants.

Secretary MONIZ. If one starts with the so called pilot facility, let's say a facility scaled to accept the spent fuel from the 12 or so shut down reactor sites. It's a relatively small amount. I would assume that rail would be the main mode, at least in that initial phase.

Senator FRANKEN. In the experience of Europe have there been any incidents? Have there been any problems?

Secretary MONIZ. I am not aware of there having been any major incidents at all. I admit I'm out of date on that because I was on that committee quite a few years ago and I haven't really examined it.

But I'd be happy to get back to you on that.

Senator FRANKEN. Sure.

[The information referred to follows:]

According to the World Nuclear Association (WNA), since 1971 there have been over 7,000 shipments of used nuclear fuel transported in Europe, totaling approximately 81,500 metric tons (MT). About half of this inventory has been shipped from European reactors to reprocessing facilities at La Hague, France. Another 30,000 MT were shipped within the United Kingdom to the reprocessing facility at Sellafield, England. Also included in the total are more than 7,000 MT shipped to La Hague and Sellafield from Japan. In addition, Sweden has shipped 4,500 MT by vessel to its centralized storage facility, and continues to make 80 or more shipments per year. TN International, the AREVA subsidiary responsible for shipping used fuel, reports that over 200 shipments per year to La Hague are occurring from 58 reactors in France and others throughout Europe. These shipments have been made using rail, truck, ship, and combinations thereof.

WNA states that these shipments occurred "over many million kilometres with no property damage or personal injury, no breach of containment, and very low dose rate to the personnel involved." Traffic accidents and incidents involving used fuel shipments have occurred, as they have in the United States, but none resulted in any release of the cask contents.

There have been a small number of incidents where loaded casks were found to have surface contamination levels in excess of the regulatory limits. A recent incident involved a cask of used fuel leaving the Blayais nuclear power plant in France in December 2011, when a survey conducted during transfer of the cask from a truck to a railcar near the plant detected radiation levels above allowable limits. A formal investigation found that "the event had no real consequences to the personnel, the environment or the safety of the installation." This finding is consistent with other investigations involving surface-contaminated casks that found no harmful radiological consequences.

#### *Sources*

- Autorité de Sûreté Nucleaire (France's nuclear safety authority), Experience Feedback on Transport of Radioactive Material in France, 2012
- National Academies Press, Going the Distance: the Safe Transport of Spent Nuclear Fuel and High-Level Radioactive Waste in the United States, 2006
- Catherine Shelton, TN International, A Unique, Proven Used Fuel Transportation Experience (presentation to DOE's Office of Nuclear Energy, May 29, 2013)
- World Nuclear Association, Transport of Nuclear Materials, July 2011

Senator FRANKEN. I'll bet you if there had been a major incident, you would be aware of it.

Secretary MONIZ. Actually Mr. Fertel of the next panel might have the answer.

Senator FRANKEN. OK. OK. Thank you very much.

Yeah, thank you, Mr. Secretary.

Thank you, Mr. Chairman.

Secretary MONIZ. Thank you.

The CHAIRMAN. Thank you, Senator Franken.

Our next Senator is Senator Risch.

Senator RISCH. Thank you, Mr. Chairman.

Secretary Moniz, thank you for coming today. You and I had a lengthy discussion about the state of the law when you came to see me.

Secretary MONIZ. Mm-hmm.

Senator RISCH. Regarding the fact that we have a law that clearly designates where the permanent storage is, your staff called my office just recently in preparation for this hearing asking whether I was the one that you had the discussion with. So I'm assuming you've had some time to think about this.

As you know when we talked I'm troubled by the fact that we have, we're a Nation of laws. Whether we agree with the law or not when a law is passed that's pretty much the way it is.

The executive branch has commanded to execute the laws that by our Constitution is commanded to execute the laws that the legislature passes. The executive branch indeed has commanded to obey court orders when a court orders something.

What we have here is a situation where we have a law that identifies Yucca Mountain for what it is. Whether you agree or disagree it is the law. But yet for some reason nobody seems to care.

I mean, for instance the Commission on which you served was designated to do something other than what the law indicated. But in any event we go around the world criticizing other countries who don't obey their own laws that they're not nations of laws. We have this law.

So with all due respect to my good friend from Nevada, we have this law. I've read the report. The report is, as you suggest, or we're waiting for a stampede of people to show up and volunteer to have this storage facility in their State.

So far the crowd hasn't shown up. Indeed I'm not aware of anybody who has shown up and raised their hand and said this is what we want.

So where do we go if indeed no one does step up?

Secretary MONIZ. First of all we expect that there will be a number of communities coming forward with interest. It is——

Senator RISCH. Have you had any inquiries?

Secretary MONIZ. We are not at a position where we can enter into that level of discussion. But there have been——

Senator RISCH. Has anybody even suggested that maybe they'd be interested?

Secretary MONIZ. Absolutely.

Senator RISCH. Who would that be?

Secretary MONIZ. I really cannot discuss that. I think the communities would have to speak for themselves.

Senator RISCH. I'm not asking the communities. You're here.

Secretary MONIZ. Yes.

Senator RISCH. Who has contacted you?

That's not classified information.

Secretary MONIZ. No one has contacted me personally.

Senator RISCH. Alright.

Secretary MONIZ. I would say—

Senator RISCH. What states were you referring to when you gave that answer?

Secretary MONIZ. I really am, Senator, with all due respect, I really cannot go there. Let's say there are media reports in which a number of communities have expressed interest.

Senator RISCH. Can you recite the media reports then for us.

Secretary MONIZ. I believe there was one recently in Mississippi, for example, that expressed interest.

Senator RISCH. How many of those have you seen?

Media reports with people expressing interest?

Secretary MONIZ. I would say published media reports, small number. I would be hard pressed to remember which ones they were.

Senator RISCH. Small being in the low single digits?

Secretary MONIZ. Single digits, yes. Yes.

Senator RISCH. Alright. Let's go back to my question.

Suppose we don't get this consensus within a State where the legislature or the Governor or the locals, everybody is on board. Suppose that doesn't happen. Where do we go?

Secretary MONIZ. Of course for the moment we have, what I consider to be an unsatisfactory situation in terms of spent fuel being stored in many, many locations. That's not been suggested as unsafe, but it's not a very good way to run the business.

Senator RISCH. I think everyone agrees with you.

But the question is what's the alternative?

I read the report. I read that you're hoping you're going to get this interest in this and people coming forward. You know where I'm headed here.

I mean, we've got a law. At what point in time do we say, OK, there's nobody of interest. We're going to go back to the law.

When do we do that?

Secretary MONIZ. First of all as you are quite aware there is litigation going on right now in which we, the Department of Energy, are not a party to that litigation. When that is resolved we will see what the directives are and go from there.

But again, as we have seen by experience in the last 20 years, it's not workable without State consent. There are many things that need to be done by the Congress and by the State to make it work. Let's face it the default option is a highly distributed storage.

Senator RISCH. That is your default.

Secretary MONIZ. It's not my default. That is the ground truth. That is the ground truth.

Senator RISCH. That is the default option.

Secretary MONIZ. That is the ground truth.

Senator RISCH. At what point do we say, OK we're there. This is the ground truth that's now coming into play or is that where we are now?

Secretary MONIZ. What I'm certainly hoping about is that we have the authorities from Congress, as in S. 1240, to move forward

with this consent based approach to pursue the parallel tracks of storage and disposal. This is a system which I think has an excellent chance of, certainly a much better chance for sure, than our current prescriptive approach.

Senator RISCH. I appreciate your optimism. Of course everyone wishes you well in that regard. But the question I have again is at what point are we through with searching for a single permanent storage facility?

Secretary MONIZ. We will start the process of establishing the new system once we have the authorities from Congress.

Senator RISCH. OK.

What do you thinking that once you start? Ten years? Fifteen years? Twenty years?

Secretary MONIZ. As we've said, I'm optimistic. It's a hard push. But I think within 10 years we could have a first storage facility operating.

Senator RISCH. My time is up. Thank you very much, Mr. Chairman.

The CHAIRMAN. Senator Risch, thank you. We're going to continue this discussion, you know, obviously. It seems to me if you can't find a volunteer it stays where it is. I think we'd all say that's unacceptable.

As of today the best people in the country, the people who are most knowledgeable about these issues believe that we can have a consent-driven approach. So I think this debate is going to continue. I think your question is a valid one.

Senator RISCH. Mr. Chairman, we all hope you're right. As you know, Idaho has an agreement with the Department of Energy as a given date on which the material has to be moved. That's why I'm very interested in seeing that the date is reached because it can't stay where it is in Idaho per the agreement between the State of Idaho and the Federal Government.

The CHAIRMAN. Having it not stay where it is, I think, is something that we'll have widespread support. So we will continue this and I thank you.

Senator Barrasso is next.

Senator BARRASSO. Thank you very much, Mr. Chairman.

Mr. Secretary, welcome back.

Secretary MONIZ. Thank you.

Senator BARRASSO. I'd like to discuss the impact of this legislation, if enacted, what it would have on Yucca Mountain.

The Nuclear Waste Policy Act requires the Department of Energy to take Title II, collect and dispose of our Nation's spent nuclear fuel. Federal law designates Yucca Mountain as the site for permanent geologic repository. The American people have spent about \$15 billion developing a primary repository at Yucca.

The 2010 Department of Energy tried to withdraw its license application for Yucca pending at the Nuclear Regulatory Commission. NRC's review of this license application is now subject to a lawsuit before a Federal court.

We're now considering a bill which would transfer many of the Department's nuclear waste management responsibilities to a new agency and terminate the Department's remaining nuclear waste management responsibilities. So I'm concerned about the effect

that this bill might have on the Department's license application for Yucca Mountain.

So the question is if Congress passes this bill what would be the impact on the Department of Energy's license application for Yucca Mountain and the NRC's review of that application?

Secretary MONIZ. Senator, clearly as you've said, the litigation is ongoing. We don't know the results. Certainly, again, as I've said to Senator Risch before, we believe in following the law.

That judgment, when it comes, if it directs the NRC to resume the license review, all I can say is the Department of Energy will do what it is called upon to do, subject to having the funds, of course, to do it. So we'll go forward with that if that's what the court rules.

Senator BARRASSO. Are you saying that then the Administration wouldn't argue that the bill has an impact on the NRC's review of the Yucca license?

Secretary MONIZ. I guess personally I don't see any strong connection there. As I've said and others have said, the Blue Ribbon Commission has said, we need a system, first of all, that has storage and repositories in parallel. We need them both for a system that has the appropriate flexibility and also it's a system which, in our view, can accelerate waste acceptance.

So we need that in any case.

Senator BARRASSO. So could I ask about a consent based process for siting of permanent repository for nuclear waste?

The bill requires the Federal Government obtain the consent of the local community and the State prior to selecting a site for the repository. This requirement is consistent with the recommendations of the Blue Ribbon Commission on America's Nuclear Future. You served on the Commission, very familiar with the report issued in 2012.

In that report the Commission explained that other country, I think such as Sweden, have been able to select a site for a permanent repository by obtaining the consent of the local community.

There's plenty of evidence to suggest that local communities throughout the country may be willing to host a repository. There's Nye County in Nevada continues to support a repository at Yucca Mountain. But I find little evidence to suggest that states would consent to host a repository.

So the Commission's report references though the waste isolation pilot plan in New Mexico. But however I understand this facility stores low radioactivity waste not high level. So, you know, kind of following on Senator Risch's question.

What, if any, evidence suggests that a State government would consent to host a permanent repository for high level waste?

Secretary MONIZ. I think we have to go out and ask for proposals.

Senator BARRASSO. Start a competition like Senator Alexander.

Secretary MONIZ. Start a competition.

Senator BARRASSO. The bill before us establishes a new Federal agency called the Nuclear Waste Administration.

The bill would transfer many of the DOE's nuclear waste management responsibilities to this new agency.

The Nuclear Waste Administration would be led by an administrator appointed by the President, confirmed by the Senate, 6 year term.

The bill would authorize the administrator to spend funds collected from ratepayers to establish interim storage facilities and a permanent repository without further appropriation from Congress.

So I understand the purpose of establishing a new agency is to ensure that the entity responsible for this nuclear waste management would be insulated from political pressure from the White House and from Congress.

To me it's unclear why we need to establish another Federal bureaucracy and one subject to less accountability.

The bill requires the Federal Government to obtain the consent of the local community and the State prior to siting interim storage facilities and a permanent repository.

So if the local communities and states truly support the siting process why do we need to reduce oversight of nuclear waste management?

Secretary MONIZ. Certainly the intent of the Administration strategy is not to reduce oversight at all. It's just providing oversight from Congress and others with a new entity. I mean, any agency of the government has oversight. This one is organized in a somewhat different way.

Furthermore the Administration has said in its strategy that it could be quite flexible in terms of how an organization is set up. But the Commission and the Administration's strategy both feel that certainly a new organization is needed to provide continuity, to have the authorities, for example, of accessing the funds when they are needed.

So again, it's really a question of the authorities that are vested in this organization. As I stressed in my opening statement, has the appropriate, in italics, autonomy in order to do its job.

Senator BARRASSO. Thank you, Mr. Secretary.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Barrasso.

Senator Heller is next.

Senator HELLER. Mr. Chairman, thank you. Thanks for holding this hearing.

Secretary, thanks for being here.

Secretary MONIZ. Thank you.

Senator HELLER. Certainly appreciate and it's good to see you again. Obviously you and I have had this same conversation when you came to my office. We'll continue, I'm sure, in the future as we move on.

I am concerned that the Nuclear Waste Administration Act of 2013, of which we're talking about today, doesn't completely take Yucca Mountain off the table. I am pleased that we are discussing legislation that recognizes the need for realistic solutions. I appreciate your candor and your optimism that we can get there in the foreseeable future.

As you know Nevada is home to the proposed Yucca Mountain nuclear waste repository. I have long had serious concerns, as others in our delegation, including Senator Reid, our House members

about the safety of Yucca Mountain, the suitability of Southern Nevada as the final resting place for these spent nuclear material.

The amendment to the Nuclear Waste Policy Act of 1987 legally compelled Nevada, a State without any nuclear power plants, to bear the sole burden of long term storage of the Nation's nuclear waste. So with the stroke of a pen, objective evaluation of Yucca Mountain, at that point ceased.

Many people here know that I don't trust the IRS. I don't trust CSNA. I certainly don't trust the Federal Government to appropriately manage a repository at this site.

So I hope that my position is clear.

The CHAIRMAN. It is.

[Laughter.]

Senator HELLER. Thank you.

But I would like to shift the discussion briefly.

That is, as you know, the Department of Energy and the State of Nevada have been discussing shipments of nuclear waste from Oak Ridge, Tennessee to the Nevada test site. What I'm concerned about any plan to bring nuclear waste to Nevada, continued to be concerned about the reclassification of waste for DOE's convenience. I believe that that's the motivating factor here.

So my concern is that DOE wants a partner in the State of Nevada on activities at the test site then we need DOE to act like a partner. Let me explain what I mean by that, Mr. Secretary.

That is we need, I believe the DOE needs to be more responsible and more responsive to the Governor of the State, Governor Sandoval. I was disappointed that he had to put in repeated requests to discuss this particular issue with you. But I am grateful that that conversation did finally take place and that I hope that there are many more in the future.

Do you recall that conversation that you had with the Governor?

Secretary MONIZ. I certainly do, Senator. I would like to clarify something for the record.

After the Governor's first letter the Deputy Secretary met with him, there were considerable staff discussions. Then we had a conversation directly. We're also trying to meet in Nevada in August, although our schedules don't look like they're matching up very well.

But we will get together in August or September.

Senator HELLER. OK.

Secretary MONIZ. But I do want to emphasize the Deputy Secretary met with him in that intervening period.

Senator HELLER. I appreciate the clarification on that. I was unaware of that.

I think this discussion or this conversation that we had—well, before I go there. Give me your insight on how that conversation went with the Governor.

Secretary MONIZ. I believe he called it frank and straightforward. We want to work with the State and with the Governor, with the delegation, on this and all other issues. Obviously we have a lot of joint equities between the Department and the State.

Senator HELLER. Sure. Sure.

Secretary MONIZ. Point out that there were long discussions held. Many memos signed on specifically this particular low level waste movement.

The Department agreed to special activities for the disposal.

The Department agreed to do something unprecedented to move this in secure transports.

So we are trying to work out an agreement to allow us to move forward.

We've been encouraged. I mean, there's activity going on in terms of appropriate State officials looking at the test site. I believe going to go to Oak Ridge to look at the materials directly.

So we are working together to try to get clarification on all of these issues.

Senator HELLER. I think the way he finally put it, we agree to disagree.

What did you disagree on?

Secretary MONIZ. The issue was one of the extent to which we had the agreement of the State organizations, the State government agency, for this transport. We frankly, and I explained to the Governor that, you know, the exchange of memos was saying this works with our special precautions. That allowed us to stage the work in Oak Ridge in a certain direction.

The delay now is costing us quite a bit of money.

Senator HELLER. OK.

What I want to get out of this, Mr. Chairman, if I just can be brief is a commitment that you'll work with our Governor and have continued conversations. I think transparency in this process, critically important for people in the State of Nevada and frankly for everybody here that's asking questions and those in the audience.

Secretary MONIZ. Right.

Senator HELLER. So if I can just get that commitment from you that we can address these issues of transportation, transparency.

Secretary MONIZ. Yes.

Senator HELLER. Collaboration.

Secretary MONIZ. You have the commitment. He has the commitment. Also, I might say, it was raised where there's a discussion about potentially setting up, kind of, an ongoing working group.

Senator HELLER. Good.

Secretary MONIZ. To make sure there's not miscommunication.

Senator HELLER. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Heller.

Senator Murkowski made some important points about transportation as well, so point well taken.

Senator Scott is next.

Senator SCOTT. Thank you, Mr. Chairman.

Dr. Moniz.

Secretary MONIZ. Senator.

Senator SCOTT. Congratulations on becoming the Secretary or condolences which one does it feel like so far?

[Laughter.]

Senator SCOTT. Don't answer that question.

[Laughter.]

Secretary MONIZ. We will some other time.

Senator SCOTT. My concerns with this legislation are less about the content, though I am a bit concerned about the creating a new Federal bureaucracy, and more about why Congress is allowing DOE to continue to break the law of the land, as we know it today.

The law is very clear. Our Nation's spent nuclear fuel and Defense waste should be deposited, disposed, at Yucca. Unfortunately ignoring or failing to enforce laws that happen to be politically inconvenient is becoming a regular occurrence with the Obama Administration, even with laws they passed as we have seen recently with the delay of the employer mandate on Obama Care.

The lack of commitment by the Obama Administration to the law and the international agreement is also true of the MOX facility at the Savannah River site. This Administration has abandoned its commitment to the people of South Carolina and not only will it ultimately cost the taxpayers more money, perhaps about a billion dollars more, but this August hundreds of hard working South Carolinians could lose their jobs because of decisions by the Obama Administration.

There is simply no excuse for this Administration to back track on their commitments for political reasons whether it's MOX, Yucca Mountain or Obama Care. I understand that some might find Yucca to be political inconvenient, but that doesn't really matter. It's still the law of the land.

The nuclear industry, like any other industry, needs certainty. They need Yucca Mountain. What good are laws passed by Congress if for any reason we can decide to enforce or not enforce them?

What good are laws like Obama Care that the employer mandate continues to be pushed back which perhaps sounds good for a little while. But in the end it causes consternation and lacks certainty.

The same is true in the nuclear footprint. We continue to find ourselves finding ways out of the laws of the land as opposed to the enforcement of the laws of the land. Apparently our friends in the House, who just voted 335 to 81, to maintain \$25 million dedicated to restarting the review and construction of Yucca Mountain would agree with this position.

My question for you, Dr. Moniz, are numerous. But we have submitted these questions before on April 18, the Deputy Secretary Poneman. But we haven't had any answers in about 4 months. We're still waiting for those answers to those questions.

I have a question for you, sir.

I'd love for you to spend some time at the Savannah River site. I know you've been there before.

Secretary MONIZ. Mm-hmm.

Senator SCOTT. I'd love for you to commit to coming back and perhaps touring it with me or coming back at some time in the very near future so that we can take a look at the MOX facility.

Look at the fact that we're between 50 to 60 percent finished with the construction.

Take a look at the fact that there really are no other options for us to honor the agreement to dispose of that 34 tons of nuclear waste.

Let's take our weapons grade nuclear waste.

I think if we were in a position to take a serious look at the footprint. I understand the challenges that we face on the site. The progress that we've made on the site. The ability for the MOX facility to be that place where the agreement comes to life in a place where the law of the land continues to be honored. The place where the taxpayers don't foot a bill in excess of \$1 billion because the Administration changes its direction, it would be a positive sign for you to be there.

Secretary MONIZ. Thank you, Senator.

First of all let me say we will look into this question of the unanswered questions for the Deputy Secretary. We'll look into that and get back to you.

Senator SCOTT. That would be great.

[The information referred to follows:]

RESPONSES OF HON. ERNEST J. MONIZ TO QUESTIONS FROM SENATOR SCOTT

PLUTONIUM DISPOSITION

*Question 1.* How can the Administration reconcile a "slowdown" to the program that could ultimately kill the MOX project, and simultaneously pledge to uphold our agreement with the Russians?

Answer. The United States remains committed to achieving the important nonproliferation mission associated with the disposition of excess weapon-grade plutonium and to our agreement with Russia. However, considering the unanticipated cost increases associated with the MOX fuel approach and the current budget environment, the Administration is conducting an analysis to determine whether there are options to complete the mission more efficiently.

MOX PROJECT

*Question 2.* How much will the slowdown of the MOX project affect its cost and schedule?

Answer. As mentioned in response to your first question, the United States remains committed to achieving the important nonproliferation mission associated with the disposition of excess weapon-grade plutonium and to our agreement with Russia. However, considering the unanticipated cost increases associated with the MOX fuel approach and the current budget environment, the Administration is conducting an analysis to determine whether there are options to complete the mission more efficiently. Cost and schedule impacts will be a central component in determining next steps for fulfilling our plutonium disposition commitments.

*Question 3.* What are NNSA's estimates on how much it would cost to shut down the MOX project?

Answer. NNSA does not have a current estimate of the cost to shutdown the MOX project.

*Question 4.* How much is the study expected to cost and where will the money come from—NNSA, NE, EM or elsewhere?

Answer. The Administration is conducting an analysis of plutonium disposition options, which is being funded primarily through NNSA.

*Question 5.* When is the study expected to be completed?

Answer. The Department intends to use the analysis in order to inform the FY 2015 budget.

*Question 6.* What are the other alternatives and are they consistent with the US-Russia agreement?

Answer. The analysis includes continuing the current path of disposing of plutonium as MOX fuel as well as other technically and financially feasible options. The U.S.-Russia Plutonium Management and Disposition Agreement (PMDA) allows for other disposition paths if agreed to by both parties.

*Question 7.* Will the US-Russia Agreement have to be amended if the Obama Administration shuts down the MOX project to use an alternative?

Answer. The United States remains committed to achieving the important nonproliferation mission associated with the disposition of excess weapon-grade plutonium and to our agreement with Russia. The U.S.-Russia Plutonium Management and Disposition Agreement (PMDA) allows for other disposition paths if agreed to by both parties.

*Question 8.* What assurance do we have that Russia will be amenable to something other than the MOX process?

Answer. The U.S. will continue to engage Russia while conducting the options analysis and will work to continue progress in implementing the PMDA.

*Question 9.* What national security assessments will be made if the MOX project is ultimately shut down?

Answer. The Department has not cancelled the MOX project, and we cannot prejudge the outcome of the options analysis.

*Question 10.* What options have been previously reviewed and eliminated and what has changed since the time of those studies that these same options should be considered again? What new serious options exist today that have not already been evaluated?

Answer. As previously mentioned, the United States remains committed to achieving the important nonproliferation mission associated with the disposition of excess weapon-grade plutonium and to our agreement with Russia. However, considering the unanticipated cost increases associated with the MOX fuel approach and the current budget environment, the Administration is conducting an analysis to determine whether there are options to complete the mission more efficiently. The options include continuing the current path of disposing of plutonium as MOX fuel as well as other technically and financially feasible options. Previous reviews of the Administration's plutonium disposition strategy will be taken into account in this new analysis. Some options are being analyzed that have been considered in the past; however, the new analysis will take into consideration new data and changes in the operating plans of DOE facilities.

*Question 11.* How does the Administration intend to comply with the agreement with the State of South Carolina for the permanent disposition or removal of plutonium in the state?

Answer. The Department understands our commitments under current legislation, and we will look to ensure compliance with the law as we analyze plutonium disposition options.

*Question 12.* What will be the costs of complying with the agreement with the State of South Carolina and of non-compliance?

Answer. Beginning in 2016, current law stipulates "economic assistance" in the form of fines and penalties of \$1 million per day up to \$100 million per year, subject to appropriations.

*Question 13.* Does the Administration have a contingency for the removal of all the plutonium in the state of South Carolina?

Answer. The Department understands the provisions of current law, and we will look to ensure compliance with the law as we analyze options.

*Question 14.* If the MOX project is cancelled, will NNSA remove the plutonium from SRS, and if so, to where? How much will it cost to package, transport, safeguard and store this sensitive material?

Answer. The Department understands the provisions of the current law, and we will evaluate the costs associated with meeting requirements as the path forward is determined.

*Question 15.* If the plutonium storage facilities at Pantex are getting full, or, as the DOE IG found earlier this year may not be able to safely hold plutonium for much longer due to the age and condition of the storage bunkers, what is NNSA's plan for the plutonium at SRS and Pantex?

Answer. Although aged, the storage facilities at Pantex are safe and continue to be maintained by NNSA as mission critical assets. Additionally, a recent DOE IG study focused its concerns on bunkers which comprise a portion of the facilities used for plutonium storage at Pantex. As part of ongoing efforts to develop NNSA's plutonium strategy, we are evaluating effective ways to safely store plutonium.

*Question 16.* How many taxpayer dollars have been spent to date on DOE's rulemaking regarding set-top box energy conservation requirements?

Answer. To date, DOE has spent a total of approximately \$2.9 million in contract funding and approximately \$300,000 on Federal salary and benefits on the development of energy conservation standards and test procedure development for set-top boxes. This includes the development of the test procedure that is used to measure the energy efficiency of the set-top boxes. These test procedures are necessary as a foundation to both voluntary and regulatory programs.

*Question 17.* How many taxpayer dollars does DOE anticipate spending during the lifecycle of this rulemaking process?

Answer. A typical energy conservation standards rulemaking takes about 3 years to accomplish and costs approximately \$3 to \$5 million to complete, depending on the complexity of the rulemaking being performed. DOE is still early in the rule-

making process for set-top boxes, and acknowledges that funding of the process is subject to annual appropriations.

*Question 18.* Has DOE contracted any of this rulemaking out to third parties? How much has been spent on the contractors?

Answer. Yes, DOE has contracted approximately \$2.9 million for energy conservation standards analysis and test procedure development for set-top boxes to date. The analysis was provided to industry and others and supported the voluntary agreement discussion. Test procedure development and finalization is necessary for both voluntary agreements and mandatory regulations. Contractors represent one way for DOE to access the expertise it needs to advance a rulemaking for the time-frame DOE requires that expertise.

*Question 19.* In terms of carbon dioxide emissions savings, what percentage of the United States' total carbon dioxide emissions do you anticipate DOE's set-top box energy conservation standards will save?

Answer. DOE has not proposed an energy conservation standard for set-top boxes, so it is not yet possible to estimate the carbon dioxide savings that could occur from an energy conservation standard at this time. If DOE were to propose an energy conservation standard, the proposed rulemaking would include an estimate of the potential carbon dioxide savings.

Overall appliance and equipment standards are saving consumers significant amounts on their energy bills and helping avoid significant emissions of carbon dioxide. Based on a recent study by Lawrence Berkeley National Laboratory<sup>1</sup>, Federal energy conservation standards promulgated through 2011 saved consumers an estimated \$42 billion on their utility bills and carbon emissions reductions attributed to the standards were realized at 176 million metric tons in 2011.

*Question 20.* What percentage of total global carbon dioxide emissions do you anticipate DOE's set-top box energy conservation standards will save?

Answer. DOE has not proposed an energy conservation standard for set-top boxes. If DOE were to propose an energy conservation standard, the proposed rulemaking would include an estimate of the potential carbon dioxide savings.

*Question 21.* If industry is willing to achieve the same cost and energy savings throughout a voluntary agreement, is it still DOE's intention to proceed with a federal rulemaking process?

Answer. DOE strongly encourages and will consider any non-regulatory agreement as an alternative to a regulatory standard. DOE recognizes that voluntary or other non-regulatory efforts by manufacturers, utilities, and other interested parties can result in substantial improvements to energy efficiency or reductions in energy consumption. In fact, as part of its rulemaking activities to consider a regulatory efficiency standard, DOE prepares a regulatory impact analysis. The regulatory impact analysis evaluates non-regulatory alternatives to standards, in terms of their ability to achieve significant energy savings at a reasonable cost, and compares the effectiveness of each one to the effectiveness of the proposed standards.

*Question 22.* Considering the American taxpayers are funding this federal rule making process, how do additional layers of government red-tape ultimately benefit the taxpayers considering the industry has agreed to set-top box energy efficiency standards at no cost to the taxpayer?

Answer. DOE's statutory requirement is to maximize energy efficiency that is technologically feasible and economically justified (42 USC 6295 (o) (2)). DOE's appliance standards program ensures that taxpayers are receiving cost-effective energy savings as justified by a thorough analysis of alternatives to determine which option conforms to this statutory requirement.

DOE's appliance and equipment standards program seeks to deliver significant benefits to consumers across the country across a wide variety of products. Overall appliance and equipment standards are saving consumers significant amounts on their energy bills and helping avoid significant emissions of carbon dioxide. Based on a recent study by Lawrence Berkeley National Laboratory<sup>2</sup>, Federal energy conservation standards promulgated through 2011 saved consumers an estimated \$42 billion on their utility bills and carbon emissions reductions attributed to the standards were realized at 176 million metric tons in 2011.

<sup>1</sup> Lawrence Berkeley National Laboratory, Energy and Economic Impacts of U.S. Federal Energy and Water Conservation Standards Adopted From 1987 Through 2011 , <http://ees.lbl.gov/pub/energy-and-economic-impacts-us-federal-energy-and-water-conservation-standards-adopted-1987-0>

<sup>2</sup> Lawrence Berkeley National Laboratory, Energy and Economic Impacts of U.S. Federal Energy and Water Conservation Standards Adopted From 1987 Through 2011 , <http://ees.lbl.gov/pub/energy-and-economic-impacts-us-federal-energy-and-water-conservation-standards-adopted-1987-0>

Secretary MONIZ. Second, of course, I want to emphasize the Administration and the Department of Energy, I personally, definitely, are committed to the law. With regard to the Yucca Mountain license, as we have discussed already, there's litigation going on with the NRC and until that is resolved the path forward is unclear there.

I do want to emphasize that, and this is what underpins the strong consent based approach embodied in the Blue Ribbon Commission report, the Administration strategy and S. 1240, all of the above, the fact is without both Federal and State laws and permitting being aligned, we just cannot move forward.

So there are many issues.

With regard to MOX, I think as you're aware, in fact I had a team at Savannah River when you were visiting it, recently.

Senator SCOTT. Yes.

Secretary MONIZ. We have put a very high level team, working very hard with the contractors trying to understand their cost structure, why their costs went up so much. We are looking at alternatives. We are committed to disposing of the 34 metric tons of weapons grade plutonium.

So we will be doing that. But the cost escalation just called for a re-examination of where we stand. Again, I would say, the contractors, CBI and AREVA are being very forthcoming in our discussions now, including, by the way, some management changes they have made in the project since we started our review.

Senator SCOTT. As relates to the questions, Mr. Chairman.

The CHAIRMAN. Yes, sir.

Senator SCOTT. About the questions I'm happy to provide those questions for you so you can take them with you.

Secretary MONIZ. OK.

Senator SCOTT. The second part is that I think it's really important for us to, once again, highlight the fact that the taxpayers are on the hook to the State of South Carolina for at least a million dollars a day, up to \$100 million for the delay of the completion of this project. Frankly, other than the MOX facility, the ability to dispose of the weapons grade plutonium any other way and meet the agreement, as we discussed when you were going through the process of being nominated, doesn't exist. Classification doesn't get us there.

For us to have a strategic retreat would still cost the taxpayers another billion dollars. So moving forward as we uncover and understand perhaps the delays, the construction costs, it would be an important part of the equation but moving forward, we should.

Secretary MONIZ. Sir, let me say first of all the invitation to go to Savannah River. It's one that I intend to take up. I think to make it productive we're waiting to get through this review period so we know where things stand.

Second, obviously I'm aware of the issues in terms of penalties, in terms of the plutonium that's been moved into South Carolina. Let me say again, as with other of our sites, we very much appreciate the long collaboration that we've had with Savannah River, for sure.

Third, the whole point of our review—and I might say, I think as you are aware, we are concerned about certainly maintaining

the skill base. We did have a reprogramming just about 2 weeks ago to help protect that skill base at the site. The point of the review, ultimately, is to make sure we are doing the best for the taxpayer in disposing of those 34 tons of plutonium.

Senator SCOTT. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Scott.

Senator Cantwell.

Senator CANTWELL. Thank you, Mr. Chairman. Thanks for holding this hearing and trying to get a bipartisan approach on this with the Ranking Member, Senator Murkowski.

I appreciate your focus both on civilian and Defense waste. I think you mentioned something earlier, before I got here. We were at a Commerce Committee markup and about this very issue as it related to your legislation.

So I think your legislation takes an important step forward in calling out Defense waste. I think it should go a little further that Defense is not an afterthought. That we don't go through this whole process again with the Blue Ribbon Committee approach of dialoging and then come to the end and it's kind of a footnote. We need this to be a central part of the discussion. So that's what I would be looking for in legislation.

People know that Hanford in Washington State continues to make progress on an incredibly complex and costly endeavor. Thank you, Mr. Secretary for visiting that site. But we need an end point and a place for the recovered high level waste to go.

To me, it's unacceptable to our State, my constituents, to think that Hanford is just going to end up being that repository for that vast amount of high level Defense waste.

So earlier this year DOE determined that 6 of the single shell waste tanks at Hanford are leaking radioactive, hazardous materials into the ground. So I'm not telling you anything you don't know, Mr. Secretary. But to me, establishing a disposal site to isolate the high level Defense waste is the best, most comprehensive, cost effective way to deal with the immediate problem of a plan for the high level waste out of these tanks and to have that comprehensive plan and make sure that we have revisited this issue of comingling and come to a decision. Hopefully then have this plan for Defense waste updated every 5 years so that we've addressed this problem.

So first, I guess my question is do you think our Nation should have an explicit plan on dealing with the Defense waste? How do we make sure that it doesn't get lost in the debate this time around?

Secretary MONIZ. Senator Cantwell, I certainly agree that we need a plan for high level waste. I think we will have a plan for high level waste. The question of comingling or not comingling, as the approach, is one that we are studying right now as recommended by the Commission and by the Administration strategy. Specifically I would say endorsed by S. 1240.

So we really think it's an important study to do. We expect to have results for you in the fall on that.

Senator CANTWELL. That would explicitly re-evaluate whether separating them is the right?

Secretary MONIZ. It would look at all the factors involved in terms of comingling or not.

Senator CANTWELL. OK.

Secretary MONIZ. Recognizing that there are somewhat different waste forms, but technically they could be stored together. There's many factors. We are bringing all those together in an ongoing study.

Senator CANTWELL. I appreciate that before you said that a relook was necessary. I, you know, since your Hanford visit and you see the urgency.

Secretary MONIZ. Mm-hmm.

Senator CANTWELL. Having a plan that's cohesive with the Defense waste that is going to be, you know, processed then a place for storage. Those are real near term dates.

Secretary MONIZ. Yes.

Senator CANTWELL. Would you agree a great challenge to us, as opposed to the commercial issues, which are longer and separate, can be separate issues.

Secretary MONIZ. They, yes.

Senator CANTWELL. As it relates to the science and storage.

Secretary MONIZ. Look, we're very, very committed to the high level waste movement, as well as the spent fuel. At Hanford there we have every intention of—there's both the things in the future like the WTP waste that will be made into glass. There's also other things like K-Basin fuel that's been repackaged currently on the Central Plateau.

So we need to have a place to move all of this. Again, we will come back with the results of our comingling study probably in a couple months.

Senator CANTWELL. OK.

Secretary MONIZ. Two, 3 months.

Senator CANTWELL. Again, Mr. Chairman, this will be a key sticking point for me on this legislation. But I really appreciate you and Senator Murkowski's leadership on a bipartisan effort.

Thank you.

The CHAIRMAN. Thank you, Senator Cantwell.

As you know I feel very strongly that the area you're discussing, particularly with respect to Defense and civilian waste, is a crucial one. We'll be working very closely with you on—

Secretary MONIZ. Mr. Chairman.

May I just make an editorial remark?

The CHAIRMAN. Editorial remarks? You have license for editorializing.

Secretary MONIZ. OK. I just wanted to say this is a little bit off topic, but with both of you here. I just wanted to say that my trip to Hanford was very interesting in seeing all the challenges that we have.

I wanted to just add that not having been there, you know, in quite a few years, at least not with the vision of someone at Department of Energy. I was very impressed with the amount of progress that was made as well at the site since that last time.

I think that sometimes we lose sight of that fact and at being able to have renewed access to a large part of the Columbia River

that goes through the site in 2015 and 2016. I mean, it's really encouraging.

So I think this in no way minimizing the huge challenge that we still have, but I do want to say that I was impressed as well by the progress. The plutonium finishing plant is well along in being removed and the new ground water pumping program for chromium. I thought it was actually also uplifting, at least in those ways.

Senator CANTWELL. Yes, I know my time is expired, Mr. Chairman.

The CHAIRMAN. Go ahead.

Senator CANTWELL. But I would just say, thank you for those comments.

But I think and that begets the point that as we debate this commercial issue we are going to make progress. DOE is going to hold them accountable to this timeline. Then we're going to be sitting there with all of this waste in need of a repository that could be answered and dealt with just as we have isolated these various projects around the country and made progress or the sites within Hanford and made progress. DOE could make significant progress on Defense waste with a plan.

Thank you.

Secretary MONIZ. Thank you.

The CHAIRMAN. Mr. Secretary, thank you.

Nuclear waste legislation always passes unanimously.

[Laughter.]

The CHAIRMAN. You could see that again today. But I think you've been very, very constructive. We appreciate it. Suffice it to say, we couldn't have gotten to this day where we actually had a bipartisan bill, in my view, had we not had your good counsel.

Secretary MONIZ. Thank you so much.

The CHAIRMAN. So we'll excuse you at this time. I know we'll be talking again very soon. Thank you.

Secretary MONIZ. Thank you. Thank you, all.

The CHAIRMAN. Our next panel.

The Honorable Sally Young Jameson, Maryland Delegate, National Conference of State Legislatures.

The Honorable David Boyd, National Committee on Electricity—the Committee on Electricity for the National Association of Regulatory Utility Commissioners.

Mr. Marvin Fertel, President, Chief Executive Officer of the Nuclear Energy Institute.

Mr. David Lochbaum, Director Nuclear Safety for the Union of Concerned Scientists.

The Honorable Joe Garcia, Vice President, Southwest Area, National Congress of American Indians.

The Honorable Chuck Smith, Vice Chair of the Energy Communities Alliance.

Mr. Geoffrey H. Fettus, Senior Attorney for NRDC, the Natural Resources Defense Council.

If you all would come forward.

Thank you all for your patience and for coming. We're going to make your prepared remarks a part of the hearing record in their entirety. I know there is always a compulsion to simply start read-

ing. We'll make your prepared remarks a part of the hearing record in their entirety and if you could just take a few minutes and talk to us and summarize your views that would be helpful.

Ms. Jameson, welcome.

**STATEMENT OF SALLY YOUNG JAMESON, DELEGATE TO THE MARYLAND HOUSE OF DELEGATES, CHAIR, NUCLEAR LEGISLATIVE WORKING GROUP, NATIONAL CONFERENCE OF STATE LEGISLATURES**

Ms. JAMESON. Good afternoon everyone.

Chairman Wyden, Ranking Member Murkowski and distinguished members of the committee, I am Sally Young Jameson, a member of the Maryland House of Delegates as well as a member of the National Conference of State Legislatures, Executive Committee, and I also Chair NCSL's nuclear legislative working group. I appear before you today on behalf of NCSL which is a bipartisan organization representing the 50 State legislatures and the legislation—legislatures of our Nation's commonwealths, territories, possessions and the District of Columbia.

Mr. Chairman, we want to thank you for the opportunity to testify. I would respectfully request that a copy of NCSL's radioactive waste policy directive be submitted for the record as you mentioned earlier.

The CHAIRMAN. Without objection, it's ordered.

Ms. JAMESON. Thank you.

Mr. Chairman, NCSL applauds your continued efforts, as well as the efforts of Senator Murkowski, Feinstein and Alexander, to develop bipartisan legislation needed to establish a program to manage the Nation's spent nuclear fuel and high level radioactive waste. The release of the Nuclear Waste Administration Act of 2013 represents a good step forward in this conversation. NCSL urges Congress to move expeditiously to review and act on this legislation while taking into account the proposals contained herein.

With regard to the potential siting of a repository or interim storage facility, NCSL recognizes the need to develop processes that are efficient and effective in order to enable a constructive environment for these efforts. However, efforts to streamline this process do not necessitate overlooking the role of State legislatures in the process. In order to ensure that such a decision accurately reflects appropriate levels of State consensus, State legislatures and not just the State's Governor, must be consulted regularly.

Ensuring such consultation respects the traditional role of State legislatures in the appropriation of funds and performing program oversight.

One option to consider would be to add the phrase, "presiding officer of each legislative chamber," to all references to the Governor or the duly authorized official of the State when mentioned with regards to site selection, study and siting for both the repository and storage facility processes. This would make it consistent with the Nuclear Waste Policy Act of 1982, section 117 which clearly states that the Department of Energy shall consult and cooperate with the Governor and legislature of such State.

NCSL supports the creation of a public/private partnership to manage the back end of the fuel cycle as was recommended by the

final report of the Blue Ribbon Commission on America's Nuclear Future rather than the establishment of a new Federal agency as described in the bill. Given the importance placed on State, local and tribal consultation in the bill, the committee should consider adding such representation to the oversight board and other advisory committees.

NCSL supports your efforts to direct annual funding within the Nuclear Waste Administration Working Capital Fund and the Nuclear Waste Fund for their intended purpose of managing radioactive waste ensuring that the funds not be subject to non-related, Federal discretionary spending. These funds should be used for developing permanent disposal and consolidated interim storage facilities as well as for the use of financing mechanisms and incentives to host voluntary communities.

NCSL supports the bill's language that provides for advanced notification to State, through which transportation of spent nuclear fuel and high level radioactive waste will take place. Additionally State, local and tribal governments should be involved in a meaningful manner with regard to the development and implementation of transportation quality assurance measures including radiation, emissions standards and transportation equipment.

I would like to take just a moment and remove my NCSL hat.

The CHAIRMAN. We're just a little short of time, Ma'am because you're over and we've got so many other witnesses.

Ms. JAMESON. I'm sorry.

The CHAIRMAN. So if you could summarize, we will make your—for all of you, every word will be a part of the permanent record.

Ms. JAMESON. I would just like to say that as a legislator with a nuclear power plant, Calvert Cliffs, is in my region. I just want you to know how important it is that we have a national repository. We have over 72 modules of nuclear waste already stored onsite. There's 60 more to be, you know, also added.

We want to see that waste removed from our community. Our constituents really would like to see the U.S. Government fulfill its promise to its people.

Thank you very much.

[The prepared statement of Ms. Jameson follows:]

PREPARED STATEMENT OF SALLY JAMESON, DELEGATE TO THE MARYLAND HOUSE OF DELEGATES, CHAIR, NUCLEAR LEGISLATIVE WORKING GROUP, NATIONAL CONFERENCE OF STATE LEGISLATURES

#### DEVELOPING A SOLUTION

Chairman Wyden, Ranking Member Murkowski and distinguished members of the Senate Energy and Natural Resources Committee, I am Sally Jameson, member of the Maryland House of Delegates, as well as a member of the National Conference of State Legislatures (NCSL) Executive Committee and Chair of NCSL's Nuclear Legislative Working Group. I appear before you today on behalf of NCSL, a bi-partisan organization representing the 50 state legislatures and the legislatures of our nation's commonwealths, territories, possessions and the District of Columbia. We thank you for the opportunity to testify and inform you and the other members of the committee about NCSL's work on nuclear energy issues facing the nation including waste disposition and storage.

Mr. Chairman, NCSL applauds your continued efforts as well as the efforts of Senators Murkowski, Feinstein and Alexander to develop bipartisan legislation needed to establish a program to manage the nation's spent nuclear fuel and high level radioactive waste. NCSL has long been on record in support of efforts by both Congress and the administration, including testifying before the Blue Ribbon Com-

mission on America's Nuclear Future (BRC), to address the fundamental questions necessary for developing a solution to address spent nuclear fuel storage and high level radioactive waste management. The release of the Nuclear Waste Administration Act of 2013 (NWAA), represents a step forward in this conversation, and NCSL urges Congress to move expeditiously to review and act on this legislation, while taking into account the proposals contained herein.

NCSL has an extensive history of working on nuclear energy issues through its Nuclear Legislative Working Group, which is comprised of state legislators from across the country who discuss issues surrounding nuclear energy including the safe handling, storage and transportation of waste. This long-standing group meets twice a year and helps to form NCSL policy directives on this and other topics. I am currently the chair of this working group and have valued the opportunity to discuss these important issues with my peers from around the country. I also have the privilege of serving on the NCSL Energy Supply Task Force created in 2009 by the NCSL Executive Committee, which explores current energy policies in the United States and also makes recommendations for changes to current NCSL policy directives related to energy issues.

NCSL recognizes that nuclear power is an integral part of a national energy plan but also understands the need to address certain issues including transportation, storage and disposal of used nuclear fuel. State legislators can and do play a significant role in developing nuclear energy policy, whether it be in statehouses across the country, town hall meetings with our constituents or meetings with our respective Congressional delegation.

It is critical that the Committee recognize the value of a strong partnership with state legislators who can help move policy forward in the states and in Congress. Together we can work on behalf of our mutual interests and common goals. As you are aware, NCSL has several applicable policy directives\* on these topics, which have been submitted along with my written remarks to the Committee in advance of this hearing. NCSL's recently reauthorized Radioactive Waste Management Policy Directive and National Energy Policy Directive serve as the foundation for NCSL's recommendations to the committee.

#### CONSENT BASED SITING

With regard to the potential siting of a repository or interim storage facility, NCSL recognizes the need to develop processes that are efficient and effective in order to enable a constructive environment for these efforts. However, efforts to streamline this process do not necessitate overlooking the role of state legislatures in the process. In order to ensure that such a decision accurately reflects appropriate levels of state consensus, state legislators, and not just a state's governor, must be consulted regularly. Ensuring such consultation respects the traditional role of state legislatures in the appropriation of funds and performing program oversight.

There are a number of legislative options to ensure that the consultation process can integrate all aspects of state government and ensure state legislative input. One option to consider would be to add "presiding officer of each legislative chamber" to all references to the "Governor or duly authorized official of the state," when mentioned with regards to site selection, study and siting for both the repository and storage facility processes. This would make it consistent with the Nuclear Waste Policy Act of 1982 section 117, which clearly states that the Department of Energy "shall consult and cooperate with the Governor and legislature of such State." NCSL strongly urges this committee to ensure adherence to this requirement as it moves forward to develop a program for the long-term treatment and disposal of high-level radioactive waste.

#### NUCLEAR WASTE ADMINISTRATION

NCSL supports the creation of a public-private partnership to manage the back end of the nuclear cycle, as was recommended by the final report of the BRC, rather than the establishment of a new federal agency as described in the NWAA. Additionally, NCSL would note that given the importance placed on state, local, and tribal consultation in the bill, the committee should consider adding such representation to the Oversight Board and other advisory committees, as discussed in Section 205. In order to not overburden the board structures, the appointments could be made through the national organizations representing state, local and tribal elected officials such as NCSL.

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\*Documents have been retained in committee files.

## INTERIM STORAGE LINKAGES

NCSL supports federal action to develop consolidated interim storage facilities to temporarily house high level radioactive waste inventories until a permanent repository is operational. With respect to the issue of establishing a linkage between progress on development of a repository and progress on development of a storage facility, NCSL neither supports nor opposes such a linkage. However, NCSL does believe that consolidated interim storage facilities should be licensed for a specific, limited period of time not to exceed 25 years.

## WORKING CAPITAL FUND

NCSL supports your efforts to direct annual funding within the Nuclear Waste Administration Working Capital Fund and the Nuclear Waste Fund for their intended purpose of managing radioactive wastes, ensuring that the funds not be subject to non-related federal discretionary spending. These funds should be isolated for developing permanent disposal and consolidated interim storage facilities as well as for the use of financing mechanisms and incentives to voluntary host communities.

## NUCLEAR WASTE TRANSPORTATION

NCSL supports the bill's language that provides for advanced notification to states through which transportation of spent nuclear fuel and high level radioactive waste will take place. NCSL also supports efforts to provide assistance to states from the administrator of the Nuclear Waste Administration to train public safety officials, acquire safety response equipment and other safety programs related to the transportation of nuclear waste. Additionally, state, local and tribal governments should be involved in a meaningful manner with regard to development and implementation of transportation quality assurance measures including radiation emissions standards, cask designs, support facilities, and transportation equipment.

## AN ISSUE CLOSE TO HOME

I would like to take a minute and remove my NCSL hat and speak to you as a Maryland legislator. The Calvert Cliffs Nuclear Power Plant, located on the Western Shore of the Chesapeake Bay, sits just a few miles outside of Maryland's 28th District, my home district. Calvert Cliffs generally accounts for about one-third of the state's energy generation, and produces enough power to light up every home and business in Baltimore according to the Maryland Power Plant Research Program. However, due to the lack of a national fuel repository or interim storage site, the plant's used fuel is forced to remain on site. The plant's independent spent fuel storage installation (ISFSI) currently contains 72 modules with a total of 1,920 fuel assemblies in dry fuel storage and 1,432 fuel assemblies currently in storage in the Spent Fuel Pool. Additionally, 24 more modules will be added later this year and another 36 are anticipated to be added in the future. The issue of developing a solution to the safe and secure storage of high-level radioactive waste and used nuclear fuel is one of great importance to both myself and my constituents.

The Nuclear Waste Administration Act of 2013 continues to move the conversation on nuclear waste management issues forward and I urge Congress to review the above proposals and act expeditiously on this legislation. Again, thank you for the invitation to speak with you today on these important issues. NCSL stands ready to work with this committee to ensure that state policymakers are involved in creating a timely, cost-effective solution to this important public policy challenge.

The CHAIRMAN. Very good.  
Mr. Garcia.

**STATEMENT OF JOE GARCIA, SOUTHWEST AREA VICE  
PRESIDENT, NATIONAL CONGRESS OF AMERICAN INDIANS**

Mr. GARCIA. Good afternoon, Honorable Chairman Wyden and Ranking Member Murkowski and Energy committee members. Special greetings to Senator Heinrich, but he just left, so he missed that.

I'm Joe Garcia, Head Councilman from Ohkay Owingeh, former president of the National Congress of American Indians and currently serving as the NCAI Southwest Area Vice President.

The NCAI is the oldest and largest national tribal advocacy organization in the country. On behalf of the NCAI membership of over 250 tribes, we thank you for conducting this hearing and inviting the NCAI to share some of the issues facing tribal governments and communities regarding spent nuclear fuel and radioactive waste storage disposal and transportation.

I fully understand this hearing is being held not as a general overview of the nuclear waste problems existing in this country, but about S. 1240 which addresses disposition of commercial generated nuclear fuel. However, it is incumbent on our organization to remind everyone of the long standing detrimental impacts from environmental contamination and environmental health issues that nuclear activities continue to have on tribal lands that originated during the World War II era.

Native peoples contributed a significant share in the war effort as Native warriors volunteered, fought and died to protect our homelands and this country. Tribal governments surrendered hundreds of thousands of acres of tribal lands for national defense purposes which were supposed to be returned to the tribes. That has not occurred.

Additionally uranium mined and milled on tribal lands supplied the atomic materials for research and development of weaponry that ended the war. There are contaminated places that require immediate mitigation.

Legacy radioactive defense waste has destroyed sacred areas.

Stored radioisotopes are seeping into ground water.

River systems containing habitat for native fish and other foods and medicines critical to the cultural survival of native peoples.

The NCAI urges this committee to conduct an oversight hearing to assess and address the myriad of issues mentioned.

Following enactment of the Nuclear Waste Policy Act of 1982, the NCAI managed a cooperative agreement with the Department of Energy, Office of Civilian Radioactive Waste Management to provide tribal governments with updates and implementation of the act. Under the DOE the cooperative agreement the NCAI created the National Indian Nuclear Waste Policy Committee and coordinated numerous meetings involving tribal government, DOE, Nuclear Regulatory Commission and Federal emergency management officials to discuss siting and transportation status and to relay tribal concerns.

Tribal governments varied in their view of NWPA implementation. Many bands of Shoshone and Paiute tribes were adamantly opposed to the siting of a permanent repository at Yucca Mountain because the location is in the middle of their traditional territory. Their resistance also came from being left out of the early stages and eventual finding of no significant impact of the environmental impact statement.

These tribes did not have the technical staff or the resources to fund western science studies. But they are well versed in traditional ecological knowledge. Nevertheless they were rendered helpless by a systematic definition of "affected Indian tribes" as defined in the 1982 Nuclear Waste Policy Act.

Tribes like the Prairie Island Indian Community, whose island reservation is immediate adjacent to the Prairie Island Nuclear

Generating plant owned by Excel Energy, Inc., need to have a repository built to lessen the risk to their tribal communities. On Prairie Island spent nuclear fuel is stored in above ground casks a mere 600 yards from the nearest tribal citizen's homes and less than one mile from the Tribal Clinic Government Offices Gaming Enterprise and other facilities.

The definition of affected Indian tribes should be amended in both the Nuclear Waste Policy Act and the Nuclear Waste Administration Act to parallel the language of affected unit of general local government section to include any Indian tribe that are contiguous with the State or general local government unit that has jurisdiction over the site of repository or storage facility so that these and other similarly affected tribes can participate fully in all activities and proceedings.

It appears I'm running out of time.

But in conclusion I would like to see that any efforts having to do with S. 1240 that we are ensured that we have meaningful collaboration and consultation with the tribes and the members at large of whoever has jurisdiction. So we ensure that this thing will happen. But it will lead to good, successful effort from all across the land.

So we ask that of this committee. Thank you so much for allowing NCAI to participate in this hearing.

[The prepared statement of Mr. Garcia follows:]

PREPARED STATEMENT OF JOE GARCIA, SOUTHWEST AREA VICE PRESIDENT,  
NATIONAL CONGRESS OF AMERICAN INDIANS

Honorable Chairman Wyden and Ranking Member Murkowski and Energy Committee members:

I am Joe Garcia, Councilman from Ohkay Owingeh, and Southwest Area Vice President for the National Congress of American Indians, the oldest and largest national tribal advocacy organization in the country. On behalf of the NCAI membership of over 250 tribes we thank you for conducting this hearing and inviting the NCAI to share some of the issues facing tribal governments and communities regarding spent nuclear fuel and radioactive waste storage, disposal and transportation.

I fully understand this hearing is being held not as a general overview of the nuclear waste problems existing in this country, but about S. 1240 which addresses disposition of commercial generated spent nuclear fuel. However, it is incumbent on our organization to remind everyone of the longstanding detrimental impacts from environmental contamination and environmental health issues that nuclear activities continue to have on tribal lands that originated during the World War II era.

Native peoples contributed a significant share in the war effort as native warriors volunteered, fought and died to protect our homelands and this country. Tribal governments surrendered hundreds of thousands of acres of tribal lands for national defense purposes which were supposed to be returned to the tribes. That has not occurred. Additionally uranium mined and milled on tribal lands supplied the atomic materials for research and development of weaponry that ended the war.

There are contaminated places that require immediate mitigation. Legacy radioactive defense waste has destroyed sacred areas; stored radioisotopes are seeping into groundwater, river systems containing habitat for native fish and other foods and medicines critical to the cultural survival of native peoples. The NCAI urges this committee to conduct an oversight hearing to assess and address the myriad issues mentioned.

Following enactment of the Nuclear Waste Policy Act of 1982, the NCAI managed a cooperative agreement with the Department of Energy Office of Civilian Radioactive Waste Management to provide tribal governments with updates on implementation of the Act. Under the DOE cooperative agreement, the NCAI created the National Indian Nuclear Waste Policy Committee and coordinated myriad meetings involving tribal government, DOE, Nuclear Regulatory Commission, and Federal

Emergency Management officials to discuss the siting and transportation status and tribal concerns.

Tribal governments varied in their view of NWPA implementation. Many bands of Shoshone and Paiute tribes were adamantly opposed to the siting of a permanent repository at Yucca Mountain because the location is in the middle of their traditional territory. Their resistance also came from being left out of the early stages and eventual finding of no significant impact of the Environmental Impact Statement. These tribes did not have the technical staff or the resources to fund western science studies but they are well versed in traditional ecological knowledge. Nevertheless they were rendered helpless by the systematic definition of "affected Indian Tribes" as defined in the 1982 Nuclear Waste Policy Act.

Tribes like the Prairie Island Indian Community whose island reservation is adjacent to the Prairie Island Nuclear Generating Plant owned by Excel Energy Incorporated, needs to have a repository built to lessen the risk to their tribal community members which includes tribal government offices, tribal citizens' homes, and their gaming facility.

In the last search for an interim storage facility, Monitored Retrieval Storage, several tribes were negotiating with the Office of the Nuclear Waste Negotiator, the independent entity charged with this responsibility. Five tribes and seven states had stepped forward before the process was closed. The Skull Valley Goshute Tribe came the closest despite some tribal community's citizens resisting the effort, however the most damaging opposition was the state in enacting state laws and lobby for federal legislation to derail the project.

These examples of self-determination in exercising tribal sovereignty are intact and you will likely see a repeat of tribes supporting and opposing in varying degrees S. 1240 implementation if it is enacted.

It appears that recommendations from the Blue Ribbon Commission on America's Nuclear Future are incorporated into S. 1240. One of the Blue Ribbon Commission's Principal Findings on Siting Processes and Related Issues states that, "State, tribal and local and tribal officials have primary responsibility for public safety and protection of the environment. These officials should be fully involved in the development of storage and transportation solutions and should be the primary interface with their communities. Their cooperation and involvement in past and ongoing projects has been a critical element of success."

S. 1240 contains provisions regarding the guidelines for the consideration of storage facilities that call for the Administrator to evaluate the extent that states and tribes will support the proposal. We support this language, and encourage you to go even further in ensuring consultation with affected tribal governments.

Section 205 of the S. 1240 would establish the Nuclear Waste Oversight Board. Among the Board's duties is to oversee use of funds in complying with the mission plan. The Oversight board should include professional staff with experience in working with and for tribal governments to ensure that there is ongoing tribal government consultation regarding programmatic and policy development. The professional staff should be able to assess the policy and programs information dissemination and required consultation to fulfill trust obligations regarding all impacts to trust lands and resources from upon which the trust relationship is based.

One of the critical issues surrounding the Nuclear Waste Policy Act and S. 1240 is transportation of spent nuclear fuel through state, tribal and local jurisdictions. Section 180(c) of the Nuclear Waste Policy Act calls for the safe and routine transportation of its materials. Safe and routine transportation includes notice to state and tribal governments, community and citizen public safety awareness and radiological emergency response capability in the event of a transportation accident.

Tribal governments have less emergency management capacity than state counterparts due to tribal ineligibility to access the hundreds of millions of dollars for these purposes which has been provided by federal agencies including the Federal Emergency Management Agency (FEMA) and the Department of Homeland Security (DHS). We urge that the Committee to call upon DOE, FEMA, and the DHS to work with tribes on potential transportation routes to assess current radiological emergency response capability and develop programs and policies to achieve the capability required for safe and routine transportation. Otherwise this will be another unfunded mandate for tribal governments which have public safety responsibility for the likelihood of triple figure radioactive waste shipments but lack the necessary emergency management infrastructure.

We believe tribal governments retain regulatory authority over commercial radioactive waste shipments as they have over other hazardous materials and are working to transportation departments with inspection, permitting and other oversight authority. It is possible that tribes impacted by the proposed spent nuclear fuel shipments may seek to create and manage transportation departments to oversee

radioactive materials shipments, which is well within their rights. However a tribal regulatory scheme also might include comity and shared responsibilities with surrounding jurisdictions.

Last month the Nuclear Regulatory Commission issued its Final Rule on Advanced Notification to Native American Tribes of Certain Shipments of Nuclear Waste. The implementation action requires licensees to provide advanced to federally recognized tribal governments notice of certain shipments of irradiated reactor fuel and other nuclear wastes that pass within or across their reservations. This rulemaking began over 15 years ago but we believe the NRC is fulfilling its fiduciary responsibility in following through with this Final Rule.

Our last issue, not specifically contained in S. 1240 but of equal importance is that we need the committee's assistance to guide the DOE to get back on track regarding its duties and responsibilities under the DOE Indian Policy, to work on a government to government basis with tribes regarding the overall impacts of the Nuclear Waste Policy Act, and if enacted, the Nuclear Waste Administration Act.

The DOE Office of Nuclear Energy is currently funding several interstate regional organizations to attend meetings and disseminate information to state governments and citizens about current and proposed radioactive waste transportation campaigns. To their benefit, states have multiple streams of input into the process and issues. However tribes do not have the same opportunity as the Office of Nuclear Energy has chosen to not support an intertribal organization for these purposes despite inquires and requests from tribal official and the NCAI.

The absence of an entity to provide an opportunity and venue to discuss the current status of DOE activities with tribal officials is contradictory to the intent and purpose of the DOE Indian Policy. We urge the Committee to inquire of the Office of Nuclear Energy their reasons for not supporting an inter-tribal organization to serve the tribes in the same capacity as currently funded inter-state organizations.

As the effort to resolve accumulation of spent nuclear fuel and radioactive waste moves forward, we urge this committee to be mindful of the legacy of impacts and the cost tribal governments and peoples have borne in defense of their homelands and this country. We believe the resolution of these problems will be beneficial to all citizens of this country. Thank you again for the opportunity for the NCAI to share the views of our organization and constituent tribal governments.

The CHAIRMAN. Mr. Garcia, thank you, sir.  
The Honorable David Boyd.

**STATEMENT OF DAVID C. BOYD, CHAIRMAN, NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS COMMITTEE ON ELECTRICITY, VICE CHAIR, MINNESOTA PUBLIC UTILITIES COMMISSION**

Mr. BOYD. Good afternoon, Chairman Wyden, Ranking Member Murkowski and members of the committee. My name is David Boyd. I'm a Commissioner with the Minnesota Public Utilities Commission and Chair of the Electricity Committee for the National Association of Regulatory Utility Commissioners or NARUC.

As economic regulators responsible for the rates paid by commercial, industrial and residential ratepayers in the U.S., we have a long history and record of engagement on these issues. In my State, Minnesota derives about 25 percent of its electricity from 3 nuclear reactors on two sites. One that was mentioned by the Senator and by Mr. Garcia and have contributed approximately \$750 million from those reactors to the Nuclear Waste Fund.

While not directed included or excluded from the pending legislation or the Blue Ribbon Commission report, NARUC's position on the Yucca Mountain project is clearly articulated via our numerous resolutions on the matter. As quasi judicial bodies regulators are guided by statutes and rule on a daily basis in the Nuclear Waste Policy Act is crystal clear. Review of the DOE license application is mandated by the law and review of that license application must be completed.

More recently, however, we've also expressed support for the BRC findings as outlined in a resolution from this past February. Those recommendations in the Yucca Mountain situation are not mutually exclusive. We believe that the two efforts can be pursued in parallel in order to manage our Nation's used nuclear fuel and create a sustainable program for such a purpose.

With respect to S. 1240 we have a few observations.

But we do have concerns about liability. We feel that requiring utilities to relinquish their rights to damages owed in order to have access to storage facilities should not be legislated. While this may relieve a burden on taxpayers it improperly shifts that burden and liability to the ratepayers.

In terms of management of the program we do support moving this program outside of the Department of Energy and feel strongly that we must insulate the program from politics as much as is possible.

Toward that end we prefer the single purpose, Federal corporation model where at a minimum an entity with a board of directors charged with selecting the corporation's chief executive officer rather than a single administrator.

We do, very much, appreciate the changes from earlier drafts of the bill but remained concerned that such proposed structure would lead to an impasse like the one we have now.

Success will require clear legislative authority and funding. We feel strongly that NARUC must be on any new boards to represent the interest of the ratepayers.

We're pleased to see the nuclear waste fee assessments and Defense contributions directed to the working Capital Fund of the new entity and would suggest that interests, thrown off by the corpus of the Nuclear Waste Fund and single one time payments should be similarly directed to the working Capital Fund. The corpus of the Nuclear Waste Fund must be accessible to this new organization. We know it's not needed now, but it will be at some time in the future.

We could imagine phase transfers of that corpus over time to the new entity or some other mechanism that you may decide is reasonable and appropriate. But we feel it's important that you clearly articulate how that fund will be available to the new entity when it's needed.

We do support interim storage for shut down plants called pilot storage facilities for priority waste in the bill. With respect to additional storage facilities for non priority waste details regarding scope, timeline and cost effectiveness remain unsupported and unclear. Therefore the new management entity should be directed to timely develop only those additional storage facilities deemed necessary and cost effective following extensive analysis and stakeholder input.

We support the consent based siting mechanism and feel that that's a process that could be used for the second repository as well as for interim facilities.

The Department of Energy should act now to facilitate potential host interest. We'd emphasize the need to maintain flexibility for potential hosts to negotiate creative and effective solutions. The

concern is that a cumbersome or prescriptive process will actually stifle that kind of creative dialog.

We also need to define what an enforceable agreement is as soon as possible so that the Nation can plan for and rely on these facilities.

Thank you for your leadership in advancing these issues. We look forward to a continued engagement as we implement an improved program for used nuclear fuel management. I'll gladly attempt to answer your questions.

Thank you.

[The prepared statement of Mr. Boyd follows:]

PREPARED STATEMENT OF DAVID C. BOYD, CHAIRMAN, NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS (NARUC), COMMITTEE ON ELECTRICITY, VICE CHAIR, MINNESOTA PUBLIC UTILITIES COMMISSION

Good afternoon Chairman Wyden, Ranking Member Murkowski, and Members of the Committee. My name is David Boyd. I am a Commissioner from the Minnesota Public Utilities Commission and the Chair of the National Association of Regulatory Utility Commissioners (or NARUC) Committee on Electricity. I am honored by the invitation to appear before you today.

NARUC was founded in 1889. Our members include utility commissions in all fifty States, D.C., and U.S. Territories. Like Congress and this Committee, NARUC is bipartisan. I represent a group of in-State experts whose interests are precisely aligned with each Senator in this room. It is unlikely any other stakeholder in this sector cares more about the impact of the current impasse on Yucca Mountain and the continuing build-up of waste in 33 States across the country on the citizens of your States, than the NARUC member residing in your State. Our members remain directly responsible for retail electricity rates and service in each of your States.

As your States' electric utility regulators, we are intimately aware of the rapidly accruing costs on both ratepayers and taxpayers. Because of the program failures, your constituents, either through electric rates or through the taxpayer-funded Judgment fund, have paid billions for re-racking of the utility spent fuel pools to accommodate more spent fuel, expensive on-site dry cask storage, increased security and to characterize the Yucca Mountain repository site. And they continue to pay.

NARUC member commissions in the 40 States served by nuclear-generated electricity have been involved in the troubled history of nuclear waste disposal since 1982. In the intervening thirty-plus years, we have been an integral component of the waste disposal policy debate, testifying frequently, engaging the Blue Ribbon Commission on America's Nuclear Future (BRC) at multiple levels, and suing the federal government to require compliance with the laws (i) mandating review of the Yucca Licenses and (ii) requiring suspension of the electric ratepayer surcharge when the government has effectively dismantled the only currently lawful disposal alternative.

Significantly, this involvement is driven by consensus and bipartisan advocacy resolutions passed by NARUC members. The most recent, passed in February of this year, is appended to this testimony. Since 1994, NARUC has passed 31 resolutions focused solely on this issue. Since 1991, our witnesses have continually testified that "the government has our money—we have their waste." Fifteen years have lapsed since the 1998 deadline for the Department of Energy (DOE), as mandated by law, to accept waste. Instead of fulfilling their obligations, the federal government has delayed and ultimately stopped all work on the program, even though ratepayers continuing paying for a permanent repository, taxpayers continuing paying for the DOE's inability to dispose of the waste, and States continue storing the government's waste. To put a finer point on it, the government now has even more of our money and the States now have even more of their waste.

I commend each of you for the efforts and tenacity that produced this legislation and for holding this hearing today. Unquestionably, some provisions of S.1240 are significant improvements over the status quo. However, others seem problematic and could continue or even potentially exacerbate the same problems which plague the current management scheme. In this testimony, I will try to highlight both.

#### NARUC PRINCIPLES

There are four substantive positions, which NARUC adopted in the February 2013 resolution, that act as the foundation for my comments: First, we have specifically

urged adoption of the BRC recommendations on the creation of a new organization outside of DOE with sole responsibility to manage nuclear waste. Second, NARUC's member commissioners are best positioned to protect ratepayer interests in nuclear waste disposal issues and must be part of the board of directors and any oversight bodies for the new entities. Third, the federal government must improve its dismal record on waste disposal. And, fourth, "the Administration and the Nuclear Regulatory Commission should comply with the law passed in 2002 approving Yucca Mountain as the repository site by completing the licensing process." NARUC's February 2013 resolution also points out that ratepayer costs for permanent disposal should be minimized. Interim storage is not a panacea, and should be used only where necessary and cost-effective. So while NARUC has specifically endorsed some consolidated interim storage, it is crucial that the amount, basis of need and duration of such interim storage is examined and not allowed to divert or delay the progress toward a permanent disposal site. Continued storage at permanently shutdown plants is unacceptable because it imposes costs on ratepayers without equivalent benefits and prohibits economic reuse of the site, whereas, relocation and consolidation would likely reduce the government's liability and improve security. Finally, NARUC joins with others that urge Congress not to adopt any structure that replicates the entire range of well-recognized problems that stymied progress on both the Yucca Mountain license review and resulted in the wholesale dismantling of the disposal program.

We believe your legislation is, overall, a step in the right direction.

#### OUTSTANDING YUCCA MOUNTAIN CONCERNS

Geologic disposal is a critical element of a sustainable used nuclear fuel and high-level radioactive waste management program. While not expressly reaffirming the requirements of the Nuclear Waste Policy Act (NWPA), the Nuclear Waste Administration Act of 2013 does not preclude its long-overdue enforcement. The bill should be revised to require action responding to the important statutory requirements to complete the review of the still-pending license for nation's first permanent repository at Yucca Mountain. NWPA is the law and should be enforced. Congress should provide the appropriate funding and direction to both the Nuclear Regulatory Commission (NRC) and the Department of Energy for the completion of the NRC's review of the Yucca Mountain license application for construction authorization. Ratepayers deserve to know whether the billions they've invested in the Yucca Mountain facility resulted in a safe site for the permanent disposal of high-level radioactive waste as years of independent scientific research indicates.

#### TITLE II—MANAGEMENT OF THE NUCLEAR WASTE PROGRAM

In Title II, Sections 201-205, the bill sets up a new agency to assume the responsibilities of the Secretary of Energy on siting, licensing, construction and operation of nuclear waste facilities. An Administrator, Deputy Administrator, and 5 member oversight board are to be appointed by the President, with the advice and consent of the Senate.

This is an improvement over the discussion draft as S.1240 moves the responsibility from DOE, an Executive agency, to an independent agency and it no longer requires the appointment of three federal officials to the Oversight Board. However, the proposed structure is inferior to a single-purpose federal corporation. The BRC recommended a similar approach to ensure accountability, insulate the organization from political interference and excessive turnover, and develop and implement a focused, integrated program. NARUC is on record specifically endorsing the adoption of the Blue Ribbon Commission's recommendations. As the BRC report suggests, a new management entity should be created outside of the Department of Energy with the sole purpose of managing the federal government's used nuclear fuel and high-level radioactive waste program. Key attributes of that entity include clear legislative authority, access to needed funding, and insulation from political interference. NARUC endorses a federal corporation model. The structure proposed in S.1240 does not address the political problems that plague the current management scheme—problems that have stymied progress and wasted taxpayer and ratepayer resources. A key aspect of this new "gov-corp" approach would be a Board of Directors that included several of NARUC's members. It would be logical to assign that Board, not the gov-corp, the responsibility to evaluate the adequacy of the Nuclear Waste Fund fees collected from ratepayers.

#### TITLE III—FUNCTIONS

In Title III, S. 1240 outlines the functions of the new agency—which includes in Section 303 a requirement for the Administrator to site, construct and operate a

pilot facility for storing priority waste, one or more additional facilities for non-priority waste, and one or more repositories. It outlines a consent-based procedure for siting these new facilities.

NARUC is still carefully evaluating this section of the bill. In our February resolution, we specifically endorse a consent-based approach to siting by requesting that new legislation require, as S. 1240 does, any new waste management organization to “engage with States and local governments in a more collaborative manner that can be guided by a negotiated consent agreement among the involved parties, whether for storage or disposal facilities.”

The resolution also points out that:

[c]ontinued storage at permanently shutdown plants is unacceptable because it imposes costs on ratepayers without equivalent benefits and prohibits economic reuse of the site, whereas, relocation and consolidation would likely reduce the government’s liability and improve security. The BRC report cites a study that contends that the savings from consolidated storage for this stranded spent fuel would be enough to pay for the cost of the storage facility. On an interim basis, only, pending development of full capacity of the permanent repository, it is better to store spent fuel at one (or more) central location(s) than to leave it at reactor sites. DOE and the utilities should pursue any and all such possibilities with a sense of urgency.

Laudably, this section of S.1240 recognizes the need for disposal. However, the recognition is limited. S.1240 should provide strong incentives for the agency to site a permanent disposal facility as soon as possible. While providing a consent-based process for siting additional repositories is positive, the bill’s target date of December 2048 (Section 504(b)(C)) for such a repository to be operational is not acceptable. The date is taken from the DOE Strategy’s proposed repository date. That document provides no support for this “new” target date—which is after all THIRTY FIVE YEARS from now. Such a target date effectively eliminates any sense of urgency necessary to timely compel government action. Moreover, the deadline is so distant that potential hosts for consolidated storage facilities would be justifiably nervous about becoming de facto permanent sites. Congress and the Administration should instead support timely completion of the Yucca Mountain process and call for a more reasonable (and far less distant) date for an additional repository sited under a consent-based approach.

#### TITLE IV—FUNDING AND LEGAL PROCEEDINGS

In Title IV, Sections 401-403, the bill sets up a new Working Capital Fund where ratepayer NWF assessments (currently about \$765 million per year) are deposited and available to the agency without further appropriation. It specifies that no fees can be paid into this fund after December 31, 2025 unless the Administrator is operating a nuclear waste facility by that date. The fees already collected in the NWF (about \$28.2 billion as of January 2013) remain subject to appropriation. Significantly, the Administrator must take the costs resulting from S.1240 into account when determining whether insufficient or excess revenues are being collected to ensure cost recovery.

##### *Access to Annual Assessments*

NARUC, obviously, has a strong interest in how the Nuclear Waste Fund functions. We will have an equally strong interest in how any Working Capital Fund will function. The federal government has collected billions from ratepayers and in return has given them a very expensive hole in the ground that the government is blocking any access to. While not a perfect solution, S.1240’s annual direct funding option is a tremendous improvement over the current system. Ideally, S.1240 should assure “full access to the corpus of the Nuclear Waste Fund” limited to supporting “achievement of repository program milestones” without additional appropriations. However, the guarantee that the putative entity, hopefully a gov-corp, will have access to fees on a going-forward basis is one way around the pressures inherent in the appropriations process. Still, this provision could be improved by also requiring the transfer of future accrued interest on the Nuclear Waste Fund and one time payments to the new Working Capital Fund.

##### *Linkage to “Nuclear Waste Facilities” vs. a Repository*

NARUC has not taken position on the specifics of any linkage requiring action on a repository. However, the requirement to require cut-off of assessments in 2025 is an improvement over the current procedure. It should, however, be amended to

specify a working repository instead of just “nuclear waste facilities.” That would provide strong incentives to expedite the repository siting process.

*Evaluation of the Adequacy of Ratepayer Assessments*

As noted earlier, the assessment of the adequacy of the fees should be conducted by a Board that includes State commission members, not by the Administrator. Moreover, the requirement on ratepayers to not only fund a new agency but all the costs resulting from S.1240 is inappropriate. For example, our February resolution specifies that: “The DOE, not electric utility ratepayers, must be accountable for the financial consequences of its failure to begin accepting waste in 1998.” Section 406(b)(1) of S.1240 requires utilities to settle existing lawsuits against the federal government to have access to future storage facilities. This effectively shifts the current government liability for non-performance (via the taxpayer funded Judgment fund) to electric ratepayers. NARUC has not endorsed and likely will not endorse such an approach. Performance remains the key to reducing the federal government’s liability. Moreover, the specification in Section 308(c) that the portion of the cost of developing, constructing, and operating the repository or storage facilities attributable to defense wastes “shall be allocated to the Federal Government and paid by the Federal Government into the Working Capital Fund,” is a welcome and necessary component of any disposal plan.

NARUC’s Resolution also specifies that the “BRC Report recommendations for consolidated interim storage represent a new use for the Nuclear Waste Fund that should be authorized only after consideration of the costs and benefits involved.” It is far from clear that the broad storage plans outlined in S.1240 reflect such considerations. These interim storage costs are needed only because the government has failed to permanently dispose waste in a working repository. At the same time, it appears an interim storage facility to concentrate waste currently stored at shuttered facilities may be appropriate. The BRC report cites a study that contends the savings from consolidated storage for this stranded spent fuel would be enough to pay for the cost of the storage facility.

We continue to closely examine S.1240 and discuss various provisions with other stakeholders. NARUC commends all of you for your efforts to break the current logjam on nuclear waste policy. We will help any way we can.

*Note: Appendix A—Resolution Regarding Guiding Principles for Management and Disposal of High-Level Nuclear Waste* has been retained in committee files.

The CHAIRMAN. Thank you very much, Mr. Boyd.

Mr. Smith, we’re going to welcome you.

Here’s where we are.

Senator Murkowski just showed we’re supposed to have 5 votes starting in about 5 minutes which would mean that we’d have like 20 minutes to at least get everybody’s testimony in. There’s 4 of you, so we ought to be able to be pretty close to it.

If you could go maybe 4 minutes, that would be great.

Mr. Smith, we’ll make your prepared remarks a part of the record.

**STATEMENT OF CHUCK SMITH, JR., COUNCIL MEMBER, AIKEN COUNTY, SOUTH CAROLINA, VICE CHAIR, ENERGY COMMUNITIES ALLIANCE**

Mr. SMITH. Chairman Wyden, Ranking Member Murkowski and members of the committee, thank you for inviting me to testify today making nuclear waste management solutions a priority through bipartisan legislation.

I’m Chuck Smith, Council Member of Aiken County, South Carolina and Vice Chairman of the Energy Communities Alliance, ECA, the association of local communities that are adjacent to, impacted by and support DOE facilities. I am testifying today on behalf of ECA members that include local communities that may potentially host a future consolidated storage facility or geologic repository.

ECA supports the goal of the legislation to create a process to address nuclear waste.

As you consider this legislation ECA offers the following recommendations.

One, local governments that are or may become host must be included throughout the entire decisionmaking process.

No. 2, a consent agreement between the local government, State and Federal entity must be legally enforceable and reflect the terms and conditions under which a community will host, agree to host, a nuclear waste facility.

On governance, local communities need to better understand how a new comprehensive nuclear waste policy will be implemented and by whom.

Disposition of Defense waste must be considered a priority.

Resources must be provided for educating local communities on the technical, health and safety and other issues related to nuclear waste.

Legislation must consider addressing impacts of transportation on local governments.

If a site is deemed safe and suitable and certain conditions are met several communities may be willing to host a nuclear waste storage and disposal mission. But they must be provided with the resources necessary to ensure their involvement from the beginning of the decisionmaking process to the end.

Support can only be built if a potential host community trusts that their interests and priorities are being meaningfully considered.

Funding is needed to develop public outreach and education programs and ensure local communities understand the proposed project including the potential risk and benefits.

These programs must start as early as possible in order to determine if enough support exists for a community to volunteer.

Our members recognize that there is no one size fit all consent agreement. Rather the terms of the consent agreement will be specific to each local host community and State. Local governments are uniquely positioned to negotiate these conditions on behalf of the impacted communities.

In regards to governance, whether the new Nuclear Waste Administration or FedCorp is responsible for implementing the Nuclear Waste Management program there needs to be clear legislative authority, appropriate autonomy, oversight mechanisms, access to required funding and transparent decisionmaking.

ECA urges that a local government representative be appointed to serve on the oversight board to ensure local and community perspectives are represented.

The disposition of legacy Defense waste is a priority for ECA. We recommend that it be addressed with more urgency. The legislation fails to outline how or on what basis decisions regarding Defense nuclear waste will be made. Many local communities have become de facto storage sites for legacy waste, some being stored in old tanks such as the one at Hanford and Savannah River.

Defense waste is older and colder than the commercial spent fuel. It can never be reused. It is ready to move. Failing to prioritize this disposal keeps this waste in our communities longer

than originally planned and may adversely affect DOE's cleanup program.

Much attention is paid to the liability associated with the government's failure to take title to commercial spent nuclear fuel. But the government also has an obligation to cleanup Defense sites.

ECA recognizes the challenges associated with developing a comprehensive nuclear waste policy. There are some outstanding questions that need to be explored further such as what will happen to Yucca Mountain.

Who will determine who is local in terms of affected parties and on what basis?

Why was an independent government agency chosen rather than a FedCorp?

We hope to work with the committee to provide input on these issues.

In closing local communities agree that nuclear waste management is a priority. A failure to address it increases a risk to our communities. It also threatens our energy security, impacts the economics of nuclear power as a viable energy resource and limits prospects for new nuclear development in keeping with all of the above energy strategy.

Thank you again for the opportunity to speak on behalf of our members.

The CHAIRMAN. Thank you very much, Mr. Smith. I know you were running out of breath.

[Laughter.]

Mr. SMITH. Four minutes.

[Laughter.]

[The prepared statement of Mr. Smith follows:]

PREPARED STATEMENT OF CHUCK SMITH, JR., COUNCIL MEMBER, AIKEN COUNTY, SC,  
VICE CHAIR, ENERGY COMMUNITIES ALLIANCE

Chairman Wyden, Ranking Member Murkowski and Members of the Committee, I thank you for inviting me to testify on S. 1240, a bill to establish a new organization to manage nuclear waste, provide a consensual process for siting nuclear waste facilities, ensure adequate funding for managing nuclear waste, and for other purposes. I am Chuck Smith, Council Member of Aiken County, South Carolina, and Vice Chairman of the Energy Communities Alliance (ECA), the association of local governments and Community Reuse Organizations that are adjacent to, impacted by, or support Department of Energy (DOE) activities. The testimony I present to you today is on behalf of ECA's members, the local elected and appointed officials at sites that send and receive nuclear waste, and sites that may potentially host a future consolidated storage facility, reprocessing facility or geologic repository. ECA appreciates the efforts made by Chairman Wyden, and Senators Murkowski, Feinstein and Alexander to introduce bipartisan legislation and to make nuclear waste management a priority. ECA supports the goal of the legislation—to create a process to address nuclear waste.

ECA communities have been home to federally-owned and operated nuclear facilities for over half a century. Local communities like mine currently store high-level defense nuclear waste, and have operated on good faith based on federal law, as codified in the Nuclear Waste Policy Act (NWPA), that the waste would ultimately be disposed of in a geologic repository. As hosts of DOE sites where this waste has been produced and stored, our communities have unique health and safety concerns. As potential hosts of future nuclear waste management and disposal facilities, we play a critical role in mitigating concerns through outreach and public education.

Local governments and others around ECA member sites meet together regularly to discuss how local governments and communities can work with each other and as partners with States and the federal government to address the nuclear waste problem. In addition, the communities have met with DOE and private companies

to highlight key issues such as what does consent based siting mean and what are the resources that the communities need to be able to engage at a local and national level on this critical issues.

As you consider this legislation, ECA offers the following recommendations:

1. Local governments that are or may become hosts must be included throughout the entire decision-making process.
2. A consent agreement between local government, state and a federal entity must be legally enforceable and reflect the terms and conditions under which a community will agree to host a nuclear waste facility.
3. On governance, local communities need to better understand how a new comprehensive nuclear waste policy will be implemented and by whom.
4. Disposition of defense waste must be considered a priority.
5. Resources must be provided for educating local communities on the technical, health and safety and other issues related to nuclear waste.
6. Legislation must consider and address the impacts of transportation on local governments.

Local governments are engaged on this important issue since it directly impacts our communities.

1. LOCAL GOVERNMENTS THAT ARE OR MAY BECOME HOSTS MUST BE INCLUDED  
THROUGHOUT THE ENTIRE DECISION-MAKING PROCESS

ECA supports the role for local governments outlined in the legislation specifically a consent-based siting process based on sound science, “meaningful collaboration with affected communities,” flexibility, and transparency.

Several local governments have identified that, if a site is deemed safe and suitable, and if certain conditions are met, the local community may be willing to accept a high-level waste and used nuclear fuel storage and/or disposal mission. The key conditions for local governments are (1) to be involved in the entire decision-making process and (2) to be provided with the resources necessary to ensure local government involvement.

Local governments considering hosting nuclear waste storage and disposal facilities need to become educated on nuclear issues. In turn, they must also educate citizens within their communities and work with their state governments to ensure everyone is involved in the decision. The local community that hosts a facility should know as much as they can about the health, safety and other issues that are inherent in hosting a site. Support can only be built if a potential host community understands the process, can choose independent experts to supply scientific data, and most importantly, if they trust that their interests, concerns and priorities are being meaningfully considered.

Once a community determines it is interested in hosting a new facility, the local government remains responsible for outreach to the community, as well as to state, regional and federal decision-makers. History has shown that support will be needed at all these levels to successfully site a new nuclear facility.

2. A CONSENT AGREEMENT BETWEEN LOCAL GOVERNMENT, STATE AND A FEDERAL ENTITY  
MUST BE LEGALLY ENFORCEABLE AND REFLECT THE TERMS AND CONDITIONS  
UNDER WHICH A COMMUNITY WILL AGREE TO HOST A NUCLEAR WASTE FACILITY

ECA supports the consent-based siting process outlined in the legislation. We agree that a successful siting process must allow “the affected communities to decide whether, and on what terms, the affected communities will host a nuclear facility,” in order to build long-lasting support.

Our members met recently to discuss how a consent-based agreement would be defined, concluding that there is no one-size fits all consent agreement—rather the terms of a consent agreement will be specific to each potential host community and State, as negotiated with the federal government. As part of a consent agreement, ECA agrees that local governments should broadly consider:

- Financial compensation and incentives.
- Economic development assistance.
- Operational limitations or requirements.
- Regulatory oversight authority.

ECA recommends that the strength and terms of the linkage between storage and disposal programs should be negotiated between the federal government, the State and the local government and included in the consent agreement.

In addition, ECA suggests that potential hosts may want to negotiate additional conditions to include in a consent agreement, such as:

- Amending existing compliance agreements or statutory limitations.
- An enforceable deadline for removing nuclear waste from a storage facility.
- Volume limitations.
- Penalties to be incurred by the federal government and/or State for failure to meet obligations under the consent agreement.
- Triggers for termination of the consent agreement.
- Agreement of indemnification to allow local communities to be compensated for any accidents or releases that impact their community.
- Opportunities for universities and community colleges related to future nuclear energy missions and workforce development.
- Research and development projects in coordination with national laboratories.
- Designation of transportation routes to a storage facility or repository.
- Requiring a position on any proposed oversight board and/or an advisory committee.

Local governments are uniquely positioned to negotiate these conditions on behalf of the impacted community; as is a Governor for the impacted State. If their conditions are met, a local community may be willing to accept a High-Level Waste (HLW) and Spent Nuclear Fuel (SNF) disposal mission.

ECA agrees that, once negotiated, the consent agreement should be ratified by law, binding on all parties, and not amended or revoked except by mutual agreement by the parties.

#### 3. ON GOVERNANCE, LOCAL COMMUNITIES NEED TO BETTER UNDERSTAND HOW A NEW COMPREHENSIVE NUCLEAR WASTE POLICY WILL BE IMPLEMENTED AND BY WHOM

Regardless of whether DOE, a new FedCorp, or the new Nuclear Waste Administration outlined in this bill is responsible for implementing the nuclear waste management program, there needs to be:

- Clear legislative authority.
- Appropriate autonomy.
- Oversight mechanisms.
- Access to required funding.
- Transparent decision-making

Our members are concerned about the length of time it will take to formally create this new entity and a new regulatory structure. For communities currently storing nuclear waste, delays could result in elevated risks to human health and the environment. As a result, these communities should be given resources to mitigate impacts of storing waste longer than expected.

In regards to the Oversight Board, ECA appreciates changes made from the discussion draft to move from three federal officials to five members selected through Presidential appointment and Senate confirmation. ECA urges that a local government representative be appointed to serve on the Oversight Board to ensure local and community perspectives and concerns are identified and represented.

#### 4. DISPOSITION OF DEFENSE WASTE MUST BE CONSIDERED A PRIORITY

ECA recommends that legislation address the management and disposal of legacy waste with more urgency. We do appreciate that the bill differs from the discussion draft in that the Secretary of Energy will have one rather than two years to determine whether to reevaluate the decision to commingle defense waste from nuclear waste from civilian nuclear power reactors; however, the legislation still fails to outline how or when decisions regarding defense nuclear waste will be made. Many local communities have become de facto storage sites for this legacy waste, some being stored in old tanks such as the ones at Hanford and Savannah River. The nation's defense waste is older and colder than the commercial spent fuel, it has no value as it can never be reused, and can be more easily transported to a storage or disposal facility. Failing to prioritize its disposal increases the risk to human health and the environment, adversely affects DOE's Office of Environmental Management cleanup program and the costs associated with legacy management. These local communities need to be given resources to evaluate the impacts of keeping this waste in place for longer than originally planned. Much attention is paid to the liabilities associated with the government's failure to take title to commercial SNF, but the government also has an obligation to clean up defense sites. Further delays could violate legal commitments the federal government has made with the State and could cause taxpayer dollars to be spent on fines and litigation instead of invested in cleanup.

5. RESOURCES MUST BE PROVIDED FOR EDUCATING LOCAL COMMUNITIES ON THE TECHNICAL, HEALTH, SAFETY AND OTHER ISSUES RELATED TO NUCLEAR WASTE

Funding is needed to develop public outreach programs, to educate stakeholders, government officials in county, city and town agencies, students, employees and individuals involved with emergency response and average citizens. Funding will also allow a community to bring in experts it trusts and whose responsibilities are to that community.

Outreach programs will ensure local communities understand the proposed project, the health and safety issues, the real vs. perceived risks, and will provide awareness of potential benefits—such as job creation or infrastructure development. Education and outreach efforts may include: hosting meetings in the community; creating public information campaigns; coordinating programs with local universities and community colleges; building websites and producing written material for distribution.

These programs must start as early as possible in order to determine if enough support exists within a community for it to volunteer for a nuclear waste mission.

6. LEGISLATION MUST CONSIDER AND ADDRESS THE IMPACTS OF TRANSPORTATION ON LOCAL GOVERNMENTS

While the bill specifically states that notification, financial and technical assistance be provided to State and Indian tribes for transportation planning purposes, local governments are not mentioned. In order to maintain the strong track record that exists for transporting nuclear waste, resources should also be provided at the local level for training, equipment, emergency responders and public education. This will help ensure consistency among all affected parties as waste moves across the country.

CONCLUSION

ECA recognizes the challenges associated with developing a nuclear waste policy and siting waste facilities. This legislation reflects the hard work done to address these challenges and implement the Blue Ribbon Commission's recommendations. From the energy communities' perspective, there are some outstanding questions that need to be explored further, such as what will happen with Yucca Mountain? Who will determine "who is local" in terms of affected parties and on what basis? Why was an independent government agency chosen rather than a FedCorp? What does the Committee see as the advantages? We hope to work with the Committee and other nuclear stakeholders to provide input on these issues.

In closing, ECA appreciates the opportunity to provide this testimony. We applaud this Committee's work to address nuclear waste management and implement the recommendations of the Blue Ribbon Commission. Our members agree that nuclear waste management is a priority, and a failure to address it increases the risks to the health and environment of our communities. It also threatens our energy security, impacts the economics of nuclear power as a viable energy resource, and limits prospects for new nuclear development in keeping with an "all of the above" strategy.

ECA looks forward to providing any assistance we can as your work continues. More information about the Energy Communities Alliance can be found at [www.energyca.org](http://www.energyca.org).

The CHAIRMAN. I appreciate it.

Thank you also, Mr. Fertel, because I know you all have been cooperating on the feasibility of onsite storage. We appreciate it.

Mr. Fertel.

**STATEMENT OF MARVIN S. FERTEL, PRESIDENT AND CHIEF EXECUTIVE OFFICER, NUCLEAR ENERGY INSTITUTE**

Mr. FERTEL. Thank you, Chairman Wyden and Ranking Member Murkowski for the opportunity to testify today.

It is industry's view that consolidated storage and a willing host community and State is the quickest route for the Federal Government to begin moving used fuel from commercial and Federal sites and to reduce the taxpayer liabilities that are estimated, as Ranking Member Murkowski said, to reach \$20.8 billion by 2020. Con-

solidated storage is not a complete answer. But is a prudent investment while continuing to pursue geologic disposal and is a good contingency in case the repository program suffers additional delays.

We're confident that a consolidated storage facility can be operational in 10 years assuming a successful 3-year consent based siting process.

However, in addition to consolidated storage the industry continues to believe that consistent with existing law, the Yucca Mountain licensing process must be completed.

I want to thank Senators Wyden, Murkowski, Feinstein and Alexander for their effort to establish a sustainable program under new management outside of the Department of Energy. The industry believes that the operating characteristics of a new management entity must closely resemble those of a corporation rather than a Federal agency. It must come as close as possible to the decisionmaking project management capability that is characteristic of a corporate organization.

Congress and the Administration should retain an oversight authority. The board of directors should be appointed by the President with the advice and consent of the Senate. But the chairman of the board should be elected by the board members.

The chief executive officer should be appointed by the board and not subject to the political uncertainties associated with Presidential appointments. It is also essential that the CEO of the organization have the authority to hire his or her senior staff and deputies rather than having them appointed by the President.

Since this new management entity will be in existence as long as commercial nuclear power is used in the United States and beyond, the CEO must have flexibility to reorganize the management structure when appropriate.

We would encourage the proposed legislation to be altered to reflect our comments.

We agree with the comments made by Commissioner Boyd about the importance of having access to the corpus of the Nuclear Waste Fund as well as to move the interest and the onetime fee into the Capital Fund.

The industry is committed to reducing the growing Federal liability through the establishment and execution of a sustainable program in a timely manner. However, we strongly disagree with the legislative provision which intends to reduce liability by requiring contract holders to settle all claims against the United States as a condition precedent for taking title and moving used fuel to a storage facility. This would be a denial of a company's right under the standard contract to have its used fuel taken unless it agreed to accept a settlement on whatever terms the government wanted to impose.

We strongly recommend that this provision be removed from the proposed bill.

Energy companies, their local communities and states, the American taxpayers deserve to have confidence in a Federal program that will meet the statutory and contractual obligations to safely and securely accept transport, store and ultimately dispose of used nuclear fuel and high level radioactive waste. While the industry

has and always will manage its used nuclear fuel safely and securely, we believe that action by Congress is necessary now to establish a sustainable program and reduce the liabilities for the taxpayers as soon as possible.

The Nuclear Waste Administration Act of 2013 is a significant step forward. We look forward to working with the committee and the Senators to have it come as legislation.

Thank you.

[The prepared statement of Mr. Fertel follows:]

PREPARED STATEMENT OF MARVIN S. FERTEL, PRESIDENT AND CHIEF EXECUTIVE  
OFFICER, NUCLEAR ENERGY INSTITUTE

Chairman Wyden, Ranking Member Murkowski, members of the committee, thank you for the opportunity to speak today about the recently introduced Nuclear Waste Administration Act of 2013. I am Marvin Fertel, President and CEO of the Nuclear Energy Institute (NEI). NEI is responsible for establishing unified nuclear industry policy on regulatory, financial, technical and legislative issues affecting the industry. NEI members include all companies licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel cycle facilities, materials licensees, labor organizations, universities and other organizations and individuals involved in the nuclear energy industry.

We welcome the Senate's leadership in addressing the federal government's role in the safe and secure management and disposal of commercial used nuclear fuel through this legislation. We also applaud Senators Wyden, Murkowski, Feinstein, and Alexander for leading the effort and for releasing a discussion draft to obtain stakeholder comments before introducing the legislation; a process which resulted in beneficial changes. Although the proposed legislation represents a positive start to overhauling the federal program and incorporates some of the stakeholder comments provided on the discussion draft, additional enhancements should be made to ensure the creation of a sustainable integrated program.

Over the past 70 years, applications of nuclear fission—including research, medicine, naval propulsion and power production—have produced immeasurable benefits for our society. They have also resulted in a large and growing inventory of used nuclear fuel and high-level radioactive waste. The commercial nuclear industry and the federal government have demonstrated that they can safely and securely store used nuclear fuel and high-level radioactive material. About 70,000 metric tons of uranium (MTU) of commercial used fuel is safely managed at nuclear energy facilities, but storing the fuel on site was never meant to be a long-term solution. By now, pursuant to the Nuclear Waste Policy Act (NWPA), the Department of Energy (DOE) should have already moved more than 28,000 MTU of reactor fuel from our sites and should be moving an additional 3,000 MTU every year.

Consumers of electricity generated at nuclear energy facilities have committed more than \$35 billion since 1982 to the Nuclear Waste Fund for the federal program that should have begun removing used fuel from commercial nuclear power plant sites 15 years ago. The Department of Energy continues to collect more than \$750 million per year from consumers, and the fund accrues more than \$1 billion in investment income on the remaining balance of over \$28 billion. The collection of Nuclear Waste Fund fees is ongoing, despite the fact that the Department of Energy, without any technical basis, terminated the Yucca Mountain repository project in 2010 and has yet to implement a new program.

The industry and the DOE had been working for decades with considerable success on the development of a deep geologic repository in the United States for used nuclear fuel and high-level radioactive waste, until the program was terminated and the Office of Civilian Radioactive Waste Management (OCRWM) dissolved in 2010. These decisions were not supported by the industry and have resulted in court actions that would have otherwise been unnecessary. The industry continues to support the completion of the Yucca Mountain licensing process and, as a result of the Administration's actions, the industry has filed suit against DOE challenging the continued collection of the Nuclear Waste Fee in the absence of a federal program. Oral arguments in the case are scheduled for September.

## THE PATH TO SUCCESS

The nation would be best served by adherence to the following principles that will ensure the establishment of a stable used nuclear fuel management policy and program:

- The United States must have a durable policy supported by a dedicated and sustainable infrastructure to manage used nuclear fuel and high-level radioactive waste responsibly.
- The United States must have a plan for the ultimate disposal of the byproducts from nuclear energy.
- An ideal technical solution is not required to begin implementation of a new policy direction. Evolutionary, and perhaps revolutionary, advances in technology improvements can be incorporated over time without deferring decisions until decades of research are completed.
- The successes and failures of the past must be understood to help guide future innovation, policies, and management, while building public trust in the systems and facilities ultimately developed.

Legislative action is needed to put such an enduring policy and program in place. The industry supports an integrated used nuclear fuel management strategy consisting of six basic elements:

- A new management and disposal organization outside of the Department of Energy (DOE).
- Access to the Nuclear Waste Fund and annual fees for their intended purpose, without reliance on the annual appropriations process but with appropriate Congressional oversight.
- Completion of the Yucca Mountain repository license review. Nuclear electric consumers deserve to know whether Yucca Mountain is a safe site for the permanent disposal of high-level radioactive waste, as billions of dollars and years of independent scientific research suggest.
- A consolidated storage facility for used nuclear fuel and DOE's high-level radioactive waste in a willing host community and state and substantial progress toward developing the Yucca Mountain site and/or a second geologic repository. A consolidated storage facility would enable the DOE or a new management entity to move used nuclear fuel from decommissioned and operating plants long before a repository or recycling facilities begin operations. Used fuel from decommissioned commercial reactor sites without an operating reactor should have priority when shipping commercial used fuel to the storage facility.
- Research, development and demonstration on improved or advanced fuel-cycle technologies to close the nuclear fuel cycle.
- NRC's promulgation of a temporary storage rule and an eventual legislative determination of waste confidence supported by a sustainable federal program founded on the elements above.

Since the Obama Administration suspended the NRC's review of the Yucca Mountain repository license application in 2010, the federal government has not had a viable used fuel management program. The Administration's Blue Ribbon Commission on America's Nuclear Future (BRC), established to recommend a new direction for the program, published its final report in January 2012. Among its key recommendations were:

- A new, consent-based approach to siting future nuclear waste management facilities.
- A new organization dedicated solely to implementing the waste management program and empowered with the authority and resources to succeed.
- Access to the funds nuclear utility ratepayers are providing for the purpose of nuclear waste management.
- Prompt efforts to develop one or more geological disposal facilities.
- Prompt efforts to develop one or more consolidated storage facilities.

The BRC's recommendations are generally consistent with the industry's integrated used nuclear fuel management strategy and are supported by the industry with the exception that the BRC did not address the need to complete the Yucca Mountain licensing process.

In January 2013, the Obama Administration released its "Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste." This strategy is also generally consistent with the industry strategy but is dependent upon Congress to establish direction and create a program.

## GROWING FEDERAL LIABILITY

Even before the Office of Civilian Radioactive Waste Management was closed, the urgency for DOE to fulfill its statutory and contractual responsibilities to manage used fuel and high-level radioactive waste was growing, as was the associated cost to the taxpayer. The DOE was required by statute and contract to begin moving used fuel from reactor sites in 1998. The taxpayers, through payments from the taxpayerfunded Judgment Fund, are paying for court-awarded damages from DOE's partial breach of its contracts with electric companies. The BRC report estimated that the damage awards from the Judgment Fund will total \$20.8 billion if the federal government begins accepting used fuel in 2020 and may increase by as much as \$500 million for each year after 2020 that DOE does not begin to accept used fuel. To date, approximately \$2 billion has already been paid in damage and settlement awards. This expense, for which the taxpayer receives no benefit, is in addition to monies paid into the Nuclear Waste Fund by consumers of electricity produced from nuclear energy. Given the absence of any federal program, it has become virtually impossible for the DOE to begin to meet its obligation to move used fuel before 2020. The industry is committed to reducing the growing federal liability through the establishment of a sustainable federal program. The Nuclear Waste Administration Act of 2013 also recognizes the need to reduce the federal liability as quickly as possible. However, the liability can only be reduced through the establishment of a program and execution of the program by the new management entity in a timely manner.

The industry disagrees with the provision in the draft legislation which tries to reduce liability by requiring contract holders to settle all claims against the United States as a condition precedent for taking title to and moving used fuel to a storage facility. This forced settlement provision should be removed from the proposed bill. The industry has already demonstrated its commitment to negotiate settlements in good faith. However, the effect of this provision would be a denial of a utility's right under the Standard Contract to have its used fuel taken by the federal government unless the utility agreed to accept a settlement of its breach of contract claims on whatever terms the government wanted to impose. That would effectively deprive the utilities of their contractual rights, under which the government is supposed to take their spent fuel in exchange for many hundreds of millions of dollars in Nuclear Waste Fees paid to the government. A more effective and fairer approach would be to direct the Department of Justice to settle the breach of contract lawsuits on reasonable terms with willing contract holders without imposing conditions on the settlements.

## A NEW FEDERAL USED FUEL MANAGEMENT CORPORATION IS NEEDED

A key element to the long-term success of a federal program is establishing a new entity to assume program management responsibility from the DOE. Industry and numerous stakeholders support the concept of a federal corporation. The operating characteristics of a new management entity must more closely resemble those of a corporation with a clear mission rather than a federal agency in order to succeed. The new management entity must come as close as possible to the decision-making and project management capability and discipline that is more characteristic of a corporate organization.

Similar to commercial companies, the chief executive officer of the new management entity should be selected and appointed by a board of directors. The board should be appointed by the President with the advice and consent of the Senate for terms that would span at least two presidential administrations. The industry recommends that at least three members of the board be appointed from entities that contribute or have contributed to the Nuclear Waste Fund and that at least two members of the board be appointed from state public utility commissions or representatives thereof. The legislation should also specify minimum qualifications for board members and define a quorum as being simply more than half of the standing directors. The chairman of the board should be elected by its members. The CEO should not be subjected to the political uncertainties associated with presidential appointments so that he or she, while remaining accountable to the board, can focus entirely on performing the task at hand with the requisite attention to nuclear safety and security that is expected from all employees of a nuclear industrial company. The instability that can be created as a result of the political appointment process is wellillustrated by the now-defunct Office of Civilian Radioactive Waste Management (OCRWM). This office, whose director was appointed by the President and confirmed by the Senate, never realized stable long-term leadership because of the turnover of directors associated with changes at the White House. From 1983 to 2010, OCWRM had six appointed and confirmed directors and nine acting directors.

The incumbent director was replaced with every new administration. It is also essential that the CEO of the organization have the authority to hire his or her senior staff and deputies, in consultation with the board as appropriate, rather than having them appointed by the President. Since this new management entity will be in existence as long as commercial nuclear power is used in the United States, and beyond, the CEO must have the flexibility to reorganize the management structure when appropriate, without artificial constraints imposed by legislation.

The Nuclear Waste Administration Act of 2013, as currently structured, would not sufficiently insulate the new Nuclear Waste Administration leadership from the political process since both the administrator and deputy administrator would be appointed by the President with the advice and consent of the Senate, as are the members of the proposed oversight committee. Numerous studies of the management issue have been carried out over the past decades, from the Congressionally mandated Advisory Panel on Alternate Financing and Managing Radioactive Waste Facilities Report in 1984 through the BRC recommendations in 2012. The studies advocate consistently for a management entity with a corporate structure providing continuity, efficiency and an appropriate degree of insulation from undue political influence.

When the new management entity is created, Congress and the Administration should retain an oversight authority, but this role should be structured to avoid creating an impediment to the efficient operation of a new management entity. The Nuclear Waste Administration Act of 2013 addresses Congressional oversight appropriately but, in one instance, reduces this oversight compared to the Nuclear Waste Policy Act by removing Congressional review of changes in the nuclear waste fee. The industry recommends that Congressional oversight over the nuclear waste fee be maintained.

#### DIRECT ACCESS TO SUFFICIENT FUNDING

Enduring leadership is essential, but not sufficient in its own right to create a successful and sustainable program. As the Nuclear Waste Administration Act of 2013 recognizes and addresses, a new management entity must have direct access to, and control over, the funds necessary to implement the program. The industry and consumers have provided and continue to provide these funds which should be secure and available to program managers. Unfortunately, this has not been the case. The Congressional budgeting and appropriations processes have resulted in appropriations to OCRWM being considered in the context of the overall DOE and federal government budget and not simply in the context of the available funds in the Nuclear Waste Fund. Historically, this resulted in lower appropriations than requested which contributed to project and schedule delays. The BRC report, which discusses the Nuclear Waste Fund in great detail, states that “a program that was intended to be fully self-financing now has to compete for limited discretionary funding in the annual appropriations process, while the contractual user fees intended to prevent this from happening are treated just like tax revenues and used to reduce the apparent deficit on the mandatory side of the federal budget (which deals with expenditures and receipts that are not subject to annual appropriations).” Recognizing that these funds were collected with the indisputable intention of supporting clear statutory and contractual obligations, there is not a rational basis for considering their use discretionary.

To avoid perpetuating the current funding limitations and inequities, a new management entity must be given unrestricted access to both the Nuclear Waste Fees and the Nuclear Waste Fund with Congressional oversight of the efficient use of these funds continuing. This will enable the new management entity to appropriately manage and fund, without reliance on Congressional appropriations, the development of storage and disposal facilities consistent with standard industry practices for other large-scale nuclear safety-related projects. The current legislation achieves this goal for the Nuclear Waste Fee payments. The industry, though, believes that the corpus of the Nuclear Waste Fund and its earned interest, in addition to the Nuclear Waste Fees, also must be made available to the new management entity for its intended purpose without being subject to competing appropriations. This, however, could be accomplished with transfers to the new management entity over a reasonable schedule defined within the legislation.

#### GEOLOGIC DISPOSAL AND CONSOLIDATED STORAGE ARE CRITICAL

In the current fuel cycle and in all foreseeable advanced fuel cycles, a geologic repository will be required. Pursuit of a geologic repository and a consolidated storage facility should occur simultaneously, as the Nuclear Waste Administration Act of 2013 would require. A consolidated storage facility would enable the management

entity to move used nuclear fuel from shutdown and operating plants long before a repository or recycling facilities begin operations and is the quickest way to stem the increase in damage awards beyond the estimated \$20.8 billion through 2020.

Developing consolidated storage would be an appropriate use of resources and a prudent financial investment that would permit the federal government to begin meeting its obligations, limiting the damages paid by the taxpayers, restoring faith in the federal program, and paving the road for a repository. As the industry is well aware, technical and political hurdles can arise which can significantly delay a project or curtail the operation of a facility. A consolidated storage program is a good contingency in case the repository program suffers delays either as a result of funding issues or unforeseen circumstances. In addition to the industry and the BRC, the National Conference of State Legislatures, the governors of Maine, Maryland, Pennsylvania, and Vermont and many other organizations and political leaders have all called publicly for action to implement the BRC recommendations and, specifically, development of a consolidated storage facility.

Attachment 1\* provides a comparison of hypothetical timelines for the development of a consolidated storage facility using a consent-based siting process and the Yucca Mountain repository assuming that both programs are underway in 2014. As the attachment illustrates, the completion date for Yucca Mountain will be highly dependent on the rate at which funds are expended. Despite the fact that the Nuclear Waste Fund has more than sufficient funding to complete the Yucca Mountain project, it is highly unlikely that, in the absence of a new management entity with direct access to the Nuclear Waste Fees and Fund, the program could be appropriated sufficient funding necessary (approaching \$2 billion annually) to complete licensing and construction in the near term. The 2027 opening date for Yucca Mountain, shown in Attachment 1, assumes successful NRC licensing, efficient management, full funding, and positive support from the State of Nevada. Even if these assumptions are met, it will still be challenging to complete the Yucca Mountain project by 2027; an endeavor that will cost more than \$14 billion in 2012 dollars. Until it is clear that all of these assumptions can be met, the industry strongly believes that it is prudent to pursue consolidated storage in parallel with repository activities. If a second repository is pursued, the siting, licensing, and construction will most likely take close to three decades. By 2040, the damages paid by the taxpayer could be as much as \$30 billion.

A consolidated storage facility could be built at a fraction of the cost of a repository. The Electric Power Research Institute (EPRI) estimates a 40,000 MTU storage facility could be built for approximately \$525 million in 2012 dollars. As Attachment 1 illustrates, the industry estimates that a consolidated storage facility could be opened by 2024 in a willing host community and state if work begins in 2014. The main assumption in this estimate is the 3-year time to execute a consent-based siting process. The industry feels this is a reasonable assumption for a consolidated storage facility but that a consent-based siting process for a second repository could take substantially longer. The estimated times for design, licensing, and construction are based on a review of licensed and constructed dry cask storage facilities at reactor sites and the Idaho National Laboratory. To ensure that the licensing process is efficient, the industry requests that the legislation instruct the NRC to issue a final decision approving or disapproving a license for a consolidated storage facility no later than two years after the date of submission.

A consolidated storage facility would be used to meet DOE's statutory and contractual obligations by removing used fuel from commercial nuclear power sites, taking title to the used fuel, and shipping it to the storage facility, which could be collocated with the repository, where it would be stored until a final disposal or alternate disposition pathway is available. In addition to storing used nuclear fuel from commercial facilities, a consolidated storage facility could also store DOE and U.S. naval reactor fuel. This could provide a pathway for the federal government to meet its obligations to remove this material from the various states where it is stored and eventually prepare it for final disposal.

Although the industry supports the completion of the Yucca Mountain licensing effort, we recognize that it may be appropriate for the new management entity to begin efforts to site a second repository. Since we expect nuclear power to continue to be a significant contributor of electricity in the United States, used fuel will continue to be produced. It is generally agreed that Yucca Mountain can accommodate significantly more used fuel than the 70,000 MTU limit imposed in the NWPA. Even though the limit is appropriately removed in this legislation, it may still be necessary to site a second repository. Since the NRC and the Environmental Protection Agency have Yucca Mountain repository-specific regulations and the generic reposi-

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\* Illustration has been retained in committee files.

tory regulations are generally considered to be out of date, the industry recommends that the NRC and the Environmental Protection Agency be instructed, in this legislation, to develop new generic repository regulations. The search for a new repository will not be successful unless the regulatory structure is properly defined prior to the search.

#### PRIORITY TO SHUTDOWN SITES

The Department of Energy and eventually the new federal management entity should collaborate with industry to ensure that transportation issues, including efficient ordering of used fuel acceptance from commercial sites, are addressed appropriately. Prior to removing used fuel from operating plant sites, the industry agrees that priority should be given to the shutdown commercial sites that no longer have an operating reactor. This approach, supported by the BRC and the Nuclear Waste Administration Act of 2013, has numerous advantages. It would permit shutdown sites, which in many cases have only used fuel storage remaining at the site, to be fully decommissioned and the land used for other purposes. In addition, the taxpayer, through the taxpayer-funded Judgment Fund, would no longer be liable for the continued cost of storing used fuel at these shutdown sites at a cost of millions of dollars per year per site.

#### CONSENT-BASED FACILITY SITING

Strength of leadership and financial resources alone will not guarantee success in siting new facilities. As the BRC recommends and the Nuclear Waste Administration Act of 2013 proposes, a consent-based siting process is essential to developing enduring local and state support for new facilities. Since the release of the BRC report, the consent-based siting recommendation has received significant support and prompted questions about how such a process would be implemented.

A consent-based siting process should not be defined prescriptively, but permitted to develop organically among the interested parties. Regardless of the specific process for developing consent, success will be measured by an agreement among the interested parties that is legally enforceable as described in the Nuclear Waste Administration Act of 2013. During the process, the parties involved must negotiate in good faith and be open to creative solutions to address issues that arise, including oversight, incentives and benefits. The industry does not believe that it is necessary to establish multiple additional criteria—or linkage between development of consolidated storage and permanent disposal—that, in essence, are intended to “protect” the state, affected local community and/or tribe from being forced to host an unwanted facility. In this regard, we appreciate the changes made from the discussion draft that provide more responsibility to the communities and states to establish the framework and conditions under which they wish to operate a consolidated storage facility. There are communities that would see hosting such facilities as a benefit. The siting and operation of the Waste Isolation Pilot Plant in New Mexico is proof that such a process can be successful.

#### CONCLUSION

Energy companies, their local communities and states, and American taxpayers deserve to have confidence in a federal program that will meet its statutory and contractual obligations to safely and securely accept, transport, store, and ultimately dispose of used nuclear fuel and high-level radioactive waste. The Nuclear Waste Administration Act of 2013 is a significant step forward and, with the enhancements proposed here, it could create a sustainable program that would garner wide stakeholder support. In addition to the enhancements mentioned above, the industry has developed legislative principles for nuclear waste reform, included as Attachment 2\*, which should also be considered when revising the Nuclear Waste Administration Act of 2013. While the industry has and always will manage its used nuclear fuel safely and securely, we believe that action by Congress is necessary now to establish a sustainable program and reduce the liabilities for the taxpayer as quickly as possible.

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

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\*Document has been retained in committee files.

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

Mr. FETTUS. Yes, thank you.

I'm Geoffrey Fettus, an attorney with NRDC. Thank you so much for having us.

Last year with the introduction of S. 3469 we were optimistic meaningful solutions were achievable. We're less optimistic today unfortunately. We worry that we could miss a prime opportunity to put in place a durable, lasting nuclear waste legislation that draws support from both sides of the aisle. We hope this process can be salvaged.

I'll focus only on two points today.

Geologic repositories isolated from the biosphere are the only technically, economically and morally viable solution for nuclear waste. NRDC strongly supports the development of an improved legislative pathway for geologic repositories. We're disappointed that S. 1240, in our view, severs the link between interim and final nuclear waste storage doing away with primacy of repositories as a solution. Just as harmful, potentially creating a de facto, long-term, above ground site that becomes permanent.

Eviscerating the link between storage and disposal guarantees a repeat of the mistakes we've seen made over the past half century. We think virtually ensures a moribund repository program. To give you an example of a well constructed link between storage and disposal last year's bill barred any future nuclear waste administration from taking title to and storing spent fuel before ratification of the consent agreements included in section 304 of last year's bill.

A provision that bars moving forward with interim storage before a repository program is under full development wisely puts the horse before the cart and ensures no temporary site becomes permanent. This bill has no such provision and allows interim storage to move forward regardless of the state of the repository program.

Let there be no mistake, we support moving forward with limited interim storage. But we urge a pilot project. Here I stress pilot project, as in smaller scale and initial proof of concept.

We think you can do it in a relatively short timeframe for storage that can address stranded waste at the 13 closed reactor sites or for spent fuel that fails to meet certain safety thresholds. An example of such a site is the hardened outhouse facility in Germany. Volunteer sites that have already demonstrated consent are operating commercial reactors, far less in the way of new infrastructure would be required and capacity for fuel management and transportation, as noted by Senator Murkowski as a significant concern, is already in place along with the consent necessary for hosting nuclear facilities in the first instance and by keeping consolidated interim storage spent fuel under the guardianship of the industry that produced the waste in the first place, Congress ensures careful progress with a repository program because all parties will know it's necessary.

Turning quickly to point two.

We applauded the consent based approach in last year's bill and in the BRC. That approach, we think, has been lost in this iteration. We urge you to rectify this mistake.

Further we urge you to consider that any consent based process will enjoy a far higher probability of success if Congress removes the Atomic Energy Act's exemptions for radio nuclides from our Nation's water and hazardous waste laws. These anachronous exemptions from environmental law are at the heart of State and public distrust of both government and nuclear facilities. We hope such a suggestion, with its advancement of State rights, garner support from both sides of the aisle.

If EPA and most importantly, the states, had full legal authority and could treat radio nuclides as they do other pollutants clear cleanup standards could be promulgated and we could be much farther along in remediating the toxic legacy of the cold war.

Further we could avoid some of the ongoing disputes over operations at commercial sites. Even the BRC recognized this as a noted New Mexico's regulation of the WIPP facility is a critical element of public acceptance.

In conclusion, the committee should reinstate the primacy of geologic repositories and ensure that no temporary site becomes the de facto permanent site and already seen many others could support such legislation.

I'll close with the overarching premise that we hope guides your work. Years or decades from now others will face the same predicament we face here today unless you create a transparent, equitable process with strong public health and environmental standards that can't be manipulated in order to license a site that may not be suitable.

Thanks again for this opportunity.

[The prepared statement of Mr. Fettus follows:]

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

#### I. INTRODUCTION

Chairman Wyden and Ranking Member Murkowski, and members of the Committee, thank you for providing the Natural Resources Defense Council, Inc. (NRDC) this opportunity to present our views on S. 1240, a bill [T]o establish a new organization to manage nuclear waste, provide a consensual process for siting nuclear waste facilities, ensure adequate funding for managing nuclear waste, and for other purposes.

NRDC is a national, non-profit organization of scientists, lawyers, and environmental specialists, dedicated to protecting public health and the environment. Founded in 1970, NRDC serves more than one million members, supporters and environmental activists with offices in New York, Washington, Los Angeles, San Francisco, Chicago and Beijing. NRDC has worked on nuclear waste issues for over four decades, and continues to be engaged in shaping U.S. law and policy on the nuclear fuel cycle.

On September 12, 2012, NRDC testified before this committee on S. 3469, the template for S. 1240. We commended the preceding bill's adherence to three principles that, in our view, must be complied with if America is ever to develop an adequate, safe solution for nuclear waste—(1) radioactive waste from the nation's commercial nuclear power plants and nuclear weapons program must be buried in technically sound deep geologic repositories, the waste permanently isolated from the human and natural environments; (2) governing legislation must contain a strong link between developing waste storage facilities and establishing final deep geologic repositories that ensures no "temporary" storage facility becomes a permanent one; and (3) nuclear waste legislation must embody the fundamental concept that the polluter pays the bill for the contamination that the polluter creates.

NRDC cannot support S. 1240 in its present form, as described in this testimony and consistent with our 2012 testimony and May 2013 comments filed on the Discussion Draft. NRDC cannot support S. 1240 in its present form because the bill:

1) severs the crucial link between storage and disposal; 2) places highest priority on establishing a Federal interim storage facility at the expense of getting the geologic repository program back on track; 3) fails to ensure that adequate geologic repository standards will be in place before the search for candidate geologic repository sites commences; 4) fails to provide states with adequate regulatory authority over radiation-related health and safety issues associated with nuclear waste facilities in their respective states; and 5) fails to prohibit the Administrator (or Board) from using funds at his disposal to engage in, or support spent fuel reprocessing (chemical or metallurgical), ostensibly to improve the waste form for permanent disposal of spent fuel.

Regrettably, it appears that the authors of S. 1240 have rejected several key recommendations of the President's Blue Ribbon Commission for America's Nuclear Future (BRC). Instead, the bill wrongly prioritizes the narrow aim of getting a government-run interim spent fuel storage facility up and running as soon as possible—a priority with potential financial benefits for business interests. However, we believe S. 1240 is salvageable and we look forward to engaging in constructive efforts to address the shortcomings we present in this testimony.

Of the five objections enumerated above, the first one—severing the link between interim and final nuclear waste storage—is possibly of greatest concern because it means the bill could result in the creation of de facto long-term above-ground repositories. As we've stressed since the initiation of the BRC process, law should establish a strong linkage that bars an interim or temporary storage site from becoming a de facto repository. NRDC concurs with the former Chairman of the Energy and Natural Resources Committee who cautioned that interim storage needs to be done “only as an integral part of the repository program and not as an alternative to, or de facto substitute for, permanent disposal.”<sup>1</sup> Such caution is consistent with decades of national policy and the purpose of the Nuclear Waste Policy Act (NWPA), 42 U.S.C. § 10131(b)(1). Indeed, last year we expressed concern that the pilot program in S. 3469 could lessen the impetus for a strong repository program. Unfortunately S. 1240 goes further and effectively eviscerates the link between storage and disposal. This guarantees a repeat of the mistakes we have seen made over the past half century and virtually ensures a moribund repository program. Further, NRDC believes that if S. 1240 becomes law, a future Congress will be forced to deal with this issue once again, with no meaningful disposal solution on the horizon.

After more than 55 years of failure, the history of U.S. nuclear waste policy offers Congress all the lessons it needs and it can ignore them only at its peril. Efforts such as the failed bedded salt repository in Lyons, Kansas (1972) and the 1975 abandonment of the 100-year Retrievable Surface Storage Facility (RSSF) are decades distant, but directly relevant to this Committee's consideration of S. 1240. Adopting a short-term, politically expedient course for interim storage at the expense of durable solutions is the recipe for failure for both storage and disposal facilities. The failed Yucca Mountain project is merely the latest and largest of these debacles. While the BRC rightly recognized the 1987 amendments to the NWPA were “highly prescriptive” and “widely viewed as being driven too heavily by political considerations,” the BRC failed to take into account (or recount) all that has transpired over the past three decades.

Put bluntly, first the U.S. Department of Energy (DOE) and then Congress corrupted the site selection process that resulted in selecting Yucca Mountain as the only option for a deep geologic repository. The original NWPA strategy contemplated DOE first choosing the best out of four or five geologic media, then selecting a best candidate site in each medium. Next, DOE was to narrow the choices to the best three alternatives, finally picking a preferred site for the first of two repositories. A similar process was to be used for a second repository. Such a process, if it had been allowed to play out as intended, would have been consistent with elements of the adaptive, phased, and science-based process the BRC Report later recommended.

But instead, DOE first selected sites it had pre-determined. Then in May, 1986 DOE announced it was abandoning a search for a second repository and narrowed the candidate sites from nine to three, leaving in the mix the Hanford Reservation in Washington (in basalt medium), Deaf Smith County, Texas (in bedded salt medium) and Yucca Mountain in Nevada (in unsaturated volcanic tuff medium). All equity in the site selection process was abandoned in 1987 when Congress, confronted with cost of characterizing three sites and strong opposition to the DOE program, amended the NWPA of 1982 to direct DOE to abandon the two-repository strategy and to develop only the Yucca Mountain site. Not by coincidence, at the time Yucca Mountain was DOE's preferred site, as well as being the politically expedient choice

<sup>1</sup> See <http://www.energy.senate.gov/public/index.cfm/democratic-news?ID=490349a4-4b5e-4ac2-83e7-6e9a54c7aaaf0>

for Congress. The abandonment of the NWPA site selection process jettisoned any pretense of a science-based approach, led directly to the loss of support from the State of Nevada, diminished Congressional support (except to ensure the proposed Yucca site remained the sole site), and eviscerated public support for the Yucca Mountain project.

By ending all impetus for the disposal program, S. 1240 risks sending the nation down another dead-end road. But we believe this situation can be rectified. NRDC, relying on decades of scientific consensus, supports the focus of developing geologic repositories and ensuring a strong link between storage and disposal that ensures no storage site will ever become a de facto repository. After detailing the shortcomings of S. 1240, we offer specific suggestions for crafting successful, durable legislation and a bill that can address the longstanding national challenge of nuclear waste.

## II. SPECIFIC COMMENTS ON S. 1240 AND THE EVOLUTION OF THE BRC PROCESS

### A. *Comments on Title I: Sections 101-103*

Title I of S. 1240 closely tracks last year's S. 3469, which in turn, recognized our generation's ethical obligation to future generations regarding nuclear waste disposal. Unfortunately, subsequent Sections of the bill sever the crucial link between storage and disposal.

As we suggested last fall, the bill should include an explicit adoption of the primary purpose of the Nuclear Waste Policy Act (NWPA), 42 U.S.C. § 10131(b)(1), as the decision to isolate nuclear waste from the biosphere implicates critical issues of security, including: public health, environmental protection and financial security. Also, the meaning of Section 102(4) should be expanded and clarified by removing the word "centralized" and inserting the words "safe, environmentally sound and publicly accepted" to address several of the concepts we detail below.

### B. *Comments on Title II: Sections 201-206*

With respect to creation of a Nuclear Waste Administration, as NRDC has expressed numerous times over past years, the failures of the Atomic Energy Commission and its successor agencies (the Energy Research Development Agency, DOE and the Nuclear Regulatory Commission (NRC)) make the case that an alternative institutional vehicle for nuclear waste disposal is necessary. However, we caution that any new federal entity must be subject to all of the nation's environmental laws, including the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321, et seq. We presume such is the case for this proposed agency. Alternative language may be necessary to clarify specific application of NEPA at certain junctures of the siting process (for example, in support of the initial guidelines), but it is clear to us that NEPA has full application to the newly proposed S. 1240. We hope the Committee will speak to this matter in the record of this proceeding including any report filed with the bill or, better yet, simply clarify the matter in future and improved versions of the bill.

Further, as noted in our introduction, NRDC advises the new nuclear waste entity be governed by a board of directors. The lengthier processes associated with arriving at consensus decisions—as compared to the decision-making capacity of a single administrator—can be painful but are worthwhile in the end. A single administrator can upset carefully crafted disposal progress in one term; a diverse board of directors is less likely to do so. The BRC itself is a good example of the benefits of a group decision-making structure, where a wide array of viewpoints (though not nearly as diverse as we suggested or think was necessary) can and did produce useful results.

In our May 2013 comments on the Discussion Draft of this bill, we stated that representation on this board of directors should be balanced by political party representation, by governmental affiliation (i.e., federal, state, or tribal), and include representation by non-governmental organizations in addition to industry. In addition, in establishing the board of directors of the nuclear waste entity, the legislation should have a provision explicitly prohibiting the majority on the board from comprising members with existing or historical ties to the nuclear industry. Such a requirement would recognize the existing revolving door between government service at NRC, DOE and the nuclear industry. Further, ensuring the board is not disproportionately composed of members with existing or historical ties to the nuclear industry would improve public trust and acceptance of the government's newly legislated nuclear waste storage and disposal program.

We also note with concern changes to Section 205, the Nuclear Waste Oversight Board. Here, the language of Section 205(a) has been substantially refined to focus on financial aspects of the Nuclear Waste Fund, the Working Capital Fund, and the

performance of the Administrator in fulfilling contracts. Stressing the importance of the Oversight Board's review of financial aspects seems appropriate, but the potential crucial functions of the Oversight Board—chiefly, review of the progress of nuclear waste facilities—have been relegated to Subsection (m). It is not clear to us why the bill includes this apparent legislative devaluation, especially when the functions delineated by Subsection (m) include oversight of the funds made available to the Administrator, the adequacy of the fees, and the liability of the United States to contract holders. We suggest returning the functions (now in Subsection (m)) to primary placement at the beginning (in Subsection (a)) and deleting the duplicative text of Subsection (a)(1)(A)(B) and (C), saving such admonishment for the Committee Report.

Additionally, it has long been NRDC's view that independent oversight is critical to safe and environmentally sound operation of DOE nuclear weapons production facilities and commercial nuclear facilities regulated by the NRC. Indeed, while creating a review board may be a useful first step, more importantly the full suite of existing environmental laws should have full application to nuclear waste matters, and the new Nuclear Waste Administration should be bound by, and benefit from clearly defined external regulation. We address this issue in more detail, *infra* at 10-12.

### *C. Comments on Title III: Sections 301-308*

As noted in our introduction, disposal of nuclear waste in geologic repositories should remain the core focus of this legislation. Regrettably, by the inclusion of much of "alternative" Section 305 from the Nuclear Waste Discussion Draft,<sup>2</sup> S. 1240 presents a structure that advantages immediate introduction of interim storage options over development of a sound geologic repository program. As a preliminary matter, we stress NRDC supports commencing work on consolidated interim storage with a specific focus on development of an interim storage facility for stranded fuel. Indeed, we have proposed a set of steps to develop such a pilot interim storage option and do so again today, *infra* at 9-10.

#### (1) EVOLUTION OF THE INTERIM STORAGE ISSUE SUBSEQUENT TO THE BRC

The nuclear waste legislative process has been moving in the wrong direction. The BRC initially set out a phased, careful approach to developing both repositories and storage sites with strong checks to ensure storage sites could not become *de facto* repositories. This has been transmogrified in S. 1240 to a measure that prioritizes consolidated storage at the expense of a meaningful repository program. In short, NRDC believes that if S. 1240 becomes law, a future Congress will be forced to deal with this issue again, with no meaningful disposal solution on the horizon, but with an even larger burden of radioactive hazardous materials.

S. 1240 lacks, for example, the specific check on the development of interim storage sites pending meaningful progress on the repository program found in Section 306 of last year's S. 3469. The requirement in Section 306(a) stated: "The Administrator may not possess, take title to, or store spent nuclear fuel at a storage facility licensed under this Act before ratification of a consent agreement for a repository under Section 304(f)(4)." Such a provision wisely put the horse before the cart and ensured the crucial linkage between storage and disposal that the BRC acknowledges is necessary.<sup>3</sup> Such language should be included in S. 1240.

We expressed concern last year with an exception for 10,000 metric tons of spent nuclear fuel destined for storage, and express similar concerns about Section 309 of S. 1245 (Energy and Water Development Appropriations Act of 2014). But the lan-

<sup>2</sup>The Nuclear Waste Discussion Draft released by the Committee in March of this year included a proposal for an alternative Section 305 as a suggested replacement of Section 304(b)-(g) of the draft bill. S. 1240 includes the replacement language, and while some elements of alternative Section 305 have been altered in the interim, the majority of the text remains the same.

<sup>3</sup>See BRC Final Report at xii, "[A]t the same time, efforts to develop consolidated storage must not hamper efforts to move forward with the development of disposal capacity. To allay the concerns of states and communities that a consolidated storage facility might become a *de facto* disposal site, a program to establish consolidated storage must be accompanied by a parallel disposal program that is effective, focused, and making discernible progress in the eyes of key stakeholders and the public." See also, "[t]his means that a program to establish consolidated storage will succeed only in the context of a parallel disposal program that is effective, focused, and making discernible progress in the eyes of key stakeholders and the public. A robust repository program, in other words, will be as important to the success of a consolidated storage program as the consolidated storage program will be to the success of a disposal program. Progress on both fronts is needed and must be sought without further delay." BRC Final Report at 40.

guage of S. 1240 merits our outright objection and goes far beyond the careful, phased approach of last year's bill, which very closely tracked the BRC Final Report. Indeed, Section 305 of S. 1240 even does away with the Nuclear Waste Discussion Draft's fig leaf Suspension For Lack Of Substantial Progress, severing even the last minimal checks on interim storage in the event no progress is made on a repository, leaving the repository program and storage program on two entirely separate tracks.

(2) A COMPARISON OF S.3469 WITH S.1240

Sections 304, 305 and 306 of last year's S. 3469 went much of the way toward structuring a result that would avoid repeating the failure of the Yucca Mountain process. The 2012 version of Section 305(a) directed the U.S. Environmental Protection Agency (EPA) to adopt, by rule, broadly applicable standards for the protection of the general environment from offsite releases from radioactive material in geologic repositories. Further, last year's Section 305(b) directed NRC to then amend its regulations governing the licensing of geological repositories to be consistent with any relevant standard adopted by EPA. These requirements and this phasing of agency actions in S. 3469 were appropriate (i.e., first EPA sets the standards and then NRC ensures its licensing process meets those standards). In our earlier testimony on S. 3469 we expressed concern that the timeline for this phasing was inadequate, but those were concerns we hoped could be addressed in a later version of that bill. Unfortunately, Section 307 of S. 1240 does not even approximate such requirements, and also ignores the BRC's recommendation that new, applicable rules be in final form before site selection.

Further, S. 3469's Section 304, the heart of the BRC's original template, set forth a clear, linked and strongly similar process for the development of both interim storage sites and repositories. The original Section 304(a) set out the general terms of a process that reflects the transparent, adaptive, consent-based qualities called for by the BRC. Allowing affected communities to decide whether, and on what terms, they would host a nuclear waste facility was an important step forward that has not previously existed in nuclear legislation. S. 3469's Section 304(b) wisely provided for consistency with Section 112(a) of the NWPA but required the issuance of guidelines not later than one year after the date of enactment of the Act. We thought this one-year period was insufficient, but supported such consistency with the enumerated provisions in Section 112(a). Last year's Section 304(c) set up a process for determining candidate sites that, in general terms, could chart a process arriving at protective disposal solution, if it were: (1) undertaken subsequent to imposition of sound final site screening and development criteria and sound final generic radiation and environmental protection standards; and (2) not hamstrung or corrupted by Congress, other federal agencies or the Executive Branch. And Section 304(f) designed a consent process applicable to both storage and disposal sites.

Ultimately, last year's bill, S. 3469, was attentive to BRC's recommendation of a "consent-based, adaptive, and phased approach" for developing geologic disposal options. We agreed with the general thrust of such a conceptual framework for developing repositories, but suggested that any such "consent-based" process would enjoy a far higher probability of success in concert with a simple, but profound, change in the law—Congress with its firm understanding of federalism, should legislate a role for states in nuclear waste disposal by amending the Atomic Energy Act (AEA) to remove its express exemptions of radioactive material from environmental laws. We discuss this further below.

(3) THE FAILURE TO LINK STORAGE AND DISPOSAL IN S. 1240

We turn now to the analogous Sections in the current bill, S. 1240, and the contrasts are dismaying. The basic structure of the template from S. 3469 is scattered in pieces throughout the current bill, and the development of repositories and interim storage facilities have been placed on very different tracks.

We find that Section 304 of S. 1240 has been truncated even compared to the Discussion Draft and reduced to mere aspirations it will structurally no longer be able to achieve. Section 305 spells out the new process for Interim Storage facilities, in great measure modeled on the "alternative" Section provided with the Discussion Draft. Section 305 of S. 1240 requires requests for proposals (RFPs) for interim storage sites not later than 180 days after enactment, likely before an Administrator is even confirmed by the Senate. The RFPs shall include general guidelines and, after one or more public hearings, a process for site characterization, selection, and licensing. Remaining links between storage and disposal are found in Section 305(c), where the Administrator is urged (in the wispiest terms) "to seek to ensure" that efforts to develop a storage site for "nonpriority" waste are accompanied by parallel efforts to develop a repository.

In S. 1240, during the first 10 years after enactment, the Administrator may issue RFPs for one or more storage sites for non-priority waste, but may not issue additional RFPs unless the Administrator has obligated funds for activities in the repository program. After the first 10 years, the Administrator may not issue additional RFPs for non-priority waste storage unless there is a repository site under evaluation. There is no volume limit for the non-priority storage site in either case.

And priority and preference in site selection for sites suitable for co-location of a storage facility and a repository provide cold comfort for the following reasons. Unfortunately, preference and priority for co-location are not articulated as binding factors, no matter how moribund a repository program. And even if they were meaningfully binding, which they are currently not, such preference presents a host of problems that could lead to the consolidated storage site morphing into the de facto repository, regardless of the progress in the repository program (if, e.g., the co-located repository program derails late in the process for technical or institutional reasons). Further, there is nothing in Title III barring the construction and operation of facilities for repackaging nuclear spent fuel and nuclear waste, which could include construction and operation of facilities for spent fuel reprocessing (chemical or metallurgical). Indeed, NRDC is already aware of multiple efforts and interest in co-locating storage and reprocessing facilities.

In summary, there is nothing in S. 1240 to halt a governor interested in hosting a potentially unlimited interim storage site and associated reprocessing facility from putting the process on a fast track before EPA's new radiation protection rules and NRC's new licensing rules are in place; before a repository program has even commenced meaningful work; and indeed, potentially before submission of the final "Mission Plan" described in Section 504. Whether such a situation could emerge in Idaho, New Mexico, Tennessee, South Carolina, or other states, or even at Nevada's Yucca Mountain (with attendant controversy and rancor) is beside the point because the phased, careful process designed to achieve a publicly acceptable result outlined by the BRC and included in last year's S. 3469 has been jettisoned by S. 1240's prioritizing of interim storage.

(4) THE CONSENT AGREEMENTS OF SECTIONS 305 AND 306 ARE INADEQUATE

The siting and consensus approval for storage and repository facilities should be strongly consistent, if not identical. For storage facilities, there is the possibility, but not the requirement, of a "cooperative agreement" in Section 305(b)(3)(C). The consent process should require this minimal, initial agreement. The consent process of Section 305(b)(4)(B) includes no provisions related to the contents or terms and conditions of a consent agreement as were included in S. 3469. In addition to the lack of adequate technical requirements, this lack of an adequate consent process is contrary to the purpose of "establish[ing] a new consensual process" (Section 102(3)) and makes it unlikely that there will be successful siting of storage facilities.

The consent process for repositories still exists in Section 306(e) of S. 1240. But the ratification requirement of S. 3469 Section 304(f)(4) is missing. Apparently, Congress could, at any time, choose not to ratify the consent agreement, or ratify it with changed conditions, or not provide funding or allow other provisions to be implemented. It is not clear to NRDC why any state would consider this to be an adequate "consent" process, when its requirements could be arbitrarily overturned by Congress.

*D. Comments on Title V—Sections 501-509*

Unfortunately, the timeline found in the "mission plan" also do not provide a meaningful linkage between storage and disposal. In brief, the "mission plan" is the report required under Section 504, presented to Congress, the Oversight Board, the NRC, the Nuclear Waste Technical Review Board, and then released for public comment. All this is to be done in short order. The proposed mission plan is due not later than one year after the date of enactment of S. 1240. There is no specific date for final issuance, and there is provision for revision to reflect major changes, including from the "consent" process in the planned activities, schedules, milestones, and cost estimates reported in the mission plan.

The pertinent dates of the mission plan are found in Subsection (b), where the Administrator is to set out schedules for operation of a pilot facility not later than December 31, 2021; a storage facility for "nonpriority" waste not later than December 31, 2025; and a repository not later than December 31, 2048, likely more than three decades distant from the passage of any iteration of the Nuclear Waste Administration Act. Any analysis of "meaningful" progress on the repository during the first few years subsequent to the Act's enactment is meaningless when weighed against a scale of more than 3 decades. Further, the allowance for revision of the

mission plan can be used to simply shunt aside observations about problems in repository development or rapid development of the interim storage sites.

The certification process and suspension proceedings in Subsections (c) and (d) could prove to be politically fraught, but ultimately meaningless in light of the time frames. Rather than the hard cap on volume present in last year's S. 3469 or, as NRDC suggests, an interim storage pilot project at operating commercial site(s) limited to the stranded fuel, S. 1240 sets out a functionally meaningless process that requires the Administrator to move quickly with consolidated interim storage and posit (likely rosy) scenarios about repository development decades away.

### III. HOW THE EVOLUTION OF THE BRC PROCESS CAN BE SAVED: NRDC'S PRESCRIPTION

The Committee has the ability to reinstate the primacy of geologic repositories as the solution for nuclear waste and to ensure strong linkage between storage and disposal that ensures the former never become de facto disposal sites. NRDC and many others could support such legislation.

NRDC offers five recommendations to finally provide durable legislation for nuclear waste. They are: (1) recognize that geologic repositories must remain the core of any legislative effort; (2) create a coherent legal framework before commencing any geologic repository or interim storage site development process; (3) arrive at a consent-based approach for nuclear waste storage and disposal via a fundamental change in law; (4) address storage in a phased approach consistent with the careful architecture of last year's S. 3469; and (5) exclude distracting and polarizing closed fuel cycle and reprocessing options.

Importantly, our view on each aspect is premised on a single overarching caution: to avoid repeating the mistakes of the last three decades, whether in siting a repository or developing interim storage options, Congress must create a transparent, equitable process incorporating strong public health and environmental standards insulated from political expediency or other distortions. That would ensure, at the conclusion of the process, the licensing of a suitable site (or sites). What follows is NRDC's detailed prescription for amending S. 1240 and establishing a protective and robust nuclear waste storage and disposal process.

#### *A. Geologic Disposal Must Remain Primary*

The primacy of geologic disposal as the solution for nuclear waste is consistent with more than 50 years of scientific consensus and, most recently, with the findings of the bipartisan BRC. No other solutions are technically, economically or ethically viable over the long term for the environment and human society. NRDC strongly supports the development of a science-based repository program that acknowledges the significant institutional challenges facing spent fuel storage and disposal. Advancing S. 1240 without reinstating the primacy of geologic disposal as the solution would gravely harm collective efforts to establish lasting solutions for nuclear waste and would be contrary to the efforts of the BRC.

#### *B. Create a Coherent Legal Framework before Site Development*

We have described the basis for this already in our discussion of S. 3469's Section 305 and do not need to belabor the point, *supra* at 5. Quite simply, if Congress ensures that rules for developing nuclear waste facilities are in place before the selection of sites begins, it will forestall a host of problems likely to emerge down the road. We only need reflect on this history of Lyons, Yucca Mountain, Monitored Retrievable Storage, and many other failed attempts.

#### *C. Address Interim Storage in a Phased Approach Consistent With the BRC*

We commence by reminding the Committee that the United States attempted to sever the link between interim storage and final disposal previously, only to conclude doing so was a mistake. Beginning in 1957, the Atomic Energy Commission (AEC) pursued a geologic repository program for high-level radioactive waste (HLW) in a salt deposit near Lyons, Kansas. Opposition initially came from the Kansas Geological Survey but soon spread. Concerns over conditions in the mine, the presence of numerous oil and gas wells in the vicinity, and the fact that there was solution mining at an operating adjacent salt mine operated by American Salt Company forced the AEC to abandon the site in 1972. Following the demise of the Lyons repository effort, later in 1972 the AEC announced it intended to develop a 100-year Retrievable Surface Storage Facility (RSSF). The U.S. Environmental Protection Agency (EPA) and others opposed this interim storage proposal because it diverted attention and resources from efforts to find a permanent geologic disposal solution. As a consequence of this opposition, the Energy Research and Development Agency (ERDA) abandoned its plans for a RSSF in 1975. The similarities of this history

with failed attempts to force acceptance of the proposed Yucca site should be apparent.

We now offer four observations on interim storage:

- 1.) Consolidated storage of spent fuel from currently operating reactor sites at an alternate, previously greenfield site is unnecessary and ill-advised. Any pilot project for consolidated storage should be limited to hardened, dry-cask storage of stranded spent fuel from shut down reactor sites.
- 2.) If emergency conditions arise at an existing operating reactor site, e.g., due to an earthquake, discovery of a fault under the reactor(s), or a disaster related condition, that threatens the environment and public health, the reactors should be shut down and the spent fuel at the site would qualify as stranded spent fuel.
- 3.) Existing and currently operating reactor sites have government and implicit public consent for interim storage of spent fuel.
- 4.) Consolidated spent fuel storage should not be viewed as a step toward, or means of furthering, spent fuel reprocessing.

With those observations in mind, NRDC urges the Committee to write legislative language for a pilot project to address the total stranded spent fuel at closed reactor sites (currently 13 sites), currently defined in S.1240 as "priority fuel," where spent fuel would be stored in dry casks within one or more hardened buildings similar to the Ahaus facility in Germany. Potential volunteer sites already demonstrating "consent" are found at operating commercial reactors. The utility of using existing commercial operating reactor sites rather than burdening new areas with spent nuclear fuel should be apparent: existing sites require far less new infrastructure, already have the capacity for fuel management and transportation and have the consent necessary for hosting nuclear facilities. And by keeping consolidated, interim-stored spent nuclear fuel under the guardianship of the nuclear industry that produced the waste in the first instance, Congress ensures that careful progress continues with the repository program because all parties will know that it is necessary.

Further, S. 1240 is silent on an important matter—the current configuration of spent fuel storage at a number of operating reactor sites. The BRC cited no evidence for why continued reliance on densely packed wet storage should be accepted as adequate in light of the health, safety and security risks that interim wet storage poses. This is true regardless of the seismic, population density, or other natural factors that might create concern with the current storage configuration. NRDC and our colleagues at the Union of Concerned Scientists and many others noted the BRC was negligent in not recommending that Congress statutorily direct movement of spent fuel from wet pools to dry casks as soon as practical, i.e., as soon as spent fuel has cooled sufficiently to permit safe dry cask storage, generally about five to seven years following discharge from the reactor. We again urge Congress to act on this issue in this legislation or even in a stand-alone bill.

To reiterate, a pilot interim storage project housed at an existing commercial reactor site that addresses issues of stranded fuel would go far in dealing with a number of public safety and environmental harms, would do no damage to a carefully constructed bill that focuses on repository development.

#### *D. Consent, Federalism, and a Fundamental Change In Law*

##### *(1) The Consent Agreements Suggested by BRC and Found In Section 306 Are Inadequate To the Task*

For all its laudable qualities, we believe the consent agreements in Section 306 (for repositories and not for storage sites) will not solve the fundamental problem facing nuclear waste disposal nor allow States the oversight role necessary to create a durable, lasting solution. Rather, Congress, with its firm understanding of federalism, should legislate a role for states in nuclear waste disposal by amending the Atomic Energy Act (AEA) to remove its express exemptions of radioactive material from environmental laws.

State, local and tribal governments must play a central role for a repository and waste storage program to be successful, and regrettably in S. 1240 they cannot. The BRC recognized as much and noted that federal and state tensions are often central to nuclear waste disputes. We note that the BRC's Final Report states in pertinent part:

We recognize that defining a meaningful and appropriate role for states, tribes, and local governments under current law is far from straightforward, given that the Atomic Energy Act of 1954 provides for exclusive federal jurisdiction over many radioactive waste management issues. Nev-

ertheless, we believe it will be essential to affirm a role for states, tribes, and local governments that is at once positive, proactive, and substantively meaningful and thereby reduces rather than increases the potential for conflict, confusion, and delay.

Final Report at 56 (citation omitted).

Without fundamental changes in S. 1240 to address such federal, state and tribal tensions, we will never approach closure and consent on transparent, phased, and adaptive decisions for nuclear waste siting. Indeed, even if such a provision as Section 306(e) were enacted, we think it likely disputes will continue unchecked, including as the Administrator and state and local governments seek to negotiate a consent agreement, unless Congress finally makes a decades-overdue change in the law.

*(2) NRDC's Prescription for Ensuring States' Authority—Remove the AEA's Exemptions from Environmental Law*

A meaningful and appropriate role for states in nuclear waste storage and disposal siting can be accomplished in a straightforward manner by amending the AEA to remove its express exemptions of radioactive material from environmental laws. The exemptions of radioactivity make it, in effect, a privileged pollutant. Exemptions from the Clean Water Act and the Resource Conservation and Recovery Act (RCRA) are at the foundation of state and, we submit, even fellow federal agency distrust of both commercial and government-run nuclear complexes.

As the Senate is aware, most federal environmental laws expressly exclude “source, special nuclear and byproduct material” from the scope of health, safety and environmental regulation by EPA or the states, leaving the field to DOE and NRC. In the absence of clear language in those statutes authorizing EPA (or states where appropriate) to regulate the environmental and public health impacts of radioactive waste, DOE retains broad authority over its vast amounts of radioactive waste, with EPA and state regulators only able to push for adequate cleanups at the margins of the process. Indeed, the BRC Report discusses the State of New Mexico’s efforts to regulate aspects of the Waste Isolation Pilot Plant under RCRA as a critical positive element in the development of the currently active site (Final Report at 21). The NRC also retains far reaching safety and environmental regulatory authority over commercial nuclear facilities, with agreement states able to assume NRC authority, but only on the federal agency’s terms.

States are welcome to consult with NRC and DOE, but the agencies can, and do, assert preemptive authority where they see fit. This has happened time and again at both commercial and DOE nuclear facilities. This outdated regulatory scheme is the focal point of the distrust that has poisoned federal and state relationships involved in managing and disposing of HLW and spent nuclear fuel, with resulting significant impacts on public health and the environment.

If EPA and the states had full legal authority and could treat radionuclides as they do other pollutants under environmental law, clear cleanup standards could be promulgated, and the Nation could be much farther along in remediating the toxic legacy of the Cold War. Further, we could likely avoid some of the ongoing legal and regulatory disputes over operations at commercial nuclear facilities. Any regulatory change of this magnitude would have to be harmonized with appropriate NRC licensing jurisdiction over facilities and waste and harmonized with EPA’s existing jurisdiction with respect to radiation standards: but such a process is certainly within the capacity of the current federal agencies and engaged stakeholders. Some states would assume regulatory jurisdiction over radioactive material, others might not. But in any event, substantially improved clarity in the regulatory structure and a meaningful state oversight role would allow, for the first time in this country, consent-based and transparent decisions to take place on the matter of developing storage sites and geologic repositories.

Section 306(e) allows a consent agreement with terms and conditions including “regulatory oversight authority.” The attempt to remedy regulatory deficiencies could be more simply and effectively handled by ending exemptions under the AEA. Removing the ability of the United States to unilaterally break the terms of the consent agreement could potentially give a state some measure of comfort that the agreement it had painstakingly negotiated over “undue burdens” or conflicting compliance agreements will hold fast. But there would be nothing stopping Congress from revisiting this law, ratifying the consent agreement with conditions, and thereby removing whatever meaningful restraint a state might assert. Thus, ultimately what is offered as a thoughtful contract provision could be rendered inoperable, and could eviscerate a state’s protection against altered, less favorable terms.

By contrast, ending the anachronistic AEA exemptions solves the matter of meaningful state oversight and does not carry with it substantial likelihood of congressional terms and modifications exacted from states years into a good faith negotia-

tion on a site. Indeed, while it would be possible for a future Congress to revisit the AEA and re-insert exemptions from environmental law, it would have to do so in a manner that would remove overdue jurisdictional authority from all states (or Congress would have to single out one state for special treatment). The difficulty of prevailing over the interest of all 50 states rather than simply amending legislation that affects the interests of just one state should be apparent.

*E. Exclude Distracting and Polarizing Closed Fuel Cycle and Reprocessing Options*

The unlimited interim storage allowed for in S. 1240, regardless of the state of repository program, is a course of action benefitting the narrow financial interests of industry, and it undermines final repository solutions, and sets up a clear set of incentives for reprocessing and fast reactors. This is an enormous step back from S. 3469. Last year former Chairman Bingaman noted:

Commission wisely resisted the allure of reprocessing, concluding that there is “no currently available or reasonably foreseeable” alternative to deep geologic disposal. In short, we need a deep geologic repository. Even if we were to reprocess spent fuel, with all of the costs and environmental issues it involves, we would still need to dispose of the radioactive waste streams that reprocessing itself produces and we would need to do so in a deep geologic repository.

NRDC concurs. The lack of a limit on consolidated interim storage increases the probability of continued efforts at reprocessing the spent fuel, resulting in plutonium separations with no way to ensure that the plutonium would not be used to make nuclear weapons. Inclusion of incentives for reprocessing and fast reactors would necessitate NRDC’s further objection to such nuclear waste legislation. In addition, reprocessing has proven to be expensive, environmentally disastrous, and a serious non-proliferation threat. And as the BRC found, reprocessing is also not a viable waste management strategy because it does not significantly reduce the radioactivity of the waste that must be stored in a repository. Indeed, just as for spent fuel, we must also work to resolve the path to a repository for the millions of gallons of dangerous, highly radioactive waste generated by spent nuclear fuel reprocessing in the United States over the past half century.

In contrast to this setup for reprocessing and fast reactor facilities, NRDC’s recommendation of an interim storage pilot project that is strictly limited to existing commercial operating sites avoids the likelihood that reprocessing would occur. First, our consolidated pilot proposal gets the ball rolling on spent fuel almost all parties agree is “stranded.” Second, with its strict limit to shut down reactors and careful attention to establishing appropriate safety criteria, any such interim site could solve immediate public safety risks but not take the air out of meaningful progress geologic repository program.

#### IV. CONCLUSION

We share the frustrations of the Committee and the bill’s sponsors with the halting pace of efforts to find a disposal solution for nuclear waste. But we urge you to not let such frustration result in short-sighted “solutions” such as those found in S. 1240.

Efforts to “streamline,” “reduce regulatory obligations” or simply force through projects by setting arbitrary deadlines, are in significant measure how the original NWPA process and then the Yucca project were derailed. Rather than trying to short circuit an imaginary parade of onerous regulatory obligations, NRDC urges careful attention to creating a coherent legal framework before commencing any geologic repository or interim storage site development process. Then (and only then) will it be possible to have a consent-based approach for nuclear waste storage and disposal consistent with our history of federalism.

Simply, NRDC opposes interim storage configurations that remove the necessity of a repository program and provide clear incentives for reprocessing and fast reactors. Further, relying on the two-track storage and disposal process presented in S. 1240 to provide the meaningful oversight role States seek is another recipe for gridlock—there is no provision in the storage Section for a consent agreement and the provision in the repository Section does not bar Congress from revisiting any negotiated agreement, ratifying the consent agreements with conditions, and removing whatever meaningful restraint a state might assert. This is a recipe for failure as highlighted by an ongoing example. The Energy Department’s current effort to reclassify high-level radioactive waste and ship it to the Waste Isolation Pilot Plant (WIPP) in New Mexico illustrates just how an agency can and will take such liberties (and simultaneously not solve any of the pressing problems at the Hanford site).

In contrast to the difficulties in structuring state and federal roles noted above, ending the anachronistic AEA exemptions solves the matter of meaningful state oversight once and for all. It is past time for Congress to take such a step and this is the legislation where it should finally be done.

We look forward to continuing to work with the Committee on this difficult topic and I am happy to answer any questions.

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

**STATEMENT OF DAVID LOCHBAUM, DIRECTOR, NUCLEAR SAFETY PROJECT, UNION OF CONCERNED SCIENTISTS**

Mr. LOCHBAUM. I thank Chairman Wyden, Ranking Member Murkowski and all members of the committee for this opportunity.

S. 1240 seeks to remedy problems resulting from the Nuclear Waste Policy Act not attaining its specified outcome, namely a Federal repository accepting spent fuel by January 1998. The failure to open the repository means that spent fuel continues accumulating at the plants. The departure from the Nuclear Waste Policy Act forced nuclear plant owners to expand onsite spent fuel storage capacities. Plant owners have sued the Federal Government for recovery of these costs.

There was another consequence. Spent fuel pools initially designed to hold slightly over one reactor core now hold up to 9 reactor cores. Large amounts of radioactive material which should now be within a repository designed to isolate it from the environment for at least 10,000 years, instead remain at the plant sites.

UCS wants to see the status quo ended.

We strongly advocate accelerating the transfer from spent fuel pools into dry storage.

Figure one in our written material contrasts the amount of spent fuel actually stored at the nuclear plants with the amount had the repository opened on schedule.

The triangles show onsite spent fuel storage amounts steadily declining from a peak of about 38,000 metric tons in 1998 as some went to the repository.

The diamonds show the amounts instead climbing to over 67,000 metric tons.

Portions of S. 1240 address the cost implications of the failure to accept spent fuel. This is fair and reasonable because the plant owners incurred costs they would not have otherwise encountered had the Federal Government met its obligations.

But fairness dictates that another consequence from that failure also be rectified. Had the Federal Government met its obligations spent fuel pools would not contain up to 9 reactor cores. If legislation addresses the financial implications then it is only fair that it address the safety implications also. If the Congress sends the President a nuclear waste bill that fails to address this inequity it would have failed the public in a major way.

That accelerating the transfer from spent fuel pools into dry storage reduces risk as shown in Figure two of our written testimony.

The columns labeled high density reflect the current situation.

The columns labeled low density reflect the situation if transfer into dry storage is expedited.

The low density columns also reflect the situation that would now exist had the Federal Government met its obligations under

the Nuclear Waste Policy Act. The risk reduction is undeniable. The contaminated land area drops from 9400 square miles to 170 square miles and the number of displaced persons drops from 4.1 million to 81,000.

Dry storage is not inherently safe. But it provides significantly better risk management.

For the record all of the contaminated area and displaced persons in both cases is due to radioactivity released from spent fuel pools. Not a single person is forced to leave from their home, leave their home, due to radioactivity released from dry storage.

The Nuclear Regulatory Commission's actions reinforce this reality. Shortly after 9/11 the NRC issued orders to upgrade security at operating nuclear power plants, followed 3 months later by orders for spent fuel pools, followed 5 months later by orders for dry storage security.

The NRC triaged the relative hazards tackling the highest first and the lowest last. After Fukushima the NRC directed its inspectors to examine reactor core and spent fuel pool cooling systems for vulnerabilities in the event of similar challenge. The NRC did not instruct its inspectors to waste a minute examining the low, dry storage hazard.

We urge the Congress to accelerate the transfer from spent fuel pools into dry storage. This does not introduce an additional step in the road to repository since spent fuel must be removed from the pools to dry cask in order to be transported. It merely entails taking this step sooner rather than later.

Americans deserve this protection.

Thank you.

[The prepared statement of Mr. Lochbaum follows:]

PREPARED STATEMENT OF DAVID LOCHBAUM, DIRECTOR, NUCLEAR SAFETY PROJECT,  
UNION OF CONCERNED SCIENTISTS

On behalf of the Union of Concerned Scientists, I thank Chairman Wyden, Ranking Member Murkowski, Senator Feinstein, Senator Alexander, and all members of the Energy and Natural Resources committee for this opportunity to provide our views on S.1240, the Nuclear Waste Administration Act of 2013.

S.1240 seeks to remedy problems resulting from the Nuclear Waste Policy Act of 1982 not attaining its specified outcome; namely, a geological repository for spent fuel from civilian nuclear plants operated by the federal government and accepting waste by January 31, 1998.

Had the Nuclear Waste Policy Act (NWPA) been implemented as enacted, the federal government would have begun accepting spent fuel in 1998. The nominal 3,000 metric tons per year transfer rate from plant sites to the federal repository exceeded the rate at which spent fuel was being generated. Thus, the amount of spent fuel stored at plant sites around the country would have peaked in 1998 at around 38,000 metric tons and steadily declined thereafter as shown in Figure 1.\*

The delay in opening the federal repository meant that spent fuel continued to accumulate at the plant sites. By year end 2011, over 67,000 metric tons remained at plant sites while 0 ounces resided in a federal repository under the NWPA.

The departure from the NWPA plan forced nuclear plant owners to pay for expanded onsite spent fuel storage capacity (e.g., replacing original low-density storage racks in spent fuel pools with high-density racks and building onsite dry storage facilities to supplement storage in wet pools). Plant owners have sued the federal government for recovery of costs they incurred for storing spent fuel at their sites that should have been in a federal repository under the NWPA. The U.S Government Ac-

\*Figure 1 has been retained in committee files.

countability Office reported that these lawsuits cost American taxpayers \$1.6 billion with an estimated \$19.1 billion of additional liability through 2020.<sup>1</sup>

There was another consequence from expanded onsite spent fuel storage. Spent fuel pools initially designed to hold slightly over one reactor core's inventory of irradiated fuel now hold up to nearly 9 reactor cores of irradiated fuel. Unlike the reactor cores, the spent fuel pools are not protected by redundant emergency makeup and cooling systems and are housed within robust containment structures having reinforced concrete walls several feet thick. Thus, large amounts of radioactive material—which under the NWPA should be stored within a federal repository designed to safely and securely isolate it from the environment for at least 10,000 years—instead remains at the reactor sites.

There is no easy solution to this situation. UCS applauds this committee for trying to end the status quo. Unfortunately, it is not a task of picking the best among an array of suitable options. It is the more unpleasant chore of picking the lesser of many evils. UCS wants to make it clear that sustaining the status quo is one of the evil options. Under the status quo, costs and risks of onsite spent fuel storage will continue to increase unnecessarily.

UCS wants to see the status quo ended by reducing the inventories of irradiated fuel in spent fuel pools. We strongly advocate accelerating the transfer of irradiated fuel from spent fuel pools to dry storage. In our view, currently available and used dry storage technologies can be used to substantially reduce the inventory of irradiated fuel in spent fuel pools, with a goal of limiting it to the equivalent of one or two reactor cores per pool.

Figure 1 contrasts the actual amount of spent fuel stored at nuclear plants sites with the amount that would have been there had the NWPA been implemented as intended. The green triangles represent onsite spent fuel storage amounts steadily declining from a peak of about 38,000 metric tons in 1998 as fuel gets transported to the federal repository at a rate of 3,000 metric tons per year (the red squares). The blue diamonds show the amounts instead climbing to over 67,000 metric tons.

The lawsuits brought by nuclear plant owners and the financial portions of S.1420 address the cost implications of the failure of the federal government to accept spent fuel under the NWPA. This is fair and reasonable because the plant owners have incurred costs they would not have encountered had the federal government fulfilled its obligations under the NWPA.

But fairness also dictates that the other primary consequence from the federal government's failure also be rectified. Had the federal government met its obligations under the NWPA, spent fuel pools would not contain up to 9 reactor core's worth of irradiated fuel. More fuel in the pools means a greater risk to the surrounding public if there is a problem with the pools that releases radioactivity. If lawsuits and legislation address the financial repercussions caused by the performance gap identified in Figure 1, then it is only fair and reasonable that this legislation also address the associated safety and security implications. They are inseparable in reality and must also be inseparable in law. If the Congress approves and sends to the president a nuclear waste bill that fails to address this serious risk and inequity, it will have failed the American public in a major way.

Accelerating the transfer of irradiated fuel from spent fuel pools to onsite dry storage reduces the overall safety and security threat profile of the plant as shown in Figure 2.\* The columns labeled High Density (1x4) reflect the current situation. The columns labeled Low Density reflect the situation if irradiated fuel transfer into dry storage is expedited. The risk reduction is undeniable: the contaminated land area is reduced from 9,400 square miles to 170 square miles and the number of people displaced from their communities for a long time drops from 4,100,000 to 81,000. Dry storage is not absolutely or inherently safe and secure; if so, the federal government's repository problems would be solved. But dry storage provides significantly better management of the onsite spent fuel storage risks.

The Nuclear Regulatory Commission's (NRC's) actions illustrate this point. After the tragic events of 9/11, the NRC issued orders to upgrade security measures for nuclear facilities. On February 25, 2002, the NRC issued orders to upgrade security for operating nuclear reactors. On May 23, 2002, the NRC issued orders to upgrade security for spent fuel pools. And on October 16, 2002, the NRC issued orders to upgrade dry storage security. The NRC properly triaged the hazards, tackling the highest first and the lowest last.

After the tragic events at Fukushima, the NRC instructed its nuclear plant inspectors to look at capabilities for cooling the reactor core and spent fuel pool in

<sup>1</sup>U.S. Government Accountability Office, "Spent Nuclear Fuel: Accumulating Quantities at Commercial Reactors Present Storage and Other Challenges," GAO-12-797, August 2012.

\*Figure 2 has been retained in committee files.

event of a beyond design basis challenge like that faced in Japan. The NRC quite properly did not instruct its inspectors to waste resources examining the low hazard posed by onsite dry storage.

In March 2012, the NRC ordered plant owners to implement an array of measures intended to better protect irradiated fuel in reactor cores and spent fuel pools from damage. The NRC did not require owners to take any additional measures to better protect irradiated fuel in dry storage from damage. This low hazard was already adequately protected.

Because the federal government failed to meet its obligations under the NWPAA, spent fuel pools contain much more irradiated fuel and are essentially loaded guns aimed at neighboring communities. The scope of S.1420 must include removing some of these bullets.

We urge the Congress to accelerate the transfer of irradiated fuel from spent fuel pools to dry storage. This does not introduce an additional step in the road to a repository since spent fuel must be moved from pools to dry casks in order to be transported; it merely entails taking necessary steps on that path sooner rather than later.

The CHAIRMAN. Thank you very much.

We are going to call another audible here because I guess we have a couple more minutes before we have votes. So I think Senator Murkowski, we can each probably take 5 minutes or so and at least have a chance to ask a few questions.

Mr. Lochbaum, let me begin with you.

The bill, as you know, sets up a program for the Federal Government to build new storage facilities for spent fuel. It was our sense that it was logical to move spent fuel if it was going to be cheaper and safer. For example, decommissioned nuclear power plants where there's not going to be the ongoing operations.

However, at some nuclear power plants there are going to be continued operations and maintenance and security and environmental monitoring for a long time to come, maybe decades. It might not be cheaper or safer to move the fuel to a central storage site especially since it will need to be moved again to the repository.

So my question to you is would it make sense to try to figure out a way to perhaps make some payments for continued onsite storage at nuclear power plant sites if overall that would make an approach less expensive and safer?

Mr. LOCHBAUM. If I understand the question correctly, yes. But if it just finances continuing the current practice where we keep pools close to being filled and pays for onsite storage, then there might be some cost savings but there's no safety gain.

The CHAIRMAN. The idea is to get a twofer. If you can get a twofer, if you can get more, an added measure of safety and it costs less than the concept, in my view of providing some payments for continued onsite storage, is worth looking at.

Mr. LOCHBAUM. Right.

The CHAIRMAN. You'll see now I'm going to ask a follow up.

I'm going to ask a question of you, Mr. Fertel.

Now you also have recommended, Mr. Lochbaum, accelerating the transfer of spent fuel from spent fuel pools to dry cask storage and that was certainly my take away from going to Fukushima is to look at an approach like that.

Are there other steps the Congress could take to encourage movement of spent fuel out of reactor pools such as allowing the Attorney General to enter into negotiations with utilities to pursue voluntary agreements to transfer their waste to dry cask storage as

part of a settlement agreement in return for providing interim storage?

Mr. LOCHBAUM. Certainly. There are a number of ways such as that one. Also allowing the decommissioning fund that plant owners have set aside to be used for expanded onsite dry cask storage would also be a way to achieve the twofer that you mentioned earlier.

The CHAIRMAN. OK.

The same question for you, Mr. Fertel, that I asked Mr. Lochbaum. On this question of paying, looking at a way to make some payments for continued onsite storage at nuclear power plant sites when you hit what Mr. Lochbaum and I were talking about, the added measure of safety and less cost.

Are you open to looking at something like that?

Mr. FERTEL. Let me first say I totally respect your comment when you visited Fukushima and said that it made you think about events that people don't think can happen. So with that as a context, if you look at the studies that have been done the Nuclear Regulatory Commission, by EPRI, a review by the AC Advisory Committee on Reactor Safeguards, there is not a significant difference in safety.

Now you can do assessments which show what David said as far as if I have a release what's the difference. But if we're talking about very, very, very, low probability events the question isn't so much do you pay for it. It's how do you use your resources to improve safety at the plants smart?

So we are right now, based upon Fukushima and based upon the Nuclear Regulatory Commission, taking steps to make sure one, we know what's happening in a pool at the time through instrumentation under any event.

Two, that we can get water to the pool under any event.

So you can definitely do things at our plants and get an increment in safety in almost anything, Mr. Chairman. The question is, is it there that you should get it? I would say that right now what we're doing makes a lot of sense.

The pools did not fail at Fukushima. Though a lot of people thought they did. They didn't.

The CHAIRMAN. As you know, there were continued predictions about weather and the like. I'll tell you when I was there looking at spent fuel rods, spent fuel pools and the proximity to the water that is not a prescription for a happy ending.

Here's my point and then I'm going to go right to Senator Murkowski.

I just hope we can stay flexible on this kind of topic. I take your point as a thoughtful one. You've said, alright it might be safer, but it might not be the best use of the safety dollar.

Mr. FERTEL. Right.

The CHAIRMAN. So be it. I just hope because, I mean, here's my point and I'll let Senator Murkowski have the last word.

In a tough debate about energy and natural resources, nobody gets what they want. Nobody gets what they believe they deserve. The question is can people get, in effect, what they need that as part of a solution that's good for the country.

I think we all understand that this issue falls into the basket of essentially running longer than the Trojan War. It is just gone on and on and on. Apropos, Senator Risch's point, we sure don't do very well if we don't get a solution and everything than everything just stays put.

So both of you have been thoughtful on this point. It's representative of what we're going to have to do to try to find some common ground.

So last questions and the last word for Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman.

Gentlemen and Ms. Jameson, thank you for your testimony here this afternoon. You heard the discussion here earlier with the Secretary on the issue of consent based approach. The Secretary has pretty much summed it up saying that's the basis on which the Blue Ribbon Commission came out and really so much of what our legislation is formulated around is this consent based siting.

I guess this would be a question to you, Mr. Garcia or perhaps, Mr. Smith, any of you.

In terms of what we have provided in this bill do you think that there is sufficient encouragement within the legislation that would allow for communities, tribes, to step forward and say, sure, we will be the host?

What would it take for a tribe, a community, a State, to step up and say, we will be the host of a repository or a permanent facility?

Mr. GARCIA. I can answer. Thank you.

First of all that, you know, this legislation does allow for opportunities for anyone who wants to host and in this case tribal governments as such. If you remember some years ago there were efforts and there were at least 5 to 7 tribes that had said yes, we'll take on this opportunity. They looked at it as an opportunity.

But what failed in that case is the states invoked some legislation that disallowed a tribe to partner up in looking for a facility. I think that so as long as there's a safeguard beyond that. So we can't just leave it up to one of the Senators suggested that it's up to the State.

It can't just be up to the State. It's got to be a collaborative effort between the State and the tribe if a tribe so desires to move in with this kind of an endeavor then it should be up to the tribe as well. But I think those opportunities are there.

So the other thing that tribe would like to be involved at the onset. Not just establish the agency and then forget about the Administration and forget about well, the bill is there. But we'll get to it later.

So I think it's important to keep tabs and to move forward consistently with collaborative efforts, not so much consultation. I hate the word consultation. But collaborative effort to moving forward with resolving because it could happen because we looking at the country for the safety and well being of all of our people.

Senator MURKOWSKI. Mr. Smith.

Mr. SMITH. Senator, I think that all of our communities have expressed an interest in considering moving forward with this process. You know, first they're looking for a path forward and certainty out of this consent process. But they're also looking for economic development opportunities and job creation. I think that's

got to come with it for communities that are going to be willing to consider this mission.

Senator MURKOWSKI. So I believe it was Senator Alexander that mentioned a competition. I think it was Sweden that has essentially put the idea forth in that regard allowing for a competition.

Do you need to have a prize at the end or is the prize the jobs and the economic activity that come with development?

Mr. SMITH. Yes. I think the jobs and the economic development that come with the activity are going to be sufficient assuming that we go through the consent process and local and State governments have full input into this process.

Senator MURKOWSKI. Yes, back to the full collaboration.

Mr. Fertel.

Mr. FERTEL. I think the only thing I would add and it was said by one of the Senators, it's credibility of the Federal program that you're going to actually implement effectively over time. I think that's the other aspect that's got to be very important to everybody.

Senator MURKOWSKI. We kind of lost that credibility at this point. Nobody believes that we're going to be—

Mr. FERTEL. That's part of it. That's part of the problem right now that I think we have. I know that you visited the WIPP facility and saw that.

While it's a great success right now, it took them over 10 years, you know, to get to the point where they believed in it and then they made it work.

Senator MURKOWSKI. Let me ask the question since you mentioned 10 years. As I asked the Secretary whether or not the 10-year period within which we've outlined in the legislation is sufficient, is too aggressive?

Do you believe that we can get to that point where we have the, a storage facility up and operating within a 10-year period?

Mr. FERTEL. I think to Geoff's comment on a pilot type facility that's taking the decommissioned waste, I think that's certainly possible the same way the Secretary said it. DOE is looking at the infrastructure required right now at the sites that are shut down.

What would they need there to be able to take the canisters?

Would it be by truck to rail or by truck all the way?

So we think 10 years actually is good. It's a forcing function, obviously not to cut any corners on safety or anything, but a forcing function to be diligent in doing it.

Senator MURKOWSKI. Mr. Chairman, I do have some other questions, but I'll submit them in writing as I'm sure some of our colleagues will as well.

But thank you for the hearing and thank you to all of our witnesses.

The CHAIRMAN. Very good point. We'll keep the hearing record open for our colleagues who have additional questions.

Thank you to all of our witnesses for their patience. Obviously we've got a lot of heavy lifting to do to get a bipartisan bill like this enacted. But we're going to do everything we can because it seems to me to just allow this to go on and on and on as we heard in the discussion with Senator Risch, means that we have a solution that, at least, everyone agrees is unacceptable.

So we thank all of you. Thank you for your patience. The Energy and Natural Resources Committee is adjourned.

[Whereupon, at 4:43 p.m. the hearing was adjourned.]

[The following statements were received for the record.]

NUCLEAR WASTE STRATEGY COALITION,  
*July 30, 2013.*

Hon. RON WYDEN,  
*Chairman, Senate Energy & Natural Resources Committee, 304 Dirksen Senate Office Building, Washington, DC,*

Hon. LISA MURKOWSKI,  
*Ranking Member, Senate Energy & Natural Resources Committee, 304 Dirksen Senate Office Building, Washington, DC.*

DEAR CHAIRMAN WYDEN, RANKING MEMBER MURKOWSKI, AND SENATE ENR COMMITTEE MEMBERS:

The Nuclear Waste Strategy Coalition (NWSC)\* appreciates your continued commitment to advance the nuclear waste policy debate with introduction of S.1240, the “Nuclear Waste Administration Act of 2013.” We offer the following comments for the record.

Upon reviewing the specific changes from the prior “Discussion Draft” to the current bill as introduced, we were pleased to see improvements in a few significant areas (e.g., removal of statutory “linkage” between pilot storage facilities and progress on a repository; and removal of three federal officials as designated appointees to the Nuclear Waste Oversight Board). It is an unusual and appreciated step for Congress to seek comment on draft legislation, and the revised language is responsive to concerns raised by stakeholders in certain areas. However, we must be clear that additional improvements are necessary to truly create a “sustainable, participatory process for managing nuclear waste,” as intended by the bill’s authors. Respectfully, we outline key areas requiring additional attention below.

#### SETTLEMENT PROVISION (SEC 406(B)(1))

Because it requires utilities to settle existing lawsuits against the federal government in order to have access to future storage facilities (which utilities will have paid for through nuclear waste fee collections from ratepayers), the NWSC must strongly oppose Section 406(b)(1) and seek its removal. Our members cannot support relinquishing rights to damages owed to utilities and their consumers for repeated and costly government failures. Clearly, settling litigation may result in significant benefits for all affected parties, and the NWSC supports voluntary efforts to negotiate mutually acceptable resolutions. In fact, many contract holders (including NWSC members) have settled claims suits with the Department of Justice (DOJ). Recently, however, the DOJ has insisted contract holders give up unrelated contractual rights as the “price” for settlement; it is that fact, not reluctance by contract holders, that prevents more settlements. While the NWSC appreciates the authors’ attempts to protect taxpayers from mounting liabilities associated with the federal government’s failure to perform, the approach in this provision is not the solution. A legislative requirement to settle claims in order to get something the government owes under current federal law—removal of used nuclear fuel and high-level radioactive waste from plant sites—is unjust and unnecessary. Performance remains the key to reducing the federal government’s liability.

#### MANAGEMENT & OVERSIGHT OF NUCLEAR WASTE PROGRAM (TITLE II)

As noted previously, the Nuclear Waste Oversight Board proposed in the discussion draft moved in a positive direction in that S.1240 no longer requires the appointment of three designated federal officials to constitute the Oversight Board. Having said that, the bill’s proposed duo of a Nuclear Waste Administration and an Oversight Board remain vastly inferior to the single-purpose federal corporation model (such as proposed in companion bills S.3322 and H.R.5979, by Senator Voinovich and Representative Upton, respectively, in 2010) and models that similarly establish a qualified board of directors to govern the entity and select and oversee the chief executive. In multiple studies over several decades, experts (most recently the Blue Ribbon Commission on America’s Nuclear Future (BRC)) repeatedly recommend such models to ensure accountability, to reasonably insulate the organization from political interference and excessive turnover, and to develop and implement a focused, integrated program for the transportation, storage, and disposal of nuclear waste. The nuclear waste program cannot continue to be a politically-

driven, ineffective process with no assurance that the nation's consumers will receive what they have long been owed; after all, consumers have paid and continue to pay for the designated purpose of nuclear waste disposal in accordance with the Nuclear Waste Policy Act (NWPA) and government contracts with utilities. While we remain extremely supportive of moving the program out of the Department of Energy (DOE), we are concerned that the proposed single administrator model falls short of addressing the problems inherent in the current model and instead transfers them to a new agency. Therefore, the NWSC continues to seek changes that will establish a single-purpose federal corporation or models that similarly establish a qualified board of directors to select and manage the chief executive.

Additionally, key stakeholders who are knowledgeable about the issues and committed to timely, effective solutions in accordance with the law—representatives of the National Association of Regulatory Utility Commissioners (NARUC); the National Association of State Utility Consumer Advocates (NASUCA); tribal, state, and local governments affected by commercial dry cask storage; the Energy Communities Alliance (ECA); and utility contract holders—should serve on the board. While such stakeholders may serve in other advisory capacities as well, they should not be relegated to advisory status only, as their expertise and commitment are needed to ensure the chief executive fulfills his or her duties.

The current language does not ensure that appointments to the bill's Oversight Board include such qualified, knowledgeable, and engaged stakeholders. In fact, despite their valuable expertise and commitment to a timely resolution of these issues, utility contract holders, and those with any financial interest in utility contract holders, are expressly precluded from serving.

There are a variety of ways to provide for valuable stakeholder representation on a board, and we offer two models here for your consideration. First, we submit that Section 3103 of the aforementioned H.R.5979 provides a preferable approach for populating a board of directors. It calls for the President to appoint 9 members, of which at least 3 were to be from stakeholder organizations that were contributing or had contributed to the Nuclear Waste Fund and at least 2 reserved for nominations from State public utility commissions.

Another approach may be to expressly provide for such a 9-member board of directors to include, for example:

- 1 or more state utility commissioners from states with nuclear power generation and/or commercial dry cask storage to be selected by the President from a list of three nominations per slot from NARUC;
- 1 consumer advocate from a state with nuclear power generation and/or commercial dry cask storage to be selected by the President from a list of three nominations from NASUCA;
- 1 or more representatives from tribal, state, or local governments with commercial dry cask storage within their legal boundaries to be selected by the President;
- 1 local government representative from a community that is adjacent to or impacted by DOE activities to be selected by the President from a list of three nominations from the ECA;
- 1 or more utility contract holders to be selected by the President from a list of three nominations per slot from Nuclear Energy Institute;
- 1 representative of an environmental organization that is supportive of constructively solving the nuclear waste issue to be selected by the President; and
- Any others necessary to fill the remaining board slots to be selected via an application process to be established by the board members above.

Either of these approaches, especially when paired with a federal corporation model, is far preferable to the approach for appointments to the bill's Oversight Board. While the Oversight Board section improved from the discussion draft, the bill still fails to (i) provide for a board that selects and manages the chief executive; (ii) ensure key, qualified stakeholder appointments to the board; and (iii) prevent board appointees who are not working toward the safe and timely removal and disposal of nuclear waste from current locations across the country. Populating a board of directors or the bill's proposed Oversight Board with any entity that is not supportive of constructively solving the nuclear waste issue is unacceptable and should be strictly prevented. We stress that regardless of one's position on nuclear power, it is in the country's best interest to resolve this issue in a responsible and timely manner.

Finally, regardless of the model chosen for transferring nuclear waste management functions out of DOE, guidance to facilitate a smooth transition would be helpful. Representative Upton's H.R.5979 called for the President to appoint a "Transi-

tion Manager” to oversee this important exercise, and we recommend such a provision for inclusion in S.1240.

#### FUNDING REFORM (TITLE IV)

The NWSC strongly supports the bill’s provision to ensure that future payments collected by utilities from electric consumers are directed to the new management entity for use in the program via creation of a new Working Capital Fund (WCF) and without reliance on the annual appropriations process. This is a marked improvement over the current state of Nuclear Waste Fund (NWF) operation and is similar to the reforms proposed in the previously referenced companion bills introduced in 2010, S.3322 and H.R.5979.

While S.1240’s proposed approach to reform the nuclear waste program’s funding mechanism is the most positive aspect of the legislation, it falls short in that it fails to:

- maintain Congressional review of changes in the nuclear waste fee;
- transfer future accrued interest on the NWF to the new WCF;
- transfer future 1-time fee payments to the new WCF; and most importantly,
- ensure the NWF corpus will be made available when needed for future program needs without being subject to competing appropriations—a challenging goal but one that could be accomplished with transfers to the new management entity over a reasonable schedule, preferably defined within the legislation.

We understand the complexity in addressing the entire funding problems at once and commend the authors for this positive first step to ensure access to future collections. However, we must continue to argue for all consumer payments into the NWF to be preserved for nuclear waste management and disposal as intended by the NWPA.

Likewise, we support the funding reform measure recommended by BRC Co-Chairs Hamilton and Scowcroft in a December 2011 letter to the President and repeated in their January 2012 report. They delineated near-term steps designed to protect future payments by electric consumers as follows:

We have recommended that your Administration offer to amend the standard nuclear waste contract with nuclear utilities, which you are authorized to do under current law, so that utilities remit only the portion of the annual nuclear waste fee that is appropriated for waste management each year. The rest of the funding would be placed in a trust account, held by a qualified third-party institution, to be available when needed. At the same time, we have recommended that the Office of Management and Budget work with the Congressional budget committees and the Congressional Budget Office to change the budgetary treatment of annual fee receipts so that these receipts can directly offset appropriations for the waste program.

Unfortunately, this recommendation does not appear to have been pursued by the Administration despite its authority to take action under current law, and no transparent explanation has been offered. We respectfully ask for the consideration that this novel-yet-straightforward approach deserves.

#### CONSENT-BASED SITING (TITLE III)

The NWSC sincerely hopes that consent may be achieved in siting future nuclear waste storage and disposal facilities and believes that DOE should be taking actions now to facilitate meaningful host interest. Such efforts should complement (and not compete with) actions to carry out the NWPA, which itself recognized the need for additional nuclear waste facilities and provided for a degree of state and local input into facility siting. In any consent-based siting process, the NWSC emphasizes the need to (i) maintain flexibility so as not to limit creative, effective solutions that may be proposed by potential hosts and negotiated by the parties in consent agreements; and (ii) produce a legally enforceable consent agreement as quickly as possible so that the nation may, in a timely manner, plan for and rely on such facilities. Regarding the former, we thank the authors for restoring a degree of flexibility to potential hosts with two noteworthy changes included in the filed bill: (1) removal of the prior “linkage” provisions pertaining to the pilot storage facility; and (2) removal of the former requirement that the Administrator take into account “undue burdens” on a state in siting process.

## STORAGE FACILITIES (SECTION 305)

To make progress in the removal of used nuclear fuel and high-level radioactive waste, the NWSC supports pursuing consolidated storage with priority for shutdown reactor fuel on a parallel track with current and future pursuit of permanent disposal facilities. We are pleased that the provisions pertaining to pilot storage facilities for priority waste now contain no applicable linkage provisions that limit a potential host's ability to negotiate contract terms as appropriate. Regarding the bill's provisions for additional storage facilities for nonpriority waste, details regarding scope, timeline, and cost-effectiveness remain unsupported and unclear. Therefore, the new management entity should be directed to timely develop only those additional storage facilities deemed necessary and cost-effective following extensive analysis and stakeholder input. Finally, while we continue to believe statutory linkage is unnecessary, the linkage pertaining to additional storage facilities is an improvement over the linkage provisions in the discussion draft.

## REPOSITORIES (SECTION 306)

Recognizing a need for disposal under any scenario, actions to support the prompt removal of used nuclear fuel and high-level radioactive waste must include establishing a permanent disposal facility as soon as possible. The bill should, but does not, reaffirm the need to carry out the important statutory requirements pertaining to the nation's first permanent repository at Yucca Mountain. The NWPA is the law of the land and should be enforced, and the critical next step is the completion of the Nuclear Regulatory Commission's (NRC) independent and well-advanced review of the Yucca Mountain license application that was submitted by DOE in 2008. Specifically, we request Congressional leadership in (i) appropriating the necessary funds to facilitate timely completion of the licensing process; and (ii) requesting a specific plan from DOE and NRC for completing the licensing process, including identification of the resources required, particularly in light of pending action by the US Court of Appeals for the DC Circuit. Whether or not a consent-based process for future disposal facilities is enacted and successful, the Yucca Mountain repository was designated by Congress and merits the scientific review begun years ago and required by law. Given the approximately \$35 billion (including interest) paid by electric consumers for the purpose of such disposal, it is time for the NRC to provide answers to the public.

We agree with the bill's removal of the 70,000 MTU limit imposed on the Yucca Mountain repository in the NWPA, but we recognize that it may be appropriate for the new management entity to begin efforts to site a second repository.

While providing a consent-based process for siting additional repositories is in itself positive, the bill's target date of December 2048 for such a repository to be operational provides no sense of urgency. It simply mirrors the DOE Strategy's proposed repository date, which is unsupported and so distant that potential hosts for consolidated storage facilities would be justifiably nervous about becoming de facto permanent sites. It would be a far better signal to such potential hosts and to the public for Congress and the Administration to support (i) timely completion of the Yucca Mountain process; and (ii) a more reasonable target date for an additional repository sited under a consent-based approach. In addition to the often-stated reasons for a permanent repository, some states are precluded from using nuclear as a generation source until a repository is operational, and thus, from pursuing an all-of-the-above energy strategy as recommended by the Administration.

Finally, the regulatory structure with respect to any new repository should be properly defined. To place a new repository other than Yucca Mountain into operation, the country needs workable generic repository public health and safety standards. Unfortunately, none exist today. With no generic standards in place, it is not clear how a repository siting process can move forward. Even in the best case scenario, experience indicates it will take the better part of a decade to promulgate such standards. Therefore, the new management entity should promote the prompt development of modern, workable repository health and safety standards applicable on a generic basis to any repository other than Yucca Mountain.

## TRANSPORTATION (SECTION 309)

DOE or the new management entity should facilitate the construction and operation of infrastructure and systems necessary to transport commercial used nuclear fuel and high-level radioactive material (as required in the NWPA) in existing and future NRC-licensed canisters to consolidated storage and permanent disposal facilities as appropriate. We were pleased to see that the bill reaffirms the need for technical assistance and funding for the training of public safety officials in local com-

munities and tribes that are affected by used nuclear fuel and high-level radioactive waste transportation.

\* \* \* \* \*

Thank you for the opportunity to submit these comments and for the time and attention you have devoted to these critical issues of national importance. Your continued leadership is needed—to facilitate the removal of used nuclear fuel and high-level radioactive waste from existing and decommissioned reactor sites across the country and to protect millions of electric consumers and all taxpayers. The NWSC stands ready to work with you and your Congressional colleagues, the Administration, and DOE to advance meaningful nuclear waste policy reform.

Sincerely,

DAVID C. BOYD,  
*Chairman, Nuclear Waste Strategy Coalition,  
 Commissioner, Minnesota Public Utilities Commission.*

*\*The NWSC is an ad hoc organization representing the collective interests of member state utility regulators, consumer advocates, tribal governments, local governments, electric utilities, and other government and industry experts on nuclear waste policy matters. Its primary focus is to protect electric consumer payments into the Nuclear Waste Fund and to support the removal and ultimate disposal of used nuclear fuel and high-level radioactive waste currently stranded at numerous sites across the country.*

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STATEMENT OF LYNN E. DAVIS & DEBRA KNOPMAN<sup>1</sup>, THE RAND CORPORATION, ON  
 S. 1240—NUCLEAR WASTE ADMINISTRATION ACT OF 2013<sup>2</sup>

As lead authors of the 2012 RAND report *Choosing a New Organization for Management and Disposition of Commercial and Defense High-Level Radioactive Materials*,<sup>3</sup> we would like to comment on the way in which the Nuclear Waste Administration Act (S. 1240) appears to strike a balance between the competing values of public accountability and insulation from political influence.

We share the view of the Blue Ribbon Commission (BRC), the administration, and (now) this Committee that there is a need to move forward expeditiously with the establishment of a new organization responsible for the management and disposition of nuclear waste.

The Nuclear Waste Administration Act calls for a new, independent agency, headed by a single administrator. A conclusion of the RAND study, adopted by the administration in its *Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste*,<sup>4</sup> is that either an independent government agency or a federal government corporation could be established with the critical attributes of accountability, transparent decisionmaking, autonomy, a public interest mission, and organizational stability.

The RAND study also concluded that the choice between an independent agency and a government corporation should hinge on how Congress and the President wish to strike the balance between competing sets of values: providing sufficient mechanisms for political accountability to uphold the public interest, influencing the operations of the organization, and maintaining the political credibility to engage

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<sup>1</sup>The opinions and conclusions expressed in this testimony are the author's alone and should not be interpreted as representing those of RAND or any of the sponsors of its research. This product is part of the RAND Corporation testimony series. RAND testimonies record testimony presented by RAND associates to federal, state, or local legislative committees; government-appointed commissions and panels; and private review and oversight bodies. The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

<sup>2</sup>This testimony is available for free download at <http://www.rand.org/pubs/testimonies/CT398/>

<sup>3</sup>Lynn E. Davis, Debra Knopman, Michael D. Greenberg, Laurel E. Miller, Abby Doll, Paul Steinberg, Bruce R. Nardulli, Tom LaTourrette, Noreen Clancy, and Zhimin Mao, *Choosing a New Organization for Management and Disposition of Commercial and Defense High-Level Radioactive Materials*, Santa Monica, Calif.: RAND Corporation, MG-1230-DOE, 2012, <http://www.rand.org/pubs/monographs/MG1230>. For a summary of the research, see *Options for an Organization to Manage and Dispose of Radioactive Materials*, Santa Monica, Calif.: RAND Corporation, RB-9677-DOE, 2012, [http://www.rand.org/pubs/research\\_briefs/RB9677.html](http://www.rand.org/pubs/research_briefs/RB9677.html).

<sup>4</sup>U.S. Department of Energy, *Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste*, January 2013, <http://energy.gov/downloads/strategy-management-and-disposal-used-nuclear-fuel-and-high-level-radioactive-waste>.

successfully with stakeholders, on the one hand, and providing autonomy, insulating the organization from political pressure, and ensuring its flexibility in conducting its activities, on the other.

In proposing the establishment of a government agency, S. 1240 strikes the balance in favor of more political accountability: ensuring that the public interest is taken into account in the organization's operation and making available (through the relationship to the President) the full resources of the federal government for the siting of storage and disposal facilities. At the same time, S. 1240 sets the term of the administrator to six years, with the option to serve multiple terms. This will provide greater organizational stability and political insulation than has been the case with the program being managed by the Department of Energy.

As the Committee knows, the BRC struck a different balance in recommending a federal government corporation, favoring greater independence from executive branch oversight and, thus, more political insulation and potentially even more organizational stability.

While the choice in S. 1240 of an independent government agency clearly signals the sponsors' interest in more autonomy and independence than offered by the status quo of continued program management by the Department of Energy, the inclusion of the Oversight Board in Section 205 indicates a desire to moderate that autonomy with an additional layer of oversight between the administrator and the executive branch and Congress. The President would appoint five members to the board with the advice and consent of the Senate, with not more than three members coming from the same political party. Members would have staggered six-year terms to maintain the continuity of the board's operations.

The RAND report assessed the various structural and procedural features that either are inherent in the independent government agency model or can be built into it to achieve more or less autonomy and accountability.<sup>5</sup> For example, the most common governance and executive structure for an independent government agency is a multimember board or commission, although several have only a single administrator. The Federal Reserve Board has seven members; NASA and EPA have single administrators; the U.S. Postal Service has a board of governors appointed by the President, and this board appoints the Postmaster General.<sup>6</sup>

S. 1240 would represent a departure from precedent by designating a single administrator and then inserting the Oversight Board above the administrator. Section 205(a)(1) and (a)(2) provide the board with considerable scope in reviewing not only financial aspects of the Nuclear Waste Administration's (NWA) operations but also the performance of the administrator in carrying out his or her responsibilities, the NWA's mission plan, and management reports. The board will independently report to the President and Congress (Section 205(n)).

On the basis of our study, we have some concern that this structure could lead to gridlock within the NWA. It is difficult to see how the Oversight Board adds value in terms of accountability beyond what is ordinarily provided by Congress and the executive branch, particularly in the absence of a requirement that stakeholders be represented on the board: states, local government, tribes, industry, and public interest groups. In effect, the Oversight Board would be a third layer of oversight scrutinizing the actions of the NWA administrator. The board would be in addition to the Inspector General, a fourth layer of accountability, established under Section 204.

We note that Section 502(c) of S.1240 provides for the establishment of one or more advisory boards. Our view is that advisory boards will provide the administrator with a transparent, manageable mechanism for regularly garnering a range of views from stakeholders and experts, and they will provide the executive branch and Congress more generally with a sounding board regarding the policies, management, and operations of the NWA.

In Chapter Two of the RAND report, we assess the several reasons that past arrangements for the management and disposition of nuclear waste failed. One of the primary difficulties that the Office of Radioactive Waste Management in the Department of Energy faced over the past 30 years in carrying out its mission under the 1982 Nuclear Waste Policy Act was micromanagement on the part of the White House and Congress. Without the inclusion of the Oversight Board, the NWA will still have access to the normal oversight mechanisms within the executive branch and in Congress, and it will have its own Inspector General as a further backstop. The potential benefit of another layer of oversight seems small in comparison to the potential cost of organizational dysfunction.

<sup>5</sup> This discussion can be found in Chapter Four and is summarized in Table 4.3 of the RAND report.

<sup>6</sup> See p. 32 of the RAND report.



## APPENDIX

### RESPONSES TO ADDITIONAL QUESTIONS

#### RESPONSES OF JOE GARCIA TO QUESTIONS FROM SENATOR WYDEN

*Question 1.* One of the central recommendations of the Blue Ribbon Commission is the need for a consent-based siting process where the Federal Government works with States and Indian Tribes to pick a site, and not in opposition to them. If there's a lesson that can be learned from Yucca Mountain, it's that the Federal Government needs to do a better job of working with States in picking nuclear waste sites. However, I don't think you can have a process that puts what's politically expedient ahead of safety. How can communities and the States that surround them be assured that a consent-based siting process is picking a safe site, not just the most politically popular site?

*Answer.* The question needs to be rephrased to include tribal governments and tribal communities regarding assurance of consent-based siting. Tribal governments have common as well as different priorities about criteria for siting as well as transportation issues. Early and meaningful consultation and participation in the siting processes will be important as well. There are federal consultation policies which must be implemented as tribes tribal considerations were not considered important in previous siting matters. Transportation issues are important as spent nuclear fuel payloads destined for a repository or interim storage facility will be transported through and near lands under tribal government jurisdiction.

*Question 2.* Historically, citizens, local governments, and tribes have expressed interest in hosting nuclear waste facilities, but state-level opposition prevented any deals from being signed. Our bill tries to address this problem by clearly spelling out a role for the state from the beginning. Are there other measures that we should include to address potential differences between local communities and broader, state-wide interests?

*Answer.* states sought to undermine tribes interested in hosting a repository. State congressional delegations introduced federal legislation aimed at suppressing tribal participation that included prohibition of building rail and highway routes through state and federal lands for access to tribal lands for these purposes. Tribal sovereignty has to be recognized in future siting processes.

#### RESPONSES OF JOE GARCIA TO QUESTIONS FROM SENATOR MURKOWSKI

*Question 1.* With regard to the Oversight Board, the legislation leaves it to the President to determine who should be appointed—with the advice and consent of the Senate. Some have recommended that seats be reserved for various entities. Do you believe this legislation should provide more specificity as to who should be appointed to the Board?

*Answer.* The makeup of an Oversight Board should be identified and must include a qualified tribal government official for the participatory reasons stated above.

*Question 2.* While I understand that some of you would prefer a Board of Directors structure to the new entity, assume that the single Administrator approach is retained. Is the six-year service term appropriate? Should it be longer/shorter?

*Answer.* A four year term may be more palatable with staggered term appointments to overlap changes in the administration.

*Question 3.* How many storage facilities and repositories do you believe will be needed to handle this nation's nuclear waste? Should they be co-located? Should they be geographically spread across the country?

*Answer.* Wherever the storage facilities and repositories, singular or plural, are located, a significant factor should be that the location should be in the immediate vicinity of the beneficiaries. If a study was done, the previous locations of these proposed facilities on and near tribal lands were beyond the service areas of the nuclear-powered reactors. The customers who derive benefit from nuclear energy oper-

ation and transmission should bear the risk of spent nuclear fuel storage and disposition as a matter of equity. Ironically, Prairie Island Indian Community which is adjacent to the Prairie Island Xcel operations does not receive one kilowatt of power from the immediate neighboring reactors.

*Question 4.* When it comes to a state, local community, or tribal government interacting with the new entity, is it preferable to interact with a single administrator type structure, or a board of directors with a CEO?

Answer. The question creates the question of how much decision-making authority a CEO has in representing the Board opinions, but a board entity is preferable and more likely to be even-handed.

#### IN CLOSING FOR THE RECORD

There is concern from Indian Country about the current dynamic of DOE consultation and outreach on these matters. As stated in testimony, from the outset of the Nuclear Waste Policy Act the Department of Energy created and fostered deep distrust by tribal governments and communities by excluding them from meaningful participation. We are not convinced that DOE learned any valuable lessons regarding the required consultation embodied in Executive Order 13175 when it comes to federal spent nuclear fuel and radioactive waste repository, interim storage, and transportation issues.

In addition to potential long term devastating impacts to tribal lands, resources, peoples, and communities, there are places of great cultural significance which places tribal cultural integrity at risk. There should be an extensive effort by DOE to ensure that tribal concerns are solicited and included in all phases and components of managing and disposing of spent nuclear fuel and radioactive waste. Soliciting tribal impacts and concerns falls under the trust obligation of the DOE.

There is even greater concern about the failure of the DOE Office of Nuclear Energy (NE) to ensure dissemination of current and planned programs and policies to Indian Country. DOE NE Nuclear Fuels Storage & Transportation Planning Project management officials choose not to fund a tribal entity that would help inform tribal officials about the status of the transportation program despite repeated requests by tribal representatives to fund a tribal entity for these same purposes. DOE transportation officials contend they do not have an active campaign or program to ship but are inviting tribal officials to transportation meetings and even paying for travel. However DOE also is funding several state regional organizations to convene forums and meetings to meet with DOE officials and discuss relevant topics while ignoring repeated requests to fund a similar entity for tribal governments. In short, DOE has funded several state entities for the benefit of states state constituents to express their concerns and raise issues but DOE is not doing the same on behalf of tribal governments and communities.

There may not be an active transportation program regarding spent nuclear fuel and radioactive waste but obviously DOE is supporting state entities and meetings are taking place. We request the Energy Committee look into the how DOE is conducting outreach and consultation with tribes on all aspects of spent nuclear fuel and radioactive waste management and disposal.

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#### RESPONSE OF HON. ERNEST J. MONIZ TO QUESTION FROM SENATOR MURKOWSKI

*Question 1.* Do you think that future required R&D activities—those that could be needed to address any outstanding issues, such as waste storage and transportation issues are enabled by the proposed legislation? Do we need to be more specific about the type of R&D that DOE and/or the new administration should carry out? Also, do you think that there are any open issues that may pose a challenge to get a storage facility and/or repository sited, licensed and constructed with the current timeline?

Answer. The Administration is still reviewing the draft legislation, S. 1240.

While we expect there will be challenges in implementing the program, the timeline and program laid out in the Strategy is achievable but is dependent on legislation for full deployment. In the meantime, the Administration, through the Department of Energy (DOE), is undertaking activities within existing Congressional authorization to plan for the eventual transportation, storage, and disposal of used nuclear fuel. Activities range from examining waste management system design concepts, to developing plans for consent-based siting processes, to conducting research and development on the suitability of various geologies for a repository.

## RESPONSES OF HON. ERNEST J. MONIZ TO QUESTIONS FROM SENATOR HEINRICH

*Question 1.* In a consent-based process, what would be the appropriate range of terms and conditions for a state, tribe and local community to consent to hosting a repository or an interim storage facility? For example, in addition to a package of benefits and compensation, do you think states and tribes should be given a role in the regulatory, permitting and oversight of the storage facility or repository?

Answer. Promising experiences in other countries indicate that a consent-based process, developed through engagement with states, tribes, local governments, key stakeholders, and the public, offers a greater probability of success than a top down approach to siting. Defining consent, deciding how that consent is codified, and determining whether or how it is ratified by Congress are critical first steps toward siting the storage facilities and repository. As such, they are among the near-term activities to be undertaken by the Administration in consultation with Congress and others. The Department is currently gathering information from the siting of nuclear facilities in the U.S. and elsewhere in order to better understand critical success factors in these efforts and to facilitate the development of a future siting process for a repository and storage facilities. As part of this process the Department will consider the question of host-requested terms and conditions. The Administration looks forward to working with Congress to develop a consent-based process that is transparent, adaptive, and technically sound.

The Administration's Strategy endorses the proposition that prospective host jurisdictions must be recognized as partners. Public trust and confidence is a prerequisite to the success of the overall effort, as is a program that remains stable over many decades; therefore, public perceptions must be addressed regarding the program's ability to transport, store, and dispose of used nuclear fuel and high-level radioactive waste in a manner that is protective of the public's health, safety, and security and protective of the environment.

*Question 2.* The BRC's proposed consent-based process calls for a cooperative agreement for communities that host nuclear waste storage or disposal facilities. Such an agreement could include substantial financial commitments and possible regulatory roles not generally provided to states. Under such a consent-based process, would states and communities have greater confidence the government will actually meet its commitments if Congress also ratified the agreements made with the states, tribes and communities?

Answer. Promising experiences in other countries indicate that a consent-based process, developed through engagement with states, tribes, local governments, key stakeholders, and the public, offers a greater probability of success than a top down approach to siting. Defining consent, deciding how that consent is codified, and determining whether or how it is ratified by Congress are critical first steps toward siting the storage facilities and repository. As such, they are among the near-term activities to be undertaken by the Administration in consultation with Congress and others. The Department is currently gathering information from the siting of nuclear facilities in the U.S. and elsewhere in order to better understand critical success factors in these efforts and to facilitate the development of a future siting process for a repository and storage facilities. The Administration looks forward to working with Congress to develop a consent-based process that is transparent, adaptive, and technically sound.

*Question 3.* In the cooperative agreement with the state, tribe and local community for an interim storage facility, should there also be an enforceable deadline with penalties for failing to remove the waste from the storage facility? How large do you think such a penalty would have to be to assure a repository was in operation in 2048 as required? What would be the source of funds for the payment of penalties?

Answer. The BRC recommended that "one or more consolidated (interim) storage facilities be developed to start the orderly transfer of used nuclear fuel from reactor sites to safe and secure centralized facilities independent of the schedule for operating a permanent repository." The Administration agrees that interim storage should be included as a critical element in the waste management system. DOE has initiated a planning project with the objective of pursuing activities that can be conducted within the constraints of the NWPA and will facilitate the development of an interim storage facility, of a geologic repository, and of the supporting transportation infrastructure, including evaluating operational options for consolidated storage and furthering the design of a generic consolidated storage facility. The Department will continue with these activities within existing Congressional authorization while the Administration and Congress work together on potential changes to the nuclear waste management program.

## RESPONSES OF HON. ERNEST J. MONIZ TO QUESTIONS FROM SENATOR SCOTT

## PLUTONIUM DISPOSITION

*Question 1.* How can the Administration reconcile a “slowdown” to the program that could ultimately kill the MOX project, and simultaneously pledge to uphold our agreement with the Russians?

Answer. The United States remains committed to achieving the important nonproliferation mission associated with the disposition of excess weapon-grade plutonium and to our agreement with Russia. However, considering the unanticipated cost increases associated with the MOX fuel approach and the current budget environment, the Administration is conducting an analysis to determine whether there are options to complete the mission more efficiently.

## MOX PROJECT

*Question 2.* How much will the slowdown of the MOX project affect its cost and schedule?

Answer. As mentioned in response to your first question, the United States remains committed to achieving the important nonproliferation mission associated with the disposition of excess weapon-grade plutonium and to our agreement with Russia. However, considering the unanticipated cost increases associated with the MOX fuel approach and the current budget environment, the Administration is conducting an analysis to determine whether there are options to complete the mission more efficiently. Cost and schedule impacts will be a central component in determining next steps for fulfilling our plutonium disposition commitments.

*Question 3.* What are NNSA’s estimates on how much it would cost to shut down the MOX project?

Answer. NNSA does not have a current estimate of the cost to shutdown the MOX project.

*Question 4.* How much is the study expected to cost and where will the money come from—NNSA, NE, EM or elsewhere?

Answer. The Administration is conducting an analysis of plutonium disposition options, which is being funded primarily through NNSA.

*Question 5.* When is the study expected to be completed?

Answer. The Department intends to use the analysis in order to inform the FY 2015 budget.

*Question 6.* What are the other alternatives and are they consistent with the US-Russia agreement?

Answer. The analysis includes continuing the current path of disposing of plutonium as MOX fuel as well as other technically and financially feasible options. The U.S.-Russia Plutonium Management and Disposition Agreement (PMDA) allows for other disposition paths if agreed to by both parties.

*Question 7.* Will the US-Russia Agreement have to be amended if the Obama Administration shuts down the MOX project to use an alternative?

Answer. The United States remains committed to achieving the important nonproliferation mission associated with the disposition of excess weapon-grade plutonium and to our agreement with Russia. The U.S.-Russia Plutonium Management and Disposition Agreement (PMDA) allows for other disposition paths if agreed to by both parties.

*Question 8.* What assurance do we have that Russia will be amenable to something other the MOX process?

Answer. The U.S. will continue to engage Russia while conducting the options analysis and will work to continue progress in implementing the PMDA.

*Question 9.* What national security assessments will be made if the MOX project is ultimately shut down?

Answer. The Department has not cancelled the MOX project, and we cannot prejudge the outcome of the options analysis.

*Question 10.* What options have been previously reviewed and eliminated and what has changed since the time of those studies that these same options should be considered again? What new serious options exist today that have not already been evaluated?

Answer. As previously mentioned, the United States remains committed to achieving the important nonproliferation mission associated with the disposition of excess weapon-grade plutonium and to our agreement with Russia. However, considering the unanticipated cost increases associated with the MOX fuel approach and the current budget environment, the Administration is conducting an analysis to determine whether there are options to complete the mission more efficiently. The options include continuing the current path of disposing of plutonium as MOX fuel as

well as other technically and financially feasible options. Previous reviews of the Administration's plutonium disposition strategy will be taken into account in this new analysis. Some options are being analyzed that have been considered in the past; however, the new analysis will take into consideration new data and changes in the operating plans of DOE facilities.

*Question 11.* How does the Administration intend to comply with the agreement with the State of South Carolina for the permanent disposition or removal of plutonium in the state?

Answer. The Department understands our commitments under current legislation, and we will look to ensure compliance with the law as we analyze plutonium disposition options.

*Question 12.* What will be the costs of complying with the agreement with the State of South Carolina and of non-compliance?

Answer. Beginning in 2016, current law stipulates "economic assistance" in the form of fines and penalties of \$1 million per day up to \$100 million per year, subject to appropriations.

*Question 13.* Does the Administration have a contingency for the removal of all the plutonium in the state of South Carolina?

Answer. The Department understands the provisions of current law, and we will look to ensure compliance with the law as we analyze options.

*Question 14.* If the MOX project is cancelled, will NNSA remove the plutonium from SRS, and if so, to where? How much will it cost to package, transport, safeguard and store this sensitive material?

Answer. The Department understands the provisions of the current law, and we will evaluate the costs associated with meeting requirements as the path forward is determined.

*Question 15.* If the plutonium storage facilities at Pantex are getting full, or, as the DOE IG found earlier this year may not be able to safely hold plutonium for much longer due to the age and condition of the storage bunkers, what is NNSA's plan for the plutonium at SRS and Pantex?

Answer. Although aged, the storage facilities at Pantex are safe and continue to be maintained by NNSA as mission critical assets. Additionally, a recent DOE IG study focused its concerns on bunkers which comprise a portion of the facilities used for plutonium storage at Pantex. As part of ongoing efforts to develop NNSA's plutonium strategy, we are evaluating effective ways to safely store plutonium.

#### SET-TOP BOXES

*Question 1.* How many taxpayer dollars have been spent to date on DOE's rulemaking regarding set-top box energy conservation requirements?

Answer. To date, DOE has spent a total of approximately \$2.9 million in contract funding and approximately \$300,000 on Federal salary and benefits on the development of energy conservation standards and test procedure development for set-top boxes. This includes the development of the test procedure that is used to measure the energy efficiency of the set-top boxes. These test procedures are necessary as a foundation to both voluntary and regulatory programs.

*Question 2.* How many taxpayer dollars does DOE anticipate spending during the lifecycle of this rulemaking process?

Answer. A typical energy conservation standards rulemaking takes about 3 years to accomplish and costs approximately \$3 to \$5 million to complete, depending on the complexity of the rulemaking being performed. DOE is still early in the rulemaking process for set-top boxes, and acknowledges that funding of the process is subject to annual appropriations.

*Question 3.* Has DOE contracted any of this rulemaking out to third parties? How much has been spent on the contractors?

Answer. Yes, DOE has contracted approximately \$2.9 million for energy conservation standards analysis and test procedure development for set-top boxes to date. The analysis was provided to industry and others and supported the voluntary agreement discussion. Test procedure development and finalization is necessary for both voluntary agreements and mandatory regulations. Contractors represent one way for DOE to access the expertise it needs to advance a rulemaking for the timeframe DOE requires that expertise.

*Question 4.* In terms of carbon dioxide emissions savings, what percentage of the United States' total carbon dioxide emissions do you anticipate DOE's set-top box energy conservation standards will save?

Answer. DOE has not proposed an energy conservation standard for set-top boxes, so it is not yet possible to estimate the carbon dioxide savings that could occur from an energy conservation standard at this time. If DOE were to propose an energy

conservation standard, the proposed rulemaking would include an estimate of the potential carbon dioxide savings.

Overall appliance and equipment standards are saving consumers significant amounts on their energy bills and helping avoid significant emissions of carbon dioxide. Based on a recent study by Lawrence Berkeley National Laboratory<sup>1</sup>, Federal energy conservation standards promulgated through 2011 saved consumers an estimated \$42 billion on their utility bills and carbon emissions reductions attributed to the standards were realized at 176 million metric tons in 2011.

*Question 5.* What percentage of total global carbon dioxide emissions do you anticipate DOE's set-top box energy conservation standards will save?

Answer. DOE has not proposed an energy conservation standard for set-top boxes. If DOE were to propose an energy conservation standard, the proposed rulemaking would include an estimate of the potential carbon dioxide savings.

*Question 6.* If industry is willing to achieve the same cost and energy savings throughout a voluntary agreement, is it still DOE's intention to proceed with a federal rulemaking process?

Answer. DOE strongly encourages and will consider any non-regulatory agreement as an alternative to a regulatory standard. DOE recognizes that voluntary or other non-regulatory efforts by manufacturers, utilities, and other interested parties can result in substantial improvements to energy efficiency or reductions in energy consumption. In fact, as part of its rulemaking activities to consider a regulatory efficiency standard, DOE prepares a regulatory impact analysis. The regulatory impact analysis evaluates non-regulatory alternatives to standards, in terms of their ability to achieve significant energy savings at a reasonable cost, and compares the effectiveness of each one to the effectiveness of the proposed standards.

*Question 7.* Considering the American taxpayers are funding this federal rule making process, how do additional layers of government red-tape ultimately benefit the taxpayers considering the industry has agreed to set-top box energy efficiency standards at no cost to the taxpayer?

Answer. DOE's statutory requirement is to maximize energy efficiency that is technologically feasible and economically justified (42 USC 6295 (o) (2)). DOE's appliance standards program ensures that taxpayers are receiving cost-effective energy savings as justified by a thorough analysis of alternatives to determine which option conforms to this statutory requirement.

DOE's appliance and equipment standards program seeks to deliver significant benefits to consumers across the country across a wide variety of products. Overall appliance and equipment standards are saving consumers significant amounts on their energy bills and helping avoid significant emissions of carbon dioxide. Based on a recent study by Lawrence Berkeley National Laboratory<sup>2</sup>, Federal energy conservation standards promulgated through 2011 saved consumers an estimated \$42 billion on their utility bills and carbon emissions reductions attributed to the standards were realized at 176 million metric tons in 2011.

#### RESPONSES OF HON. ERNEST J. MONIZ TO QUESTIONS FROM SENATOR BALDWIN

*Question 1.* You mention in your testimony the subject of commingling defense and commercial waste in the same repository as being a matter of policy since 1985. It is my understanding that the repository requirements for defense high-level waste and commercial spent fuel are quite different. In order to avoid further delays in nuclear waste processing, clarity about regulatory authority for both defense high-level and commercial waste is essential. Given the opportunity, do you think that the US would benefit by re-separating these waste streams? And if so, do you think that the defense waste should remain with the Department of Energy or be transferred to the proposed Nuclear Waste Administration for management?

Answer. The Nuclear Waste Policy Act requires that either a commingled repository or a defense-only repository be regulated by the Nuclear Regulatory Commission (NRC). As I indicated in my appearance before the Committee, the Department has a study underway to reevaluate whether or not the wastes should be commingled, which draws upon previous work done by the Department. Because the re-

<sup>1</sup>Lawrence Berkeley National Laboratory, Energy and Economic Impacts of U.S. Federal Energy and Water Conservation Standards Adopted From 1987 Through 2011 , <http://ees.lbl.gov/pub/energy-and-economic-impacts-us-federal-energy-and-water-conservation-standards-adopted-1987-0>

<sup>2</sup>Lawrence Berkeley National Laboratory, Energy and Economic Impacts of U.S. Federal Energy and Water Conservation Standards Adopted From 1987 Through 2011 , <http://ees.lbl.gov/pub/energy-and-economic-impacts-us-federal-energy-and-water-conservation-standards-adopted-1987-0>

evaluation is not complete, it is not yet clear what the results will be about commingling and what organization should have the responsibility.

*Question 2.* The NWAA specifically calls for a pilot interim storage facility that accepts 'priority' used fuel. After Kewaunee Power Station closed in May of this year, along with the LaCrosse Boiling Water Reactor, the state of Wisconsin now has two shuttered plants whose fuel in residence would qualify as 'priority'. In the Administration's current Used Fuel Disposition 'Strategy', is there a similar priority placed on fuel residing at shuttered plants? Can you please elaborate on the Administration's position on the storage of 'priority' versus 'nonpriority' used fuel as it differs from the proposed Nuclear Waste Administration Act?

Answer. The Administration is still reviewing the draft legislation, S. 1240. However, the Administration's Strategy specifically supports the development of a pilot interim storage facility with an initial focus on accepting fuel from shut-down reactor sites: "At its core, this Strategy endorses a waste management system containing a pilot interim storage facility; a larger, full-scale interim storage facility; and a geologic repository in a timeframe that demonstrates the federal commitment to addressing the nuclear waste issue, builds capability to implement a program to meet that commitment, and prioritizes the acceptance of fuel from shut-down reactors...The Administration supports a nuclear waste management system with the following elements:

- A pilot interim storage facility with limited capacity capable of accepting used nuclear fuel and high-level radioactive waste and initially focused on serving shut-down reactor sites;
- A larger, consolidated interim storage facility, potentially co-located with the pilot facility and/or with a geologic repository, that provides the needed flexibility in the waste management system and allows for important near-term progress in implementing the federal commitment; and
- A permanent geologic repository for the disposal of used nuclear fuel and high-level radioactive waste."

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RESPONSE OF GEOFFREY H. FETTUS TO QUESTION FROM WYDEN

*Question 1.* One of the central recommendations of the Blue Ribbon Commission is the need for a consent-based siting process where the Federal Government works with States and Indian Tribes to pick a site, and not in opposition to them. If there's a lesson that can be learned from Yucca Mountain, it's that the Federal Government needs to do a better job of working with States in picking nuclear waste sites. However, I don't think you can have a process that puts what's politically expedient ahead of safety. How can communities and the States that surround them be assured that a consent-based siting process is picking a safe site, not just the most politically popular site?

Answer. Communities and the States surrounding potential sites can be assured a safe, technically adequate site—as opposed to a site that is only politically popular—when Congress has ensured that two crucial principles are in effect. First, make sure the public safety and environmental rules are in place before site selection begins. Second, provide States with meaningful and explicit regulatory authority.

MAKE SURE THE RULES ARE IN PLACE BEFORE SITE SELECTION BEGINS

NRDC joins with the President's Blue Ribbon Commission for America's Nuclear Future (BRF) in urging Congress ensure radiation protection standards and licensing rules for developing nuclear waste facilities be in place before the selection of sites begins, and thus, forestalling a host of problems likely to emerge down the road. If there are rules in place before site selection commences, any sites investigated will have to meet (hopefully) protective rules. Further, with rules in place it will be substantially harder to pressure the agencies to weaken established rules in order to allow a pre-selected site to go forward, a primary reason for the failure of the Yucca Mountain process.

Sections 304, 305 and 306 of last year's S. 3469 went much of the way toward having rules in place prior to site selection, thus structuring a result that would avoid repeating the failure of the Yucca Mountain process. Specifically, S. 3469's Section 305(a) directed the U.S. Environmental Protection Agency (EPA) to adopt, by rule, broadly applicable standards for the protection of the general environment from offsite releases from radioactive material in geologic repositories. And S. 3469's Section 305(b) directed NRC to then amend its regulations governing the licensing of geological repositories to be consistent with any relevant standard adopted by

EPA. These requirements and this phasing of agency actions in S. 3469 were appropriate (i.e., first EPA sets the standards and then NRC ensures its licensing process meets those standards). All of this would take place prior to the time site selection would begin in earnest. Unfortunately, Section 307 of S. 1240 does not even approximate such requirements, and ignores the BRC's recommendation that new, applicable rules be in final form before site selection.

PROVIDE STATES WITH MEANINGFUL REGULATORY AUTHORITY

Second, as detailed in our written testimony, we will not approach closure and consent on transparent, phased, and adaptive decisions for nuclear waste siting unless a meaningful and appropriate role for states is provided. This can be done simply by amending the Atomic Energy Act (AEA) to remove its express exemptions of radioactive material from environmental laws. The exemptions of radioactivity make it, in effect, a privileged pollutant. Exemptions from the Clean Water Act and the Resource Conservation and Recovery Act (RCRA) are at the foundation of state and, we submit, even fellow federal agency distrust of both commercial and government-run nuclear complexes.

As the Chairman is aware, most federal environmental laws expressly exclude "source, special nuclear and byproduct material" from the scope of health, safety and environmental regulation by EPA or the states, leaving the field to DOE and NRC. In the absence of clear language in those statutes authorizing EPA (or states where appropriate) to regulate the environmental and public health impacts of radioactive waste, DOE thereby retains broad authority over its vast amounts of radioactive waste, with EPA and state regulators then only able to push for stringent cleanups on the margins of the process. Indeed, the BRC Report discusses the State of New Mexico's efforts to regulate aspects of the Waste Isolation Pilot Plant through RCRA as critical positive element in the development of the currently active site. Final Report at 21.<sup>1</sup> The NRC also retains far reaching safety and environmental regulatory authority over commercial nuclear facilities, with agreement states able to assume NRC authority, but only on the federal agency's terms.

States are welcome to consult with the NRC and the DOE, but the agencies can, and will, assert preemptive authority where they see fit. This has happened time and again at both commercial and DOE nuclear facilities. Indeed, disputes over cleanup at the Hanford Reservation have gone on for decades and show little sign of subsiding. This outdated regulatory scheme is the focal point of the distrust that has poisoned federal and state relationships involved in managing and disposing of high-level radioactive waste (HLW) and spent nuclear fuel, with resulting significant impacts on public health and the environment.

If EPA and the states had full legal authority and could treat radionuclides as they do other pollutants under environmental law, clear cleanup standards could be promulgated, and we could be much farther along in remediating the toxic legacy of the Cold War. Further, we could likely avoid some of the ongoing legal and regulatory disputes over operations at commercial nuclear facilities. Any regulatory change of this magnitude would have to be harmonized with appropriate NRC licensing jurisdiction over facilities and waste and harmonized with EPA's existing jurisdiction with respect to radiation standards: but such a process is certainly within the capacity of the current federal agencies and engaged stakeholders. Some states would assume regulatory jurisdiction over radioactive material, others might not. But in any event, substantially improved clarity in the regulatory structure and a meaningful state oversight role would allow, for the first time in this country, consent-based and transparent decisions to take place on the matter of developing storage sites and geologic repositories.

Ending the anachronistic AEA exemptions solves the matter of meaningful state oversight and does not carry with it substantial likelihood of congressional terms and modifications exacted from states years into a good faith negotiation on a site. Indeed, while it would be possible for a future Congress to revisit the AEA and reinsert exemptions from environmental law, it would have to do so in a manner that would remove overdue jurisdictional authority from all states (or Congress would have to single out one state for special treatment). The difficulty of prevailing over the interest of all 50 states rather than simply amending legislation that affects the interests of just one state should be apparent.

<sup>1</sup>The BRC Report omits discussion of the fierce effort New Mexico waged to obtain RCRA authority over the site.

## RESPONSES OF GEOFFREY H. FETTUS TO QUESTIONS FROM MURKOWSKI

*Question 1.* With regard to the Oversight Board, the legislation leaves it to the President to determine who should be appointed—with the advice and consent of the Senate. Some have recommended that seats be reserved for various entities. Do you believe this legislation should provide more specificity as to who should be appointed to the Board?

Answer. Yes. In our May 2013 comments on the Discussion Draft of this bill, we asserted representation on this board of directors should be balanced by political party representation, by governmental affiliation (i.e., federal, state, or tribal), and include representation by non-governmental organizations in addition to industry. We hold the same concerns for any Oversight Board and make similar suggestions. In establishing an Oversight Board for whatever nuclear waste entity is created, the legislation should have a provision explicitly prohibiting the majority on the board from comprising members with existing or historical ties to the nuclear industry. Such a requirement would recognize the existing revolving door between government service at NRC, DOE and the nuclear industry. Further, ensuring the Oversight Board is not disproportionately composed of members with existing or historical ties to the nuclear industry would improve public trust and acceptance of the government's newly legislated nuclear waste storage and disposal program.

*Question 2.* While I understand that some of you would prefer a Board of Directors structure to the new entity, assume that the single Administrator approach is retained. Is the six-year service term appropriate? Should it be longer/shorter?

Answer. Assuming a single Administrator approach is retained, we think a four year term commensurate with the appointing Administration is appropriate. Despite our concern a single administrator can undo or upset carefully crafted decisions in a short time frame (as opposed to a more balanced board), the likelihood of strong tension and an inability to carry out policy options between an administrator and President of differing parties (or, for that matter, differences with Congress) weighs strongly in favor allowing the Executive Branch to appoint its selected manager.

*Question 3.* How many storage facilities and repositories do you believe will be needed to handle this nation's nuclear waste? Should they be co-located? Should they be geographically spread across the country?

Answer. While we expect at least two repositories will ultimately need to be developed, NRDC has no precise number of repositories or storage facilities in mind for management and disposal of nuclear waste. Our nation already manages nuclear waste at more than 100 operating or retired commercial nuclear reactors and at dozens of legacy nuclear weapons sites. For political reasons and institutional reasons well documented by the BRC and any cursory review of the last 55 years, we think it unlikely a repository program focused on a single site is tenable.

With respect to repositories in particular, NRDC submits that development of multiple repositories is not an impossible Gordian knot. No one can guarantee solutions in the future but we can learn from the past and avoid at least the most obvious pitfalls, such as pre-selecting sites and then weakening regulatory standards in order for the site to be licensed. Further, providing States with meaningful regulatory oversight, as described in our written testimony and in answer to Chairman Wyden's question, can allow states in our federal system the comfort and control necessary to allow for technically adequate and publicly accepted sites to go forward without fear of political retribution. Thus, we can start to solve the problem of how many repositories might be necessary with fundamental changes in the law to address such federal, state and tribal tensions over nuclear waste—the institutional blockages in our federal system that will never disappear but can only be managed.

With respect to a number of storage sites, as we noted in written testimony, a pilot interim storage project housed at an existing commercial reactor site that addresses issues of stranded fuel would go far in dealing with a number of public safety and environmental harms, would do no damage to a carefully constructed bill that focuses on repository development.

Specifically, we urged the Committee to write legislative language for a pilot project to address the total stranded spent fuel at closed reactor sites (13 sites), currently defined in S.1240 as "priority fuel," where spent fuel would be stored in dry casks within one or more hardened buildings similar to the Ahaus facility in Germany. Potential volunteer sites already demonstrating "consent" are found at operating commercial reactors. The utility of using existing commercial operating reactor sites rather than burdening new areas with spent nuclear fuel should be apparent: existing sites require far less new infrastructure, already have the capacity for fuel management and transportation and have the local community and state de facto consent for spent fuel storage necessary for hosting nuclear facilities. And by keeping consolidated, interim-stored spent nuclear fuel under the guardianship of the

nuclear industry that produced the waste in the first instance, Congress ensures that careful progress continues with the repository program because all parties will know that it is necessary. Such a pilot project demonstrates proof of concept for safe storage, reduces the number of sites where spent nuclear fuel is stored, and, importantly, does not pollute a green-field site that could also be adopted for divisive and unwise closed fuel cycle activities.

We look forward to continuing to work with the Committee on this difficult topic.

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RESPONSES OF DAVID C. BOYD TO QUESTIONS FROM SENATOR WYDEN

*Question 1.* The BRC cites the Government's liability for breaching its contractual commitment to dispose of the utilities' nuclear waste as one of the main arguments supporting development of interim storage facilities. The Government is liable for billions of dollars in damages for failing to begin disposing of the utilities' waste in 1998, but it is under no obligation to take title to the utilities' waste and remove it from the reactor sites until the Government has a repository in which to put it. The proposed legislation solves this problem by authorizing the Government to begin storing the utilities' waste before a repository is built, but in return, asks the utilities to settle their lawsuits. The BRC urged settlement or arbitration of these suits. Why shouldn't the bill require the Attorney General and the utilities to settle the lawsuits, on a mutually agreeable basis, in return for providing interim storage and taking the waste off the utilities' hands sooner than it would without the new legislation?

Answer. The fundamental premise of this question is inaccurate. DOE has a current obligation to take possession of the waste. In 1995, DOE issued a "Final Interpretation of Nuclear Waste Acceptance Issues."<sup>1</sup> There, just as this question presumes, DOE found it did not have an unconditional statutory or contractual obligation to accept high-level waste and spent fuel beginning January 31, 1998 in the absence of a repository or interim storage facility constructed under the NWPA. However, on appeal, the D.C. Circuit disagreed, noting, inter alia:

DOE's duty under subsection (B) to dispose of the SNF is conditioned on the payment of fees by the owner and is triggered, at the latest, by the arrival of January 31, 1998. Nowhere, however, does the statute indicate that the obligation established in subsection (B) is somehow tied to the commencement of repository operations referred to in subsection (A). . . Thus, we hold that section 302(a)(5)(B) creates an obligation in DOE, reciprocal to the utilities' obligation to pay, to start disposing of the SNF no later than January 31, 1998.<sup>2</sup>

DOE's obligation to physically take possession of the waste, which is the basis of its liability, is clear. Once the government, through the new program established in new legislation, is positioned to accept waste, they can move it without proposed Section 406(b)(1). That section requires the contract holder to settle all claims for breach of contract for the disposal of nuclear waste as a condition for the Administrator to "take title to and store the nuclear waste of the contract holder at a storage facility." The section is not necessary and actually removes incentives for government action.

As a direct consequence of DOE action that complies with the contracts, there will necessarily also be specific reductions in liability associated with the waste actually taken for interim storage. Performance should remain the key component to reducing the federal government's liability. Given the history of this program, i.e., the federal government's difficulty and sometime recalcitrance with complying with the law, an ever-increasing federal liability is the only incentive for action. There is no question that, as fiscal pressure on the Judgment Fund grows, it can only ratchet up political pressure for action. History suggests little else has an impact.

Aside from the fact that Section 406(b)(1) eliminates perhaps the strongest incentive for government action, it also unfairly and inappropriately shifts liability from taxpayers generally to electric ratepayers before the DOE takes actual possession of the waste. Under the new legislation, ratepayers are already on the hook to pay for interim storage, and the associated additional transportation that will be required—costs that would not be necessary if the government fulfilled its responsibility to establish a working geological repository.

<sup>1</sup>Final Interpretation of Nuclear Waste Issues, 60 Fed.Reg. 21,793 (1995)

<sup>2</sup>See, *Indiana Michigan Power Company v. Department of Energy*, Case Nos. 95-1279 et al. (DC Circuit 1996), available online at: <http://caselaw.findlaw.com/us-dc-circuit/1278574.html>.

*Question 1, Subpart 1.* The Nuclear Waste Policy Act asks nuclear ratepayers to pay one-tenth a cent per kilowatt-hour on nuclear-generated electricity. DOE hasn't met its contractual obligation to begin disposing of the utilities waste, but neither has it raised the disposal fee in 30 years—not even for inflation. And the additional cost to the utilities of storing their waste at their reactors is being paid out of the Treasury's Judgment Fund, not by raising the fee on ratepayers. How would ratepayers be harmed by requiring the Attorney General to settle the pending lawsuits by seeking a reduction in future damage payments in return for taking the waste off the utilities' hands sooner, thereby reducing the damages the utilities would otherwise be owed?

Answer. NARUC has challenged the current NWF fees as unjustified. As a matter of both fact and law, prior fee assessments conducted by federal government indicated that the fund was "sufficient" to cover the costs of disposal without increases—even to reflect inflation. The effort to equate the non-performance by the government to the fact that the fee has not increased is illogical. As noted in our first response, it is difficult to understand how a settlement affecting waste that remains onsite will do anything to incent DOE to move more quickly to "take the waste off the utilities' hands." The incentive for that action is outstanding with no additional legislation. Ratepayers have upheld their side of the contract. They have paid the fees for years, and, so far, have not received the service for which they have paid. Even if one discounts NARUC's contention that such settlements would make it less, not more, likely that the Government will act in a timely manner, there is still no way to gauge the actual impact of settlements. The bill does not detail how they will be structured, how much liability is shifted to ratepayers, or even provide a reasonable explanation for how or why the settlements will actually "incent" government action. Future expenditures due to contract breaches by the federal government not covered under the settlements will fall on ratepayers, because the bill requires that settlements release the federal government of all existing and future liability before the waste is actually moved. Should additional on-site storage be necessary due to future delays, then those costs will also fall exclusively upon the ratepayer. And then there is always the question of this or a future Administration's compliance with the law. Given past practice, it is certainly possible that settlements could be reached and an Administration will decide that compliance with the law—no matter how clear—is "not practical." The fundamental question remains: Why is it necessary for the federal government to receive some sort of dispensation or additional consideration/compensation for doing what they agreed to do decades ago?

*Question 2.* DOE stated in its response to the BRC report its goal to have a repository constructed and operating by 2048. 35 years is a long time to wait. Is this goal reasonable, and if not, what do you believe is a more logical timeframe?

Answer. Based on the history of the repository program, we are not confident a repository will be operating by 2048. In the April 18, 1983 Federal Register, DOE made this statement, "The 1998 date (to begin permanent disposal of spent nuclear fuel) is called for in the Act, and we believe it to be a realistic date. Our performance will be judged by meeting that date." Performance to-date is non-existent. The bill's target date of December 2048 (Section 504(b)(C)) for such a repository to be operational is not acceptable. The date is taken from the DOE Strategy's proposed repository date. That document provides zero support or rationale for this "new" target date. The only thing that is clear is that no one involved with this issue today is likely to be around to accept responsibility for non-compliance. Obviously, a target date so far in the future effectively eliminates any sense of urgency necessary to compel timely government action. Moreover, the deadline is so distant that potential hosts for consolidated storage facilities would be justifiably nervous about becoming de facto permanent sites. We believe there is no way to come up with a timeframe, logical or not, unless this Administration and future Administrations commit to upholding the law and this Congress as well as future Congresses appropriate the necessary funds that have been and continue to be collected for this purpose.

#### RESPONSES OF DAVID C. BOYD TO QUESTIONS FROM SENATOR MURKOWSKI

*Question 1.* With regard to the Oversight Board, the legislation leaves it to the President to determine who should be appointed—with the advice and consent of the Senate. Some have recommended that seats be reserved for various entities. Do you believe this legislation should provide more specificity as to who should be appointed to the Board?

Answer. Electricity ratepayers are funding the bulk of the government's permanent disposal operations. Given that State Utility Commissioners are intimately concerned with disposal and related cost issues, a minimum of a third of any board

should be, at the time of their nomination, serving State Commissioners nominated by NARUC only from States with working nuclear power plants or commercial/defense waste slated for permanent disposal by the federal government. If they leave public service for a position with another stakeholder group on waste disposal issues, NARUC should be allowed to nominate a replacement to finish out that term.

*Question 2.* While I understand that some of you would prefer a Board of Directors structure to the new entity, assume that the single Administrator approach is retained. Is the six-year service term appropriate? Should it be longer/shorter?

Answer. NARUC, as an organization, has not taken a specific position on the issue of length of service. Logic suggests a Federally-chartered corporation structure with an executive officer and Board, as recommended by the BRC, will provide a more successful vehicle for disposal activities. However, it does appear that a six year term is too short for an Administrator. A longer fixed term for the Administrator—one that spans multiple administrations perhaps 10-14 years or more—would enhance the stability and political insulation of the position.

*Question 3.* How many storage facilities and repositories do you believe will be needed to handle this nation's nuclear waste? Should they be co-located? Should they be geographically spread across the country?

Answer. NARUC, as an organization, has not taken a specific position on either issue. Many argue that even if the license for Yucca Mountain is approved and additional waste storage is authorized there, a new geological repository may be required. Logic suggests that, if collocation is a scientifically safe option, it can only reduce the complexity and cost of both transport and security.

*Question 4.* Do you support the language we have included in the legislation under Section 401 to cut off fee collection after December 31, 2025 unless the Administrator is operating a nuclear waste facility by that date?

Answer. While not perfect, the requirement to require cut-off of assessments in 2025 is certainly an improvement over the current circumstances. The provision should, however, be amended to specify a working repository instead of just "nuclear waste facilities." That would provide strong incentives to expedite the repository siting process.

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RESPONSES OF MARVIN S. FERTEL TO QUESTIONS FROM SENATOR WYDEN

*Question 1.* Several states have laws prohibiting construction of new nuclear power plants until a solution has been found for nuclear waste. To what extent do you see the uncertainty of US policy on spent fuel storage and disposal to be a barrier to the future use of nuclear power?

Answer. A few states do have moratoria on construction until a disposal pathway is available. In some instances, these bans are being reconsidered and may be lifted. While these bans do create a barrier to the construction of new nuclear plants in those specific states, the primary barriers are the economic fundamentals of electricity generation, low economic growth and no growth in electricity demand, which has led to excess generating capacity in most parts of the country, and the low cost of natural gas. Five new reactors are currently under construction in the United States and, in these instances, used fuel management was not a significant consideration in the final decision to authorize the projects. The current lack of a federal program, however, did contribute to the Court's decision to vacate NRC's temporary storage rule (waste confidence rule). This has resulted in a temporary halt to licensing of new reactors and completion of licensing renewals. So it is imperative that a sustainable program be established as soon as possible.

*Question 2.* The BRC cites the Government's liability for breaching its contractual commitment to dispose of the utilities' nuclear waste as one of the main arguments supporting development of interim storage facilities. The Government is liable for billions of dollars in damages for failing to begin disposing of the utilities' waste in 1998, but it is under no obligation to take title to the utilities' waste and remove it from the reactor sites until the Government has a repository in which to put it. The proposed legislation solves this problem by authorizing the Government to begin storing the utilities' waste before a repository is built, but in return, asks the utilities to settle their lawsuits. Your organization has expressed concern about this provision. The law generally favors settlement of litigation. The BRC urged settlement or arbitration of these suits. Why shouldn't the bill require the Attorney General and the utilities to settle the lawsuits, on a mutually agreeable basis, in return for providing interim storage and taking the waste off the utilities' hands sooner than it would without the new legislation?

Answer. The Government has already paid out billions of dollars in damages for its breach of its contractual obligation to begin taking the utilities' spent nuclear fuel by January 31, 1998. The longer it takes for the Government to begin to meet its obligations, the larger the damages. Even if the government were to begin to perform by 2020, the Secretary of Energy has estimated that damages would exceed \$20 billion.

Since the Government's 1998 obligation, first breached 15 years ago, can be met either by DOE taking spent fuel initially for interim storage or directly to a repository, the proposed legislation does not create any new rights for the utilities. Until the DOE can accept the utilities' spent fuel either at a repository or an interim storage facility, it will continue to be in breach and the utilities will continue to be able to recover as damages their added costs imposed by that breach.

We certainly agree that settlements should be favored, and many utilities have voluntarily entered into settlements of their breach of contract claims. In any case, while we support the concept of encouraging settlements, the provisions of the bill would go far beyond encouraging and would for all practical purposes give the Government the complete ability to force on the utilities any terms it wanted as the price for the Government meeting the contractual obligations that it is already subject to. Such a settlement would most likely not be "mutually agreeable," since the utilities would have to agree to whatever terms the Government insisted upon in order to receive the performance that it has been paying for. Should Congress impose such a one-sided deal on the utilities, it would be in essence breaching the Standard Contract, since the Contract as described below does not limit the requirement for the Government's performance to the existence of a repository. The Supreme Court in the *Winstar* cases has held that Congressional legislation in such circumstances is itself a contractual breach, entitling the private party to recover damages from the Government. By making the DOE's obligation to provide interim storage subject to the utilities agreeing to a settlement, the legislation imposes a one-sided sanction, since there would be no incentive on the Government's part for a true negotiated settlement. That's why a more effective and fairer approach would be to direct the Department of Justice to settle the breach of contract lawsuits on reasonable terms with willing contract holders without the legislation imposing conditions on the settlements.

The assumption underlying Question 2 seems to be that the Government's obligation to perform is tied to the existence of a repository. This assumption was explicitly rejected by the US Court of Appeals for the DC Circuit in *Indiana Michigan Power Co. v. DOE*, 88 F.3d 1272 (DC Cir. 1996). The Court was clear that DOE's statutory obligation to perform and its liability for breaching that obligation was not tied to the existence of a repository. Nor is DOE's contractual obligation to start taking the utilities' spent fuel tied to the existence of a repository. The Standard Contract, 10 CFR Part 961, requires DOE to begin its services "after commencement of facility operations, not later than January 31, 1998." Article II. And "facility" is defined in Article I.10 to include both "a facility . . . for the purpose of disposing of spent nuclear fuel . . . , or such other facility(ies) to which spent nuclear fuel . . . may be shipped by DOE prior to its transportation to a disposal facility." In other words, neither DOE's obligation to accept nor its liability for nonperformance is tied to the existence of a repository.

In terms of DOE's obligation to take title to the utilities' spent fuel, again the Standard Contract does not tie this obligation to the existence of a repository. Article VII (Title) says that "Title to all SNF . . . accepted by DOE for disposal shall pass to DOE at the Purchaser's site as provided for in Article VI hereof." Article VI in turn sets forth general requirements as to the specifications for acceptable spent fuel, procedures for acceptance, priorities, and consequences of improperly described spent fuel. Article VI says nothing about where the spent fuel is to be shipped. And the wording in Article VII the spent fuel has to be "accepted by DOE for disposal" does not mean that once the spent fuel is accepted, it must immediately be shipped to a repository, rather than initially to an interim storage facility. Since DOE will ultimately dispose of the spent fuel, whether or not the spent fuel is first shipped to a repository or an interim storage facility, in either case it is being "accepted . . . for disposal."

To the extent that the Question is based on an interpretation of section 123 of the Nuclear Waste Policy Act, that interpretation is not correct. Section 123 states that "Delivery, and acceptance by the Secretary, of any . . . spent nuclear fuel for a repository constructed under this subtitle shall constitute a transfer to the Secretary of title to such . . . spent fuel." As with the wording of Article VII of the Standard Contract, when DOE takes spent fuel from a utility, it is taking that spent fuel for ultimate disposal at a repository, even if it first goes to DOE interim storage. So here too, the Government's obligation is not tied to the existence of a repository.

tory. Nor does Section 123 state that it is the only way that title can transfer to the Government.

*Question 3.* S.1240 establishes a category for priority waste that literally gets priority when it comes to access to Federal storage. This includes spent fuel at decommissioned power plants, for example. Are there other categories of spent fuel shipments that should get priority that have not been included? For example, should nuclear power plants that have had particular types of safety problems and have more often received a worse-than-“green” rating from the NRC get priority?

*Answer.* The industry is supportive of initially giving priority to used fuel from shutdown plants without an operating reactor. Moving this used fuel would permit the new management entity to ramp-up operations while achieving immediate results and a reduction in liabilities for the taxpayers and it would permit sites which have only used fuel storage remaining to be fully decommissioned and the land used for other purposes. The order in which used fuel will be picked up from commercial reactors is governed by the principle of “oldest fuel first” as outlined in the contracts between the companies and the Department of Energy. The Department of Energy collects used fuel discharge information and, based on this information, creates a queue for prioritizing shipments. This approach for shipping used fuel from commercial nuclear reactors provides a good legal framework but does not provide a practical and efficient framework for moving used fuel. At the appropriate time, the structure of the queue must be addressed by the commercial entities. The goal at that time should be to establish a priority list for used fuel that minimizes operational burdens on operating reactors while optimizing overall system efficiency and cost.

The industry currently safely and securely manages used fuel at reactor sites and decommissioned sites. Operational issues that are identified by either the industry or the Nuclear Regulatory Commission are appropriately resolved through the existing regulatory framework. While the industry is committed to continual safety improvement, priority should be given to those areas that will achieve the largest safety benefit. For example, the industry’s resources should be devoted to those safety improvements associated with reactor operations and spent fuel pool monitoring (a lesson learned from the Fukushima accident—see question 5 for additional information) and not arbitrarily reducing the inventory of the pools as a result of a worse-than-“green” rating from NRC, which in and of itself may not be very safety significant. The legislation as currently drafted provides for “emergency” shipments. This category, in addition to the defined “priority” shipments, provides the new management entity and the industry with sufficient flexibility to manage used fuel without legislatively establishing additional criteria for prioritizing used fuel shipments.

*Question 4.* DOE stated in its response to the BRC report its goal to have a repository constructed and operating by 2048. 35 years is a long time to wait. Is this goal reasonable, and if not, what do you believe is a more logical timeframe?

*Answer.* The industry reacted with frustration to the target date of 2048 for the opening of a new repository. The industry still supports the completion of the Yucca Mountain licensing process and believes that if successfully licensed and appropriately managed and funded the Yucca Mountain repository could be opened well before 2048. However, if a second repository program is initiated, the industry believes that the target date for beginning operations should be no more than 25 years after program commencement. Being able to meet or exceed this time period, though, will require a focused effort from beginning to end from a new management entity solely dedicated to the project with unfettered access to the Nuclear Waste Fee payments and the corpus of the Nuclear Waste Fund. Key aspects of this effort must include generic repository (NRC and/or EPA) regulations prior to completion of siting, and a requirement for the NRC to complete the licensing review in three years similar to the review period for the Yucca Mountain license application.

*Question 5.* This bill sets up a program for the Federal Government to build new storage facilities for spent fuel. I think it makes sense to move spent fuel if it’s going to be cheaper and safer, for example, at decommissioned nuclear power plants where there’s not going to be ongoing operations. However, at some nuclear power plants, there are going to be continued operations, and maintenance, and security, and environmental monitoring for decades to come. It might NOT be cheaper or safer to move this fuel to a central storage site, especially since it will need to be moved again to the repository. Should the bill include a program to help pay for continued on-site storage at nuclear power plant sites if that would be safer and less expensive?

What else could Congress do to encourage movement of spent fuel out of reactor pools, such as allowing the Attorney General to enter into negotiations with the utilities to seek their voluntary agreement to transfer their waste to dry cask storage as part of a settlement agreement in return for providing interim storage off-site?

Answer. The new management entity should work closely with the industry to maximize the efficiency of the used fuel program while minimizing the total program cost. As the pilot consolidated storage facility and repository are being developed, the new management entity should assess the situation to determine how much used fuel should be shipped to a consolidated storage facility. The new management entity should also determine the long-term role of a consolidated storage facility. For example, the new management entity could choose to utilize the consolidated storage facility as the front-end processing and repackaging (if necessary) facility for the repository and such a facility could be co-located with the repository if practical. Opening a consolidated storage facility will enable the new management entity to begin performing under the standard contract and to begin reducing taxpayer liability. However, the lawsuits for partial breach of contract will continue well beyond the date that the new management entity begins accepting used fuel.

The industry has, and always will, safely and securely manage used fuel at our sites. We do not believe that reducing the inventory in the spent fuel pools will increase safety margins sufficiently compared to other safety enhancements currently underway. The industry has extensively reviewed the Fukushima tragedy and is making the appropriate changes to improve monitoring and instrumentation of spent fuel pool water level as a result of the lessons learned from the accident. It should be noted that the primary release of radiation during the accident was from the reactors and not the spent fuel pools. In fact, the water level in the spent fuel pools never fell below the top of the used fuel assemblies and the spent fuel pool structures withstood the hydrogen explosions while maintaining structural integrity. A review of the accident confirms that industry resources are appropriately being devoted to safety improvements associated with reactor operations and spent fuel pool monitoring and not reducing the inventory of the pools. The industry's FLEX program, which provides multiple redundant resources to maintain water in the reactor and in the spent fuel pool under unforeseen circumstances, is a prime example of prioritized safety enhancements. Ultimately, the quickest way to reduce the inventory in the pools is to establish a sustainable program that can move used fuel off the sites quicker than it is being generated. The industry is committed to the establishment of such a program and will work with the new management entity to maximize efficiency and minimize program cost.

#### RESPONSES OF MARVIN S. FERTEL TO QUESTIONS FROM SENATOR MURKOWSKI

*Question 1.* With regard to the Oversight Board, the legislation leaves it to the President to determine who should be appointed—with the advice and consent of the Senate. Some have recommended that seats be reserved for various entities. Do you believe this legislation should provide more specificity as to who should be appointed to the Board?

Answer. The industry has advocated that the new management entity should have a corporate structure with a Board of Directors and a CEO that is chosen and hired by the Board. At a basic level, the elements of the management structure desired by the industry and that proposed in the legislation are similar: each approach has a board that provides oversight for the organization and each has a leader that is responsible for the day-to-day operations of the entity and is the person to be contacted when significant problems occur. There are, however, significant differences in how the industry believes these management elements should be implemented compared to the legislation. In the industry model, the Board of Directors would provide policy direction, hold the CEO accountable for performance (including dismissal if necessary), and ultimately approve the management budget. The CEO should be an individual that has experience managing large organizations, is well versed in the culture of commercial nuclear facilities and has requisite attention to nuclear safety and security that is expected from all employees of a nuclear industrial company. In the case of the legislation, both the Administrator and Deputy Administrator are political appointments and cannot be reprimanded or dismissed by the oversight board. While it is essential that a corporate CEO has relevant and successful management experience, the political appointment process does not ensure that the individuals chosen to lead government agencies have such experience. In a corporate environment, significant cost overruns and project delays on billion dollar projects could result in the dismissal of the CEO. In government agencies senior leadership is not held responsible for cost overruns and project delays as evidenced by numerous project failures and delays within the Department of Energy and other agencies.

Corporate boards are typically focused on the entity's balance sheet and its financial strength. For that reason, they pay most attention to issues associated with financing (where is the money coming from) and liabilities (how much might the com-

pany owe). In that context, it would authorize a major capital project including its cost and financing plan, and then monitor its progress to assure it is staying on track. The scope of the Board's responsibilities should be clearly defined in legislation. In our testimony, NEI did advocate for particular seats on the Board to be reserved for certain stakeholders. The legislation should ensure that the Board includes representation from stakeholders both inside and outside of government. The Board should include members from entities that contribute or have contributed to the Nuclear Waste Fund. Other members of the Board should be appointed from state public utility commissions or representatives thereof. NEI recommends that an individual must be a citizen of the U.S. and have management, financial, technical or other appropriate expertise to be eligible for appointment to the Board.

*Question 2.* While I understand that some of you would prefer a Board of Directors structure to the new entity, assume that the single Administrator approach is retained. Is the six-year service term appropriate? Should it be longer/shorter?

Answer. The industry does not believe a government agency structure with an Administrator will ever deliver a sustainable and successful program. The new management entity must come as close as possible to a corporate structure, with the project management capability and discipline associated with the corporate structure. Compare the experience with the on-going Vogtle and V. C. Summer nuclear plant expansions in Georgia and South Carolina and any recent Department of Energy high dollar value construction project. The DOE projects are regularly years behind schedule and over budget whereas the Vogtle and V. C. Summer projects, in contrast, are close to on-time and on-budget. The difference between the performance of government projects and commercial projects can be attributed largely to the management oversight of the contractors and not the contractors themselves. For this reason, the industry strongly recommends a corporate structure (as described above in the response to question 1) as opposed to a government agency, even one run by a single administrator. In response to the question, however, NEI would recommend that the Administrator's term be on the order of ten years, similar to the Director of the FBI, in order to ensure political stability and continuity, especially during a change of Administration. The Administrator should also be permitted to serve multiple concurrent terms.

*Question 3.* How many storage facilities and repositories do you believe will be needed to handle this nation's nuclear waste? Should they be co-located? Should they be geographically spread across the country?

Answer. As an estimate, the U.S. commercial nuclear industry has about 70,000 metric tons of spent fuel stored at reactor sites around the country presently (not including defense waste). The commercial industry produces another 2,000 metric tons of used fuel each year. The number of storage facilities and repositories needed would depend ultimately on the outcomes of the recommended consent-based siting process and the resolution of the Yucca Mountain licensing process. An effective consent-based siting process will permit the state, affected local community and/or tribe to determine what size facility they are willing to host. So the number of facilities greatly depends on what sites come forward during the consent-based process and how much nuclear waste each site can technically and politically accommodate.

The number of nuclear waste management facilities also depends on the schedule for when such facilities become operational. If the Yucca Mountain repository was operational and the statutory limit of 70,000 metric tons was removed, the U.S. may only need that one disposal site as it is generally agreed, based on technical studies performed by the Department of Energy and the Electric Power Research Institute, that Yucca Mountain can accommodate significantly more used fuel than the statutory limit. As the pilot consolidated storage facility and repository are being developed, the new management entity should assess the situation to determine how much used fuel should be shipped to a consolidated storage facility. The new management entity should also determine the long-term role of a consolidated storage facility vis-&-vis the progress made on developing a repository.

Co-locating a repository and storage facility would have advantages. However, NEI believes that the timelines for determining if a site is suitable to host a repository will be considerably longer than for a storage facility. As a result, NEI questions whether attempting to comply with this preference may create unforeseen challenges to siting a facility. If multiple sites for storage and repository are needed, the industry would support geographically diverse locations to minimize the transportation of nuclear waste over long distances. Multiple locations also provide redundancy that would greatly enhance the reliability of the whole nuclear waste management system.

*Question 4.* Do you support the language we have included in the legislation under Section 401 to cut off fee collection after December 31, 2025 unless the Administrator is operating a nuclear waste facility by that date?

Answer. The industry supports the inclusion of this subsection that would suspend waste fee payments if a disposal or storage facility is not open by the end of 2025. We suggest that the language be modified to address the conditions under which the waste fee payments would be restarted. The industry continues to support the completion of the Yucca Mountain licensing process and, as a result of the Administration's actions, the industry has filed suit against DOE challenging the continued collection of the Nuclear Waste Fee in the absence of a federal program. Oral arguments in the case are scheduled for September.

*Question 5.* Your testimony refers to an EPRI study that suggests a storage facility could be constructed for \$525 million. Given that this legislation makes the fuel at decommissioned and stranded sites a priority, does that amount include what will be necessary to rebuild the infrastructure at those sites to get the casks to railhead? How much do you estimate it would cost to rebuild that infrastructure?

Answer. The EPRI study referenced in NEI's testimony does include some costs for transportation infrastructure, although not for any specific site where fuel is to be removed. As the EPRI report states "the costs associated with development of the transportation infrastructure for a generic interim storage facility will be highly dependent upon the site chosen for the facility. Costs will depend upon the site's proximity to rail transportation corridors and the resulting length of a rail spur or heavy haul route to the site. The costs associated with the design and construction of site access roads will depend upon the existing transportation infrastructure, site topography, etc." The total cost that EPRI included was \$176.5 million, which included access road improvements, rail spur and the various rail car components needed for transport (locomotive, escort, buffer).

The Department of Energy has studied the existing infrastructure at the decommissioned plant sites and issued a report about developments that are needed. The report, "Preliminary Evaluation of Removing Used Nuclear Fuel from Nine Shutdown Sites," issued on April 30, 2013, includes characterizations of each site. It does not, however, include any cost estimations for the infrastructure developments needed at each site. But this type of analysis (including costs) will be needed to move the casks off the site regardless if the fuel is bound for a repository or consolidated storage facility.

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RESPONSES OF SALLY JAMESON TO QUESTIONS FROM SENATOR WYDEN

*Question 1.* Several states have laws prohibiting construction of new nuclear power plants until a solution has been found for nuclear waste. To what extent do you see the uncertainty of US policy on spent fuel storage and disposal to be a barrier to the future use of nuclear power?

Answer. Speaking for myself as a Maryland state legislator, even though a few states have rescinded their prohibition in the last several years, not having a solution for the removal of spent nuclear fuel (SNF) certainly gives those who oppose nuclear power plants an argument that creates a certain level of fear in the public. Even though NCSL has no formal policy admonishing a state for prohibiting nuclear power, it is clear to me that nuclear power is the only base load power source that is virtually carbon free. NCSL also has policies related to federal clean air climate change actions.

Additionally, there is no question that not having a solution for SNF has clearly propagated questions about fuel pool safety, over packing of pools two to ten times their design capacity and storing spent fuel in highly populated areas or adjacent to populations. Establishing interim storage sites and repositories would provide evidence to the states that we as a nation are serious about climate change, safety and nuclear power, which I see as a solution to carbon free, base load electricity.

*Question 2.* One of the central recommendations of the Blue Ribbon Commission is the need for a consent-based siting process where the Federal Government works with States and Indian Tribes to pick a site, and not in opposition to them. If there's a lesson that can be learned from Yucca Mountain, it's that the Federal Government needs to do a better job of working with States in picking nuclear waste sites. However, I don't think you can have a process that puts what's politically expedient ahead of safety. How can communities and the States that surround them be assured that a consent-based siting process is picking a safe site, not just the most politically popular site?

Answer. Again, in speaking for myself as a Maryland state legislator, the siting process for the Monitored Retrievable System (MRS) program and for the Global Nuclear Energy Partnership (GNEP), now known as the International Framework for Nuclear Energy Cooperation (IFNEC), includes basic geographic and geologic criteria that were established for any applicant to meet the sniff test for acceptability.

Such criteria as distance from populations, known water table depths, historical geologic stability, dryness of area, air traffic, distance from waterways, rivers, lakes, etc. are considered. Fundamental known geology of an area and the geography of a site is the beginning criteria for finding safe sites and eliminates those that will present a hazard. If the facility is a repository there must be some known geo-technical information that would make the medium for a facility location preliminarily acceptable. Once the preliminary criteria are met then there must be political acceptance by the affected city councils and county commissions by resolution of support who are typically close to their community residents and are able to represent the consent of their area constituents. The next big leap is to have a letter from the governor of the state, with approval from the legislature, asking for money from the Department of Energy (DOE) to begin the education process statewide, as well as with the legislature, regarding the pros and cons of a facility and to develop the precepts of a consent agreement. This process requires a request by the governor and an expression of interest on behalf of the state, but does not require a commitment. Then, assuming the education and consent process goes well and the public has had significant opportunity to have input into a "consent agreement" and there is an understanding of acceptance of the facility, the legislature and governor would collaborate on a final agreement to be offered to DOE. Upon receipt of that state document, DOE would then embark on geo-technical confirmation of the site at DOE's expense. That evaluation should be at least equivalent to the Safety Analysis Report and other geo-technical requirements of an NRC license. The NRC is a very tough regulator, and safety is their sole objective when it comes to nuclear facilities. Assuming this all passes NRC standards, the path to an NRC license application should be paved. At this point, with no geo-technical issues standing in the way of licensing, the state and DOE would complete final negotiations on the contract, which must be irrevocable by either party and completely enforceable in a court of competent jurisdiction. The project would then begin post haste. The state will obviously have health, safety, environmental, and financial assurance of closure or decommissioning, a benefit package for the state and local governments and probably other conditions such as an NRC license, co-inspections by the state, fines for non-performance, public involvement, reporting, and other terms and conditions.

This process is very public and includes local, county, state elected officials every step of the way and into the future. It concludes with a contract that is enforceable and creates transparency.

As a final recommendation, I would suggest that DOE not only provide money in the first tranche for the "consent process," but also include enough funds for the state to hire an expert team of lawyers and scientists solely responsible to the state to make sure the state is well informed as to the NRC process, DOE standards and federal contracting to enhance confidence. Most states lack this expertise within any of their departments.

*Question 3.* Historically, citizens, local governments, and tribes have expressed interest in hosting nuclear waste facilities, but state-level opposition prevented any deals from being signed. Our bill tries to address this problem by clearly spelling out a role for the state from the beginning. Are there other measures that we should include to address potential differences between local communities and broader, state-wide interests?

Answer. As I described in my written testimony, there are a number of legislative options for ensuring the consultation process can integrate all aspects of state government and assure state legislative input. As state legislators represent local communities, ensuring state legislator participation in the consent process would build a system for addressing any potential differences between local communities and state-wide interests.

Specifically, one option to consider would be to add "presiding officer of each legislative chamber" to all references to the "Governor or duly authorized official of the state" when mentioned with regards to site selection, study and siting for both the repository and storage facility processes. This would make it consistent with the Nuclear Waste Policy Act of 1982 section 117, which clearly states that the Department of Energy "shall consult and cooperate with the Governor and legislature of such State." NCSL strongly urges this committee, as it moves forward to develop a program for the long-term treatment and disposal of high-level radioactive waste, to ensure adherence to this requirement.

#### RESPONSES OF SALLY JAMESON TO QUESTIONS FROM SENATOR MURKOWSKI

*Question 1.* With regard to the Oversight Board, the legislation leaves it to the President to determine who should be appointed—with the advice and consent of the Senate. Some have recommended that seats be reserved for various entities. Do you

believe this legislation should provide more specificity as to who should be appointed to the Board?

Answer. Given the importance placed on state, local, and tribal consultation in the draft, NCSL would recommend adding such representation to the Oversight Board and other advisory committees, as discussed in Section 205. In order to not overburden the board structures, the appointments could be made through the national organizations representing state, local and tribal elected officials such as NCSL.

*Question 2.* While I understand that some of you would prefer a Board of Directors structure to the new entity, assume that the single Administrator approach is retained. Is the six-year service term appropriate? Should it be longer/shorter?

Answer. NCSL has not yet taken a position on this issue.

*Question 3.* How many storage facilities and repositories do you believe will be needed to handle this nation's nuclear waste? Should they be co-located? Should they be geographically spread across the country?

Answer. NCSL has not yet taken a position on this specific issue regarding the geographic placement and co-locating of sites. However, NCSL does support one of the main recommendations of the Blue Ribbon Commission regarding the need for a consent-based siting process where the federal government works with states and Indian Tribes to pick a site.

*Question 4.* When it comes to a state, local community, or tribal government interacting with the new entity, is it preferable to interact with a single administrator type structure, or a board of directors with a CEO?

Answer. NCSL has not yet taken a position on this issue.

UNION OF CONCERNED SCIENTISTS,  
*Chattanooga, TN, August 8, 2013.*

Hon. RON WYDEN,  
*Chairman, Committee on Energy and Natural Resources, U.S. Senate, Washington, DC.*

Hon. LISA MURKOWSKI,  
*Ranking Member, Committee on Energy and Natural Resources, U.S. Senate, Washington, DC.*

DEAR MR. CHAIRMAN AND RANKING MEMBER MURKOWSKI: On behalf of the Union of Concerned Scientists, I appreciate your Committee conducting the July 30 hearing on the draft S.1240, the Nuclear Waste Administration Act of 2013, and for inviting me to share our views on the matter during the hearing. Onsite spent fuel storage is one of UCS's primary nuclear safety concerns and we view this draft bill as the best opportunity in many years to make substantive progress in dealing with this issue. We are very mindful of and appreciative for the key roles you have played as co-authors of the bill and leaders of the Committee in creating this opportunity. We pledge our support in getting legislation enacted that provides significant, tangible improvements from the current situation.

Enclosed are my responses to the Questions for the Record from the July 30 hearing. If I can provide additional or clarifying information, please let me know.

Sincerely,

DAVID LOCHBAUM,  
*Director, Nuclear Safety Project.*

[Enclosure.]

#### RESPONSES TO QUESTIONS FROM SENATOR WYDEN

*Question 1.* Our bill establishes a category for priority waste that literally gets priority when it comes to access to Federal storage. This includes spent fuel at decommissioned power plants, for example. Are there other categories of spent fuel shipments that should get priority that have not been included? For example, should nuclear power plants that have had particular types of safety problems and have more often received a worse-than-"green" rating from the NRC get priority?

Answer. During the July 30 hearing, Chairman Wyden spoke of spent fuel storage measures that can reduce costs while improving safety. Those reasonable principles may identify spent fuel shipments having secondary priority. For example, dry storage methods are long lasting but not immortal. The U.S. Nuclear Regulatory Commission (NRC) issued Information Notice 2012-20 (available online at <http://pbadupws.nrc.gov/docs/ML1231/ML12319A440.pdf>) last fall about potential chloride-induced stress corrosion cracking of dry cask storage system canisters. Last year the NRC also issued Information Notice 2012-13 (available online at <http://pbadupws.nrc.gov/docs/ML1216/ML121660156.pdf>) about aging degradation of safety

materials in spent fuel pools. Owners of operating reactors could pay for the measures necessary to protect safety margins from such degradation mechanisms. There is also the potential for an existing onsite dry storage facility to become filled, requiring its owner to pay for supplemental onsite storage capacity (e.g., construct additional horizontal concrete vaults or pour larger concrete pads for vertical casks). In such cases, shipment from operating reactor sites to a Federal storage site might reduce overall system costs while also increasing safety levels or preserving safety margins. The bill should empower the entity tasked with managing the Federal storage program to authorize spent fuel shipments from operating reactor sites as a secondary priority based on safety management and cost savings grounds.

*Question 2.* This bill sets up a program for the Federal Government to build new storage facilities for spent fuel. I think it makes sense to move spent fuel if it's going to be cheaper and safer, for example, at decommissioned nuclear power plants where there's not going to be ongoing operations. However, at some nuclear power plants, there are going to be continued operations, and maintenance, and security, and environmental monitoring for decades to come. It might NOT be cheaper or safer to move this fuel to a central storage site, especially since it will need to be moved again to the repository. Should the bill include a program to help pay for continued on-site storage at nuclear power plant sites if that would be safer and less expensive?

*Answer.* Yes, the bill should provide funding for continued onsite storage at operating reactor sites when it reduces risk and saves money. The bill should not fund higher risk and higher cost onsite storage methods. For example, operating reactors with spent fuel pools nearly filled to capacity may be required to shuffle the fuel assemblies within the pools to maintain the desired old fuel/new fuel configuration or be required to implement additional maintenance/monitoring measures to mitigate the neutron absorber degradation problem the NRC described last year in Information Notice 2012-13 (available online at <http://pbadupws.nrc.gov/docs/ML1216/ML121660156.pdf>). Because the cheaper and lower risk alternative would be to off-load fuel assemblies from overcrowded spent fuel pools into dry storage onsite, the bill should not finance this folly. But the bill would improve safety and lower costs by providing financial incentives for owners to accelerate the transfer from spent fuel pools to dry storage. The bill could do so by paying for the dry storage canisters and the costs of loading them.

*Question 3.* You have recommended accelerating the transfer of spent fuel from the spent fuel pools to dry-cask storage. What else could Congress do to encourage movement of spent fuel out of reactor pools, such as allowing the Attorney General to enter into negotiations with the utilities to seek their voluntary agreement to transfer their waste to dry cask storage as part of a settlement agreement in return for providing interim storage off-site?

*Answer.* In the past, some owners have explored using money from their decommissioning funds to pay for onsite dry storage but have not been allowed to do so. Regulation 10 CFR 50.75 (available online at <http://www.nrc.gov/reading-rm/doc-collections/cfr/part050/part050-0075.html>) requires owners to establish decommissioning funds. Regulation 10 CFR 50.82 (available online at <http://www.nrc.gov/reading-rm/doc-collections/cfr/part050/part050-0082.html>) governs when and how the decommissioning funds can be used. Once an owner has notified the NRC per 10 CFR 50.82 that a reactor has permanently shut down, decommissioning funds can be used to pay for onsite dry storage. But decommissioning funds cannot readily be used to pay for onsite dry storage for an operating reactor. Onsite dry storage can be considered a pre-decommissioning or early decommissioning step consistent with the overall goals of 10 CFR 50.75 and 10 CFR 50.82. Thus, the bill might clearly authorize owners of operating reactors to use decommissioning funds to pay for onsite dry storage.

#### RESPONSES TO QUESTIONS FROM SENATOR MURKOWSKI

*Question 1.* With regard to the Oversight Board, the legislation leaves it to the President to determine who should be appointed—with the advice and consent of the Senate. Some have recommended that seats be reserved for various entities. Do you believe this legislation should provide more specificity as to who should be appointed to the Board?

*Answer.* No, the legislation handles the Oversight Board similar to how appointments to the Nuclear Regulatory Commission are handled. Both feature five-member panels of qualified individuals appointed by the President and confirmed by the Senate with a provision that no more than three members be from the same political party. The existing provisions of the legislation provide the bi-partisan panel

of diverse viewpoints and interests to fulfill the role intended for the Oversight Board.

*Question 2.* While I understand that some of you would prefer a Board of Directors structure to the new entity, assume that the single Administrator approach is retained. Is the six-year service term appropriate? Should it be longer/shorter?

Answer. The six-year term, with the option for additional term(s) as provided in the legislation, seems appropriate. It is long enough to provide continuity of leadership yet short enough to avoid imposing the “burnout” burden on any individual.

*Question 3.* How many storage facilities and repositories do you believe will be needed to handle this nation’s nuclear waste? Should they be co-located? Should they be geographically spread across the country?

Answer. Science and the consent-based selection process provided for in the legislation should answer these questions rather than the legislation itself. As Senator Alexander suggested during the July 30 committee hearing, a site might require conditions on its acceptance of a storage facility or repository. Those conditions might cap the amount of material received at the site or require that it not be used for both interim storage and ultimate disposal of nuclear waste. The Nuclear Waste Administration would also be a party in the site selection process and would presumably not authorize selection of a site that would result in the need to find too many other sites. If the legislation were to specify x locations with some here and others there, it could impede the ability of the Nuclear Waste Administration and the consent-based process from finding the best answers to these key questions.

#### RESPONSE TO QUESTION FROM SENATOR BALDWIN

*Question 1.* The departure from the 1982 Nuclear Waste Policy Act plan forced nuclear plant operators to pay for expanded onsite spent fuel storage capacity. In order to meet this increased need, nuclear plants simply crowded their existing spent fuel pools, placing radioactive materials very close to one another, increasing the risk of a meltdown. Dry cask storage can reduce the crowding of irradiated fuel in spent fuel pools, bringing the pools back to housing a safe level of reactor cores. I am concerned about the safety of workers and the communities adjacent to nuclear plants with crowded fuel pools. Dry cask storage is currently housing only 30 percent of Wisconsin’s nuclear waste. In order to safeguard communities and plant workers, how can the Department of Energy, or the Nuclear Waste Administration if applicable, incentivize nuclear plant operators to switch to dry storage technology?

Answer. UCS strongly advocates accelerating the transfer of irradiated fuel assemblies from spent fuel pools into dry storage via either the carrot or stick approach. The stick approach could entail measures in the bill that require owners to transfer all irradiated fuel discharged from the reactor more than 10 years ago into dry storage within 20 years of enactment and then to sustain transfers to limit residence time in spent fuel pools to only irradiated fuel discharged from reactors within 10 years. Another stick might be to codify guidelines adopted by the U.S. Nuclear Regulatory Commission after 9/11 to reduce risk of spent fuel pool sabotage. For example, the bill could require that all spent fuel pools be reconfigured to a 1x4 arrangement (one irradiated fuel assembly with three empty storage cells) within 5 years of enactment. On the carrot side, the bill could pay for dry storage canisters and associated transfers. Another carrot might be for the bill to clearly allow owners of operating reactors to use the decommissioning funds required under 10 CFR 50.75 (available online at <http://www.nrc.gov/reading-rm/doc-collections/cfr/part050/part050-0075.html>) to pay for onsite dry storage. Or, the bill could provide a carrot in the form of treating any nuclear plant site that has reduced the inventory or irradiated fuel assemblies within its spent fuel pools to less than the equivalent of two reactor cores as having Priority Waste eligible for shipment to a Nuclear Waste Facility. The bill might also feature a combination of carrot(s) and stick(s)—carrot(s) to reward owners who pro-actively undertake accelerated transfers into dry storage and stick(s) to protect the public from further undue lagging.

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#### RESPONSES OF CHUCK SMITH TO QUESTIONS FROM SENATOR WYDEN

*Question 1.* One of the central recommendations of the Blue Ribbon Commission is the need for a consent-based siting process where the Federal Government works with States and Indian Tribes to pick a site, and not in opposition to them. If there’s a lesson that can be learned from Yucca Mountain, it’s that the Federal Government needs to do a better job of working with States in picking nuclear waste sites. However, I don’t think you can have a process that puts what’s politically expedient ahead of safety. How can communities and the States that surround them be as-

sured that a consent -based siting process is picking a safe site, not just the most politically popular site?

Answer. Education, involvement and technical feasibility will be keys picking a safe site. There are activities at the federal and local level that can help assure communities and states that a consent-based siting process is picking a safe site.

At the local level, to the extent the site is technically feasible, support can only be built if a potential host community understands the process for selection of the site, contraction and long-term operations and if the community trusts that its interests, concerns and priorities are being meaningfully considered and will be addressed. To that end, local governments must be (1) involved in the entire decision-making process from site analysis, selection, construction and operation and (2) provided with the resources necessary to enable their independent involvement throughout all of the phases of the project.

Local governments considering hosting nuclear waste storage and disposal facilities need to become educated on nuclear issues. Funding is needed to develop public outreach and education programs for stakeholders, government officials in county, city and town agencies, students, employees and individuals involved with emergency response and average citizens. Funding will also allow a community to bring in experts it trusts and whose responsibilities are to that community.

Outreach programs will ensure local communities understand the proposed project, the health and safety issues, the real vs. perceived risks, and will provide awareness of potential benefits — such as job creation or infrastructure development. Education and outreach efforts may include: hosting meetings in the community; creating public information campaigns; coordinating programs with local universities and community colleges; building websites and producing written material for distribution.

These programs must start as early as possible in order to determine if enough support exists within a community for it to volunteer for a nuclear waste mission. Also, these programs must continue for the long-term in the community.

At the federal level, ECA recommends re-examination of work done in the 1980s, when the Federal government identified technically feasible sites in a variety of geologic media across the United States. That work can be supplemented and amended to create a list of suitable disposal mediums and where they exist. ECA further recommends that the Department of Energy, the Nuclear Regulatory Commission, and Environmental Protection Agency (EPA) immediately develop scientifically-based health and environmental standards, model state laws and regulations to help guide the siting process.

Finally, ECA recommends consideration of lessons learned at Yucca Mountain. Billions of dollars were invested in scientific research resulting in a majority of technical experts recommending the site as safe and suitable. However the Administration's decision that Yucca Mountain is "unworkable" after years of characterization and without completing the licensing process, has eroded trust that the federal government will follow the law.

It is fair to expect that unanimity will not be reached at any one site, so the process has to be defensible and binding agreements with local governments, states and tribes regarding future site evaluations will be required. Over the long-term "safety" will need to be reviewed and analyzed by the regulators and community continuously.

*Question 2.* Historically, citizens, local governments, and tribes have expressed interest in hosting nuclear waste facilities, but state-level opposition prevented any deals from being signed. Our bill tries to address this problem by clearly spelling out a role for the state from the beginning. Are there other measures that we should include to address potential differences between local communities and broader, state-wide interests?

Answer. As noted above funding for education will be a key to permitting the state to participate in the process and to ensure that the public in the state understands (and possibly supports) the initiative to site a facility in the state. A key to the legislation will be the authorization of grant funding for the state to analyze the technical issues independently from any federal entity and to use the funds to educate the state on safety issues and the economic benefits and other benefits to the state.

While ECA has concluded that there is no one-size fits all consent agreement—the terms of a consent agreement will be specific to each potential host community and state, as negotiated with the federal government—the more clarity there is, the less likely interest will be reversed over time. To that end, the federal government should provide resources now for site studies and education as the local government of an interested community is responsible for outreach to the community as well as to the state. Local communities can provide information on the risks and benefits

of a project and help educate state officials regarding the safe transportation and operational records of facilities like the Waste Isolation Pilot Plant (WIPP) and private disposal facilities. Unlike the last siting effort, there is now a defensible safety record for state officials to consider. It would also be helpful if the Federal government could better define the level of benefits available for states or local governments considering hosting a nuclear waste facility.

ECA agrees with the legislation that, once negotiated, the consent agreement should be ratified by law, binding on all parties, and not amended or revoked except by mutual agreement by the parties. The question of when consent needs to be reached is one that requires further discussion. It has been suggested that consent be obtained early in the process contingent on NRC approval of licensing. If NRC licensing proves to be problematic, all benefits accrued should be retained by the state and local community.

#### RESPONSES OF CHUCK SMITH TO QUESTIONS FROM SENATOR MURKOWSKI

*Question 1.* With regard to the Oversight Board, the legislation leaves it to the President to determine who should be appointed—with the advice and consent of the Senate. Some have recommended that seats be reserved for various entities. Do you believe this legislation should provide more specificity as to who should be appointed to the Board?

Answer. Yes, there should be seats specifically for key stakeholders. ECA urges that a local government representative from an affected local jurisdiction be appointed to ensure community perspectives and concerns are represented. This is important to build public trust and confidence in the system.

In addition, membership on the board should be specific as to purpose and responsibilities, i.e., technical, scientific, policy, regulatory and political, and defined in legislation to promote accountability.

Political influence must be limited to the extent possible.

*Question 2.* While I understand that some of you would prefer a Board of Directors structure to the new entity, assume that the single Administrator approach is retained. Is the six-year service term appropriate? Should it be longer/shorter?

Answer. It has been estimated that it will take about two decades to site, license, construct and begin operations of a high-level radioactive waste centralized storage facility. A repository will take until 2048 according to DOE's latest estimate, which is optimistic. A six-year term should allow sufficient time to make progress, but may not preclude political manipulation.

*Question 3.* How many storage facilities and repositories do you believe will be needed to handle this nation's nuclear waste? Should they be co-located? Should they be geographically spread across the country?

Answer. ECA supports focusing on achieving public acceptance and siting, characterizing, licensing and opening one storage facility and one repository. Our collective inability to do so thus far has been the real issue. ECA does not have position on whether there should be more than one storage facility or repository but most experts agree that more than one facility and repository will likely be needed.

It would be ideal and beneficial for a storage facility to be co-located in order to consolidate and stage the waste. However, it should not be a requirement as safe transportation has been demonstrated.

Finally, while geographically distributed sites may be desirable, the location of a repository should be science-based on the most suitable geology available and public acceptance. However, it should be noted that the Nuclear Waste Policy Act was passed principally because there was an agreement that no one state would have to take all the waste.

*Question 4.* When it comes to a state, local community, or tribal government interacting with the new entity, is it preferable to interact with a single administrator type structure, or a board of directors with a CEO?

Answer. Both can work if managed properly. ECA urges that a representative of the state and local government hosting the nuclear waste facility have a position directly on any oversight or advisory board.