

THE NUCLEAR WASTE ADMINISTRATION ACT

HEARING BEFORE THE COMMITTEE ON ENERGY AND NATURAL RESOURCES UNITED STATES SENATE ONE HUNDRED TWELFTH CONGRESS

SECOND SESSION

TO

RECEIVE TESTIMONY ON S. 3469, THE NUCLEAR WASTE
ADMINISTRATION ACT OF 2012

SEPTEMBER 12, 2012



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THE NUCLEAR WASTE ADMINISTRATION ACT

WEDNESDAY, SEPTEMBER 12, 2012

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

The committee met, pursuant to notice, at 9:30 a.m. in room SD-366, Dirksen Senate Office Building, Hon. Jeff Bingaman, chairman, presiding.

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

The CHAIRMAN. OK. Why don't we start the hearing? The committee meets this morning to consider S. 3469, the Nuclear Waste Administration Act of 2012.

S. 3469 is intended to implement the recommendations of the Blue Ribbon Commission that Secretary Chu appointed to review the nuclear waste program. The Blue Ribbon Commission issued its final report in January. This committee heard from the 2 chairs of the Commission, General Brent Scowcroft and Representative Lee Hamilton on that report in February.

The Blue Ribbon Commission was worthy of its name. It was made up of 15 highly distinguished individuals from academia, from industry, from public service. They approached their task conscientiously and diligently. They produced a very thorough and comprehensive report.

The Commission presented us with 8 clear, concise and straight forward recommendations. I've tried to implement those recommendations in the bill that is now before us for this hearing. I worked closely with Senator Murkowski and the Chair and Ranking Member of the Energy and Water Appropriations Subcommittee, Senator Feinstein and Senator Alexander in the effort.

Regrettably, we were not as successful as the Blue Ribbon Commission was in reaching a unanimous bipartisan consensus. Although we were able to agree on most issues, we could not agree on the siting process for storage facilities and how to ensure that temporary storage facilities do not become permanent substitutes for an underground repository. With time running out on this Congress, we agreed that I should go ahead and introduce the bill as it stands and hold this hearing on the bill. Leave it to the next Congress to continue working on the issue.

We're very fortunate to have General Scowcroft back with us this morning. We're sorry that Congressman Hamilton could not be with us. We extend to him and his family our sincere condolences on the tragic death of his wife, Nancy, last month.

We appreciate Dr. Meserve stepping in for Congressman Hamilton today.

We also welcome back Assistant Secretary Lyons to offer the Administration's views on the bill.

Following this panel we will hear from Mr. Henry Barron, the President and Chief Executive Officer of Constellation Energy Nuclear Group.

Mr. Geoffrey Fettus, who is the Senior Attorney at the National or the Natural Resources Defense Council.

Let me defer to Senator Murkowski for any comments she'd like to make.

**STATEMENT OF HON. DEAN HELLER, U.S. SENATOR
FROM NEVADA**

Mr. Chairman and Ranking Member Murkowski, I want to start by thanking you for holding this hearing today. While S. 3469 does not totally take Yucca Mountain off the table, I am pleased that we are discussing legislation that recognizes the need for consent-based nuclear waste repository siting and provides a potential path forward beyond Yucca Mountain.

My home state of Nevada is home to the proposed Yucca Mountain Nuclear Waste Repository. I have long had serious concerns about the safety of Yucca Mountain and the suitability of Southern Nevada as the final resting place of our spent nuclear material. With the amendment of the Nuclear Waste Policy Act in 1987, Nevada—a state without any nuclear power plants—was legally compelled to bear the sole burden of long-term storage of the nation's nuclear waste. With the stroke of a pen, objective evaluation of Yucca Mountain as one option among many ceased and the study of alternative storage methods and sites was curtailed. Given the politicized history of Yucca Mountain, I don't trust the federal government to appropriately manage a repository at the site.

I recognize the need to address the problem of spent nuclear fuel, but it must be solved through careful consideration of all alternatives based on credible scientific information, and not by politicians in Washington. I appreciate the effort to create a sound solution to long-term nuclear waste storage that Chairman Bingaman and Ranking Member Murkowski are seeking through the Nuclear Waste Administration Act of 2012. It is my hope that the lessons learned from Yucca Mountain, such as the importance of consent-based siting and truly objective evaluation of any proposed site, will not be lost on our future efforts. I look forward to working with my colleagues to find safe and viable alternatives to Yucca Mountain for the long-term storage of nuclear waste.

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

Senator MURKOWSKI. Thank you, Mr. Chairman. I do thank you for holding this hearing on a topic that, I think we would all agree, needs to be resolved in order for nuclear energy to play the role that, I believe, that it's clearly capable of in meeting our Nation's energy needs.

I have expressed some skepticism in the past about the need to delay progress on resolving these issues while the Blue Ribbon

Commission deliberated. But, as you have stated and I will absolutely concur, the Blue Ribbon Commission is an extremely credible group. It has produced a thoughtful product regarding how to move our Nation's spent nuclear fuel program forward. I fully recognize and appreciate that.

Now there may be little that is actually truly new in the proposals that came out of the Blue Ribbon Commission. But I am optimistic that the report has ignited a heightened sense of urgency and renewed focus on these issues. As the Commission's report notes the government's failure to address our nuclear waste issues is damaging to the development of future nuclear power and simultaneously worsening our Nation's financial situation.

I think that we need to act on this. I think we need to act soon.

Mr. Chairman, the legislation that you introduced is indicative of months of good, productive discussions. As you've noted, that you led along with Senator Feinstein, Senator Alexander and myself discussing the ways to end the—to address the back end of the nuclear fuel cycle. I congratulate you on moving the discussion forward, putting the marker out there and allowing us to begin the very critical, the very important discussion that must advance.

While we couldn't ultimately bridge the issue of linking progress on interim storage and a permanent repository, I want to be clear to those following these discussions that while prospects for legislative enactment in this Congress are not favorable. We're all very honest with that. We will continue the effort next year and build upon the progress that the Chairman has begun.

Now I will also note that the Senate Energy and Water Appropriations bill contains language that seeks to move interim storage forward in a timely manner. I think we recognize that we're going to be dealing with a shorter term CR, perhaps in the next couple days, perhaps next week. I'm hopeful that the interim storage language will be included when Congress acts on a full Fiscal Year 2013 spending bill.

In addition we would be remiss if we did not examine the impact of the Court of Appeals for the District of Columbia's remand on the NRC's waste confidence decision on new license applications and license renewals and how that legislation, along the lines of S. 3469, could help address the court's concerns.

Again, Mr. Chairman, I thank you for holding the hearing, advancing the legislation and the discussion and look forward to the witnesses this morning.

The CHAIRMAN. Thank you very much.

Let me, once again, just introduce this first panel.

General Brent Scowcroft, the Co-Chair of the Blue Ribbon Commission on America's Nuclear Future.

Dr. Richard Meserve, the President of the Carnegie Institution for Science.

Dr. Peter Lyons, who is the Assistant Secretary for Nuclear Energy with the U.S. Department of Energy.

So, General Scowcroft, why don't you go ahead and begin, if you'd like. Each of you take what time you think you need to explain the main points you'd like to make about the proposed legislation.

STATEMENT OF GENERAL BRENT SCOWCROFT, CO-CHAIRMAN, BLUE RIBBON COMMISSION ON AMERICA'S NUCLEAR FUTURE

General SCOWCROFT. Thank you very much, Chairman Bingaman.

Mr. Chairman, Ranking Member Murkowski, it's a great pleasure to appear before you today to discuss S. 3469, the Nuclear Waste Administration Act of 2012.

I would like at the outset to pass along Co-Chairman Hamilton's sincere regrets for not being here with us today. As you said, Mrs. Hamilton lost her life in a tragic accident last month. Co-Chairman Hamilton is home in Indiana attending to family matters. It was a great privilege for me to serve alongside him as Co-Chairman of the Blue Ribbon Commission. We join you in extending our deepest sympathies to him.

I'm very pleased that Commission member, Dick Meserve is able to join with me this morning.

We were also most pleased to receive the invitation to testify today because we believe our Nation simply must craft a sustainable solution to the nuclear waste management issue. The legislation that Senator Bingaman has introduced is an outstanding beginning to what we recognize could be an extended legislative process.

We are also pleased to be here because it gives us a chance to publicly thank Chairman Bingaman for his service to the Nation as he prepares to retire at the end of this session. Thank you, Senator Bingaman for all you have done to help craft sensible energy policy for the United States. Your leadership on the nuclear waste issue and on energy issues in general will be sorely missed. Thank you for allowing us the opportunity to testify before you today.

As you know the Blue Ribbon Commission on which we served was formed by the Secretary of Energy at the direction of the President. Our task was to conduct a comprehensive review of policies for managing the back end of the nuclear fuel cycle and to recommend a new strategy. We delivered our final report to the Secretary of Energy in January of this year and made 8 key recommendations.

Your committee was fully briefed on these recommendations when Co-Chairman Hamilton and I testified in February. So I will not go into detail about the individual recommendations again. Rather let me just remind the committee that our Commission viewed these 8 recommendations as an integrated set and that they would be most effective if implemented as a complete package.

Now I will turn the microphone over to Mr. Meserve.

[The joint prepared statement of General Scowcroft and Mr. Meserve follows:]

PREPARED STATEMENT OF GENERAL BRENT SCOWCROFT, CO-CHAIRMAN, AND RICHARD A. MESERVE, COMMISSIONER, BLUE RIBBON COMMISSION ON AMERICA'S NUCLEAR FUTURE

INTRODUCTION

Chairman Bingaman, Ranking Member Murkowski, distinguished members of the committee, it is a pleasure to appear before you today to discuss S. 3469, the Nuclear Waste Administration Act of 2012.

Before we begin, I would like to pass along Co-Chairman Hamilton's sincerest regrets for not being here with us today. As you may know, Mrs. Hamilton died in a tragic accident last month and Congressman Hamilton is home in Indiana tending to family affairs. It was a great privilege to serve alongside him as co-chairman of the Blue Ribbon Commission and we extend him our deepest sympathies. I am pleased that Dick Meserve is available to join me this morning.

We were also most pleased to receive the invitation to testify today because we believe our nation simply must craft a sustainable solution to the nuclear waste management issue. The legislation that Senator Bingaman has introduced is an outstanding beginning to what we recognize could be an extended legislative process. We are also pleased to be here because it gives us a chance to publicly thank Chairman Bingaman for his service to the nation as he prepares to retire at the end of this session. Thank you, Senator Bingaman, for all you've done to help craft sensible energy policy for the United States. Your leadership on the nuclear waste issue and on energy issues in general will be sorely missed. Thank you for allowing us the opportunity to testify before you today.

BRC Report Overview

As you know, the Blue Ribbon Commission on which we served was formed by the Secretary of Energy at the direction of the President. Our charge was to conduct a comprehensive review of policies for managing the back end of the nuclear fuel cycle and to recommend a new strategy.

We delivered our final report to the Secretary in January of this year, and made eight key recommendations:

1. A new, consent-based approach to siting future nuclear waste management facilities.
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 advances in nuclear energy technology and for workforce development; and
8. Active U.S. leadership in international efforts to address safety, non-proliferation, and security concerns.

Your committee was fully briefed on the recommendations of our Commission when Co-Chairman Hamilton and I testified in February of this year, so I will not go into detail about the individual recommendations. Rather, let me just remind the committee that our Commission viewed these eight recommendations as an integrated set, and that they would be most effective if implemented as a complete package.

Views on S. 3469

We are pleased to see that Senator Bingaman's draft legislation incorporates many of the changes to existing law that will be required to implement our Commission's recommendations. In particular, S. 3469 would implement the Commission's recommendations to authorize a consent-based process for nuclear waste facility siting, to be conducted by an entity removed from the Department of Energy, with access to Nuclear Waste Fee payments and the balance of the Nuclear Waste Fund. The bill's provisions requiring development of generic radiation protection standards for repositories and a mission plan for the Nuclear Waste Administration are also consistent with the Commission's recommendations.

While S. 3469 generally mirrors the Commission's recommendations, there are a few areas of difference that we believe are worth highlighting and exploring. In particular:

1. The Commission recommended the establishment of a congressionally chartered corporation to carry out the waste program. The draft legislation proposes instead to create a Nuclear Waste Administration, an agency of the federal government, to carry out this role. While both approaches would assure appropriate focus, we recommended a federally chartered corporation in order to assure the necessary management stability for the long-term task of advancing the waste program and to provide a degree of isolation from short-term political pressures. In particular, a new waste man-

agement organization will need the leadership of a strong chief executive with exceptional management, political, and technical skills and experience and tenure that extends longer than the political cycle—objectives that might be more easily achieved through a corporation than a federal agency. We urge the committee to reconsider this aspect of the legislation.

2. The proposed legislation places limits on the amount of spent fuel that can be accepted for consolidated storage prior to congressional ratification of a consent agreement for a repository. We understand that this provision reflects a concern that any consolidated storage facility could become a de facto disposal facility, which is why existing law prohibits the construction of a storage facility before construction authorization has been issued for a first repository. The Blue Ribbon Commission concluded that “the current rigid legislative restriction . . . should be eliminated,” but also emphasized that “the challenge of establishing positive linkages such that progress on storage does not undermine, but rather supports progress on repository development remains an important one.” Our review did not lead us to recommend any specific linkages because we concluded that the volume of fuel to be accepted in consolidated storage could be one of the many elements of the negotiation between the nuclear waste management organization and potential host governments. We appreciate that the bill allows consolidated storage to begin at a scale sufficient to provide for acceptance of all of the spent fuel from shutdown reactors, as we recommended, and that full scale storage could begin considerably earlier than is possible under current law. However, we encourage the committee to give careful consideration to alternative approaches for ensuring that a storage facility is a complement to a repository. We suggest that there may be benefits in allowing the linkage provisions to be the subject of negotiations between the waste management organization and potential storage facility hosts, subject to final approval by Congress.

3. And finally, although the Nuclear Waste Oversight Board called for in Section 205 is generally consistent with our Commission’s recommendation for independent oversight of the waste management organization, we believe its membership should be expanded. The oversight board as set forth in Section 205 would only include members from the federal government, presumably subject to regular turnover on a political cycle. We believe that broader representation and further assurance of stability would be appropriate. To achieve this end, we encourage the committee to consider adding representatives from outside of government, as called for in our Commission’s recommendations. Non-governmental members could come from organizations contributing to the Nuclear Waste Fund, state public utility commissions, the environmental non-governmental organization community, representatives of workers involved in the construction or operation of radioactive waste management facilities, and others. This supplementation of the board’s membership would reinforce the federal commitment to a consent-based process.

While we think these three differences between S. 3469 and our Commission’s recommendations are important and are worthy of further consideration, we do not in any way want to imply dissatisfaction with the efforts of the committee. Chairman Bingaman, Ranking Member Murkowski and other Senators, particularly Senators Feinstein and Alexander, have shown great leadership in their willingness to engage in serious bipartisan discussions about the future of nuclear waste management in the United States. In a year presenting many demands on the Congress, we commend your attention to the problem of charting a new course for addressing nuclear waste.

Concerns about Lack of Administration Action

I am unable to provide you with any insights as to the views of the Administration to our report because the Administration has not yet released an implementation plan in response to our recommendations. That plan was due at the end of July, so we cannot say for certain whether the Administration will demonstrate the same level of seriousness that is reflected in your draft legislation. Our Commission report was issued in January, and despite initial positive signals from the Administration, we have seen little in the way of concrete action. We are particularly disappointed to have received no formal reply to a December 2011 letter we sent the White House in which we urged action to provide assured access to utility waste disposal fees.

In our letter and in our report we recommended several near-term actions that could be taken by the administration in cooperation with key committees in Con-

gress and the Congressional Budget Office to give greater access to the nuclear waste fees going forward, while waiting for legislation—such as S. 3469—that would provide a comprehensive fix to the funding of the program. Failure to fix the funding problem could undermine key recommendations of the Commission. For example, the parallel storage and disposal programs we recommend could be in competition for limited funds instead of being mutually supportive, and a consent-based siting process that provides assurances to host communities that a storage facility or repository will be a positive asset could be undermined if access to a source of funding for promised benefits is not assured.

Our Commission believed that fixing the funding problem is vital. We believe that steps towards implementation of near-term proposals that do not have to wait for comprehensive legislative action would be a clear and unmistakable signal that the Administration and Congress are willing to take the difficult yet necessary measures to put our nation's nuclear waste management program back on track and enable its success.

Conclusion

In conclusion, and as we said to this committee in February, the national interest demands that our nuclear waste program be fixed. Complacency with a failed nuclear waste management system is not an option and the need for a new strategy is urgent. We believe the bill that Senator Bingaman has prepared represents a very useful starting point for an important discussion.

Thank you for having us here today. We appreciate the opportunity to share our views on S. 3469 and we look forward to your questions.

STATEMENT OF RICHARD A. MESERVE, PRESIDENT, CARNEGIE INSTITUTION FOR SCIENCE

Mr. MESERVE. Thank you, General.

We are pleased to see that Senator Bingaman's draft legislation incorporates many of the changes to existing law that will be required to implement the Commission's recommendations. In particular, Senate S. 3469 would implement the Commission's recommendations to authorize a consent based process for nuclear facility siting being conducted by an entity removed from the Department of Energy with unfettered access to nuclear waste fee payments and the balance of the Nuclear Waste Fund. The bill's provisions requiring development of generic radiation protection standards for repositories and a mission plan for the Nuclear Waste Administration are also consistent with our recommendations.

While the bill generally mirrors the Commission's recommendations, there are a few areas of difference that we believe are worth highlighting and exploring.

First, the Commission recommended the establishment of a congressionally chartered corporation to carry out the waste program. The draft legislation proposes instead to create a Nuclear Waste Administration, an agency of the Federal Government, to carry out this role.

While both approaches would assure appropriate focus, we recommended a federally chartered corporation in order to assure the necessary management stability for the long term task of advancing the waste program and to provide a degree of isolation from short term political pressures. In particular, a new waste management organization will need the leadership of a strong chief executive with exceptional management, political and technical skills and experience and tenure that extends longer than the political cycle, objectives that may be more easily achieved through a corporation than through a Federal agency. We urge that the committee reconsider this aspect of the legislation.

Second, the proposed legislation places limits on the amount of spent fuel that can be accepted for consolidated storage prior to congressional ratification of a consent agreement for a repository.

We understand that this provision reflects a concern that any consolidated storage facility could become a de facto disposal facility which is why existing law prohibits construction of a storage facility before construction authorization has been issued for a first repository.

The Blue Ribbon Commission concluded and I'm quoting, "that the current rigid legislative restrictions should be eliminated." But we also emphasize and I'm quoting again, "the challenge of establishing positive linkages such that progress on storage does not undermine, but rather supports progress on repository development remains an important one."

Our review did not lead us to recommend any specific linkages because we concluded that the volume of fuel to be accepted in consolidated storage could be one of the many elements of negotiation between the Nuclear Waste Management Organization and potential host governments. We appreciate that the bill allows consolidated storage to begin at a scale sufficient to provide for acceptance of all the spent fuel from shut down reactors, as we recommended. That full scale storage could begin considerably earlier than is possible under current law.

However, we encourage the committee to give careful consideration to alternative approaches for ensuring that a storage facility is a complement to a repository. We suggest that there may be benefits in allowing the linkage of provisions to be the subject of negotiations between the Waste Management Organization and potential storage facility hosts subject, of course, to final approval by Congress.

Third, we note that although the Nuclear Waste Oversight Board, called for in section 205, is generally consistent with our Commission's recommendation for independent oversight of the Waste Management Organizations. We believe its membership should be expanded. The Oversight Board, as set forth in Section 205, would only include members from the Federal Government, presumably subject to regular turnover on a political cycle. We believe that broader representation and further assurance of stability would be appropriate.

To achieve this end we encourage the committee to consider adding representatives from outside the government, as called for in our Commission's recommendations. Non-governmental members could come from organizations contributing to the Nuclear Waste Fund, state public utility commissions, the environmental non-governmental organization community, representatives of workers involved in the construction or operation of waste management facilities and others. This supplementation of the board's membership would reinforce the Federal commitment to a consent based process.

While we think that these differences between S. 3469 and our Commission's recommendations are important and are worthy of further consideration, we do not in any way want to imply dissatisfaction with the efforts of the committee.

Chairman Bingaman, Ranking Member Murkowski and other Senators, particularly Senators Feinstein and Alexander, have shown great leadership in their willingness to engage in serious bipartisan discussions about the future of nuclear waste management in the United States. In a year presenting many demands on the Congress we commend you for your attention to the problem of chartering a new course for addressing this important problem.

Now I'll turn the microphone back over to General Scowcroft.

General SCOWCROFT. We are unable to provide you with any insights as to the views of the Administration to our report because the Administration has not yet released an implementation plan in response to our recommendations. That plan was due at the end of July, so we cannot say for certain whether the Administration will demonstrate the same level of seriousness that is reflected in your draft legislation.

Our Commission report was issued in January. Despite initial positive signals from the Administration, we have seen little in the way of concrete action. We are particularly disappointed to have received no formal reply to a December 2011 letter we sent to the White House, in which we urged action to provide assured access to utility waste disposal fees.

In our letter and in our report we recommended several near term actions that could be taken by the Administration in cooperation with key committees in Congress and the Congressional Budget Office to give greater access to the Nuclear Waste Fees going forward while waiting for legislation, such as S. 3469, that would provide a comprehensive fix to the funding of the program. Failure to fix the funding program could undermine key recommendations of the Commission.

For example, the parallel storage and disposal programs we recommend could be in competition for limited funds instead of being mutually supportive. A consent based siting process that provides assurance to host communities that a storage facility or repository will be a positive asset, could be undermined if access to a source of funding for promised benefits is not assured.

Our Commission believed that fixing the funding problem is vital. We believe that steps toward implementation of near term proposals, that do not have to wait for comprehensive legislative action would be a clear and unmistakable signal that the Administration and Congress are willing to take the difficult, yet necessary measures, to put our Nation's nuclear waste management program back on track and enable its success.

In conclusion, and as we said to this committee in last February, the national interest demands that our nuclear waste program be fixed. Complacency with a failed nuclear waste management system is not an option. The need for a new strategy is urgent.

We believe the bill that Senator Bingaman has prepared represents a very useful starting point for an important discussion.

Thank you for having us here today. We appreciate the opportunity to share our views on S. 3469. We look forward to your questions.

The CHAIRMAN. Thank you very much.

Dr. Lyons, why don't you go right ahead?

**STATEMENT OF PETER B. LYONS, ASSISTANT SECRETARY FOR
NUCLEAR ENERGY, DEPARTMENT OF ENERGY**

Mr. LYONS. Thank you.

Chairman Bingaman, Ranking Member Murkowski and Senator Wyden, thank you very much for the opportunity to appear before you today to discuss nuclear waste management issues and S. 3469. Thank you for your leadership on this important issue.

Nuclear power is an integral part of the Administration's all of the above clean energy strategy. But for nuclear energy to remain a viable component of the Nation's energy portfolio, we must develop a sustainable fuel cycle with a well understood and well accepted fuel management strategy. While used fuel is safely stored today, the current storage certainly does not represent a permanent solution. Because acceptance of waste did not begin in 1998, a substantial cost has been presented to the taxpayers to reimburse utilities for the cost of ongoing storage that will continue to grow until the government fulfills its obligations.

The Blue Ribbon Commission on America's Nuclear Future or the BRC worked through a public, open and transparent process on recommendations to support a new strategy for the back end of the nuclear fuel cycle. Senator Bingaman's bill addresses many of the BRC's recommendations. While the Administration is still finalizing its framework for the management of nuclear waste, there are key elements that any strategy must address.

No matter what organization, funding, storage and disposal decisions are made moving forward the consent based approach to siting endorsed by the BRC is critical to success. The Administration supports working with Congress to develop a process that is transparent, adaptive and technically sound. Experiences in other countries indicate that a consent based process, developed through engagement with key stakeholders and with significant public involvement offers the greatest probability for success.

The BRC recommended the establishment of a new, single purpose organization for management and disposal. The Administration agrees that some organizational change is needed to provide the stability, focus and credibility needed to build public trust and confidence.

The BRC highlighted issues associated with the Nuclear Waste Fund. A new approach to funding should assure that the fees paid by taxpayers using nuclear generated electricity support the Nation's nuclear waste management strategy. In addition, the organization needs timely access to the funds necessary to execute its mission.

Any new funding structure must balance increased funding flexibility with rigorous spending oversight while still providing accountability to the President and to Congress. Different models can achieve this goal. This will be an area of continued discussion between Congress and the Administration.

The BRC recommended that the United States develop one or more consolidated storage facilities. Building such a storage capacity could enable the government to move more rapidly to fulfill its contractual responsibilities and thus reduce future liabilities. Storage can add security and flexibility to a system for permanent waste disposal. But as the BRC recommended some form of linkage

between opening a consolidated storage facility and progress toward a repository is necessary so that the storage facility does not become a de facto permanent facility.

The Administration supports exploring this issue with Congress. In addition the Administration supports the broad scientific and international consensus that a geologic repository is the most effective, permanent solution to disposition of high level wastes.

The Administration agrees with the BRC that the Department should continue R and D on possible future fuel cycle options. In the near term the Department will move forward with R and D activities within the constraints of existing legislation.

The Administration would again like to thank the BRC for their dedicated work in developing a path forward. They highlighted a need for changes in current law and the Administration will work with Congress to define a responsible and achievable path forward.

In closing, the Administration thanks Senator Bingaman for his important contribution toward new legislation. It provides a strong base for mature dialog to continue.

On a very personal note, Mr. Chairman, this may be the last time that I testify before you. We've interacted for many years, especially when I served on the staff of this committee. I've been honored with the opportunity to work with you and your outstanding staff on many important issues. Your dedication to public service, your thoughtful consideration of complex issues provides a superb model for public service.

Thank you for your service to the Nation, sir.

Thank you.

[The prepared statement of Mr. Lyons follows:]

PREPARED STATEMENT OF PETER B. LYONS, ASSISTANT SECRETARY FOR NUCLEAR ENERGY, DEPARTMENT OF ENERGY

Chairman Bingaman, Ranking Member Murkowski, and Members of the Committee, thank you for the opportunity to appear before you today to discuss nuclear waste management issues and S. 3469, The Nuclear Waste Administration Act of 2012. Thank you for your leadership on this important issue.

Nuclear power is an integral part of our "all-of-the-above" energy strategy. It provides twenty percent of our nation's electricity supply, and the Administration is working to expand the safe use of nuclear power through support for new nuclear power plants incorporating state-of-the-art passive safety features as well as cost-shared technical support for licensing two designs for small modular reactors. Nuclear energy is an important contributor to our nation's energy security, and promotes clean-energy jobs. Nuclear energy production also provides important environmental benefits by producing little carbon dioxide or conventional air pollutant emissions.

The United States must develop a sustainable fuel cycle and used fuel management strategy to ensure that nuclear power continues to be a safe, reliable resource for our nation's long-term energy supply and security. Because acceptance of waste did not begin in 1998, as mandated by the Nuclear Waste Policy Act, a substantial cost has been presented to the taxpayers to reimburse utilities for the cost of ongoing storage and will continue to grow until the government fulfills its obligations.

The Blue Ribbon Commission on America's Nuclear Future (BRC) released its final report on January 26, 2012. The Commissioners worked collaboratively and constructively—through a public, open and transparent process—on recommendations to support a new strategy for the back end of the nuclear fuel cycle. The Nuclear Waste Administration Act of 2012 addresses many of the BRC's recommendations, and while the Administration is still finalizing its framework for the management of nuclear waste, there are key elements that any strategy must address.

Organization

The BRC recommended the establishment of a new, single-purpose organization charged with the management and disposal of high level waste and the associated interface with the waste generators. The Administration agrees that a new waste management and disposal organization could have advantages in terms of stability, focus, and other characteristics that will be important to future success. At the same time, it is evident that the success of any future waste management organization will be driven by many factors and unforeseen circumstances. The organizational form is only one of these factors. Of equal or greater importance are decisions about other organizational characteristics to ensure that the organization has adequate authority and leadership to execute its mission, and balances the need for independence of the organization with appropriate oversight mechanisms. Whatever form the new organization takes, organizational stability, leadership continuity, oversight and accountability, and public credibility are critical attributes for future success. The Administration looks forward to working with Congress to design a governance structure that meets these objectives.

Funding

Following the Nuclear Waste Policy Act of 1982 (NWPA), utilities entered into contracts with the federal government, which agreed to accept and permanently dispose of utilities' used nuclear fuel in exchange for a fee that would be paid by rate-payers using nuclear generated electricity. All NWF spending is subject to annual appropriations and is required to compete with other priorities within the budget, even though the funds collected can only be used for purposes authorized under the NWPA. Since the enactment of the NWPA, \$8 billion has been appropriated from the NWF to date. The current balance of the NWF is estimated at \$27 billion. Fee collections of more than \$750 million annually combined with accrued interest will continue to grow the Fund.

For any organization to be effective in the performance of this complex mission, it needs timely access to funds in the amounts necessary to execute its mission. The BRC highlighted this need noting, "the success of a revitalized nuclear waste management program will depend on making the revenues generated by the nuclear waste fee and the balance in the NWF available when needed and in the amounts needed to implement the program."

Any new funding structure for this program will need to balance increased funding flexibility and rigorous spending oversight to help assure that the program is implemented in the most cost-effective manner possible, while still holding the organization accountable to the President and Congress. The Administration looks forward to working with Congress to find a solution that meets these objectives.

Disposal and Storage

The Administration supports the broad scientific and international consensus that a geologic repository is the most effective permanent solution to dispose of high level waste. While this does not preclude any decision about future fuel cycle options, it is evident that a once-through cycle is appropriate for the foreseeable future. Cost, proliferation risks, environmental concerns, economics, and technology limitations are some of the issues associated with closing the fuel cycle in the U.S. through use of recycling. The Administration agrees with the BRC that any new organization should focus on the development and operation of storage and repository facilities while the Department continues R&D on possible future fuel cycle options.

The BRC recommended that the U.S. develop one or more consolidated storage facilities. Building consolidated storage capacity could enable the government to move more rapidly to fulfill its contractual responsibilities and thus reduce future liability costs. While consolidated storage can add security and flexibility to a system for permanent waste disposal, some form of linkage between opening a consolidated storage facility and progress toward a permanent repository is necessary so that potential host states and communities for consolidated storage facilities are not saddled with a de facto permanent facility. The Administration supports exploring this issue with Congress.

Consent-Based Siting

No matter what organization, funding, and storage decisions are made moving forward, 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 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—developed through

engagement with states, tribes, local governments, key stakeholders, and the public—offers a greater probability of 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.

Activities in FY 2012 and Proposed in FY 2013

There are a number of key R&D areas that the Administration has recognized as foundational to the nation's nuclear waste management program, and was pursuing even prior to the release of the Commission's recommendations. Planned activities in the areas of transportation, storage, and disposal align with the BRC suggestions and in the near term, the Department will move forward with R&D in these areas, within the constraints of existing legislation.

Transportation

The Department is evaluating the inventory, transportation interface, and shipping status of used nuclear fuel at nuclear power sites. The Department is re-engaging the regional transportation groups to understand stakeholder issues as we work to finalize the policy and procedures for providing technical assistance and funds. The Administration will also draw from the successful transportation approaches used to support shipments to the Waste Isolation Pilot Plant (WIPP) in New Mexico.

Storage

The Department is evaluating the possibility of direct disposal of existing storage containers in various geologic media; understanding material degradation in storage and transportation systems over extended periods of time; and the development of standardized canister concepts for transportation, storage, and disposal.

Disposal

The Department is conducting R&D related to disposal in the following areas: evaluating back-filled engineered barriers systems and materials; evaluating geologic media for their impacts on waste isolation; evaluating thermal management options for various geologic media; and developing a R&D plan for deep borehole disposal. The role of retrievability in the geologic disposal of nuclear waste remains an important issue that may need further consideration.

Closing

The Administration would like to thank the BRC Commissioners for their dedicated work in developing a path forward in nuclear waste management. The BRC highlighted the need for changes in current law and the Administration thanks Chairman Bingaman for his important contribution to moving the discussion forward with this new legislation. The Nuclear Waste Administration Act of 2012 provides a base from which our dialogue can continue and the Administration remains committed to working with Congress to define a responsible and achievable path forward to manage our nation's used nuclear fuel and nuclear waste.

The CHAIRMAN. Thank you very much. Thank all 3 witnesses for excellent testimony.

Let me start with a few questions.

I think all of you have highlighted this issue of linkage which is a concern that, I think, all of us here in the Congress, in the Senate who worked on this issue, have tried to focus on as well.

I think there's an agreement that we need a permanent geologic repository.

There's an agreement that there's a need to provide storage until the repository is available.

Third, that there's a need for a mechanism to ensure that the temporary storage facility does not take the place of a long term repository and end up becoming a de facto permanent solution to this problem.

So what we seem to disagree on is what that mechanism ought to be. I think it's important that Congress identify the mechanism and put it into the law whether the one that I propose in this legislation is the best one will be for a future Congress to decide. But at least this has the advantage, as I think some of you have ac-

knowledge, of providing more than 3 times as much storage capacity as the shut down reactors need and also of allowing full scale storage to begin considerably earlier than is possible under current law.

You recommend that we leave the linkage question to the state or community hosting the storage facility to negotiate, presumably in the form of deadlines or volume limitations. I guess one obvious question is what happens if a state is willing to host a storage facility without linkages? Should we then abandon a repository program if the state is willing to host a storage facility without requiring any linkage?

Another question is what happens if a host state insists on linkages but the repository is not built? How would the state enforce its linkages? By sending the waste back to the utilities that generated the waste or by fines or by damages? Would that not just put us right back where we are today with the taxpayers liable for billions of dollars of damages because we do not have any repository?

So those are concerns that I have. I'd just welcome comments from any of the witnesses about how we resolve these issues. If we don't put something in the Federal law that establishes a linkage and we just say it's up to each individual jurisdiction or state to negotiate to require that linkage, to me that's a very thin reed to hang our prospects of getting a future repository built on.

Dr. Meserve, did you have a perspective on that?

Mr. MESERVE. Let me say, I think that, as you've indicated, the linkage point is a crucial one. It is very important to evaluate it. It is completely true that a storage facility is not an alternative to a repository.

We need a repository and storage may well be something that is safe for an extended period of time. But it is not the long term answer. So we do need to make sure that we have incentives and a process by which we achieve a repository.

I think our concern about—with the draft legislation was in part on the severe constraint that the linkage would impose. As I understand the draft legislation, there are 2 constraints.

One is that before the passage of the act any repository that, excuse me, any storage facility that was basically undertaken would be limited to a limited volume of material. But that after the act is passed there could not be a storage facility until a consent agreement is ratified by the Congress.

So you have a situation in which we have something like the current law that storage just couldn't happen once the statute passed absent a repository consent agreement actually subject to ratification.

One of the things that we tried to emphasize in our report was the crucial importance of adaptability. So I think that I'm trying to express, although we recognize there were a need for linkages, I think somewhat more flexibility might be appropriate. I would be concerned after the statute is passed of an absolute rigid requirement that holds up a storage facility given the many benefits that we see of having in terms of storage.

The CHAIRMAN. Let me just ask on that. My impression is that, what our proposed legislation calls for, is that if there is in fact a

storage facility established under the language passed in the Appropriations bill prior to the enactment of this bill, that storage facility could continue to be constructed. That storage facility could accept waste. But it could only accept waste up to the limit of the ten million, or the ten thousand ton number.

Mr. MESERVE. That's correct.

The CHAIRMAN. So what we are doing is we're saying that at some point you have to quit moving waste to a storage facility until you can go ahead and sign an agreement to pursue a repository. But is that your understanding so we don't have a disagreement about what the bill calls for?

Mr. MESERVE. That is my understanding. Although I think the legislation goes further than that. That if we do not establish, you're quite correct, that if under existing law we build a storage facility the statute would limit the amount of material that could go to it.

If we don't establish such a storage facility or are unable to do so within—by the time this statute is passed, my understanding of the language is that there is an absolute prohibition on proceeding with the storage facility until there is a consent agreement that is ratified by the Congress. So that there is a limited window for a storage facility that the statute provides, but that window closes if you haven't been able to exploit the opportunity to establish a storage facility before enactment.

The CHAIRMAN. I think that's wrong. But at any rate, I appreciate that clarification of the way you're reading it.

Mr. MESERVE. But to come back to your basic question. It seems implausible to me that any community that would enter into an agreement with a storage, for a storage facility without some understanding that it is for a limited term. So you're first hypothetical that of a situation in which a community agreed for storage and didn't establish any linkage would seem to me to be unlikely except in the circumstance where the community also wanted to be a disposal facility.

In that circumstance you'd—and the bill encourages the new Administration to have a joint facility for both storage and disposal. In that circumstance I think that, you know, you may have a need for establishing rigid linkages, maybe less than otherwise would be the case because it would be in that community's interest as part of the agreement to make sure that there is a disposal facility and that their aggressive means that are included in the consent agreement to assure that that proceeds.

There also is a—you asked the question well what if there were linkages and we just didn't have a disposal facility? I think that the answer for that is that is a situation, of course, we confront today with regard to government commitments that have not been fulfilled. The answer to that has been rather severe penalties that the government pays to proceed to put pressure to make sure that Federal commitments are fulfilled.

The CHAIRMAN. Senator Murkowski.

Senator MURKOWSKI. Let's continue talking about the consent based approach because I think as we've discussed this that's a logical, certainly more doable way to achieve the goal here when we're talking about our nuclear waste repository. There's been a lot of

focus on Sweden as an example where consent based approach was workable. But it's my understanding that within Sweden the situation there was that the municipalities that agreed were already host to nuclear facilities.

So it kind of begs the question whether or not we're more likely to achieve a consent based approach or acceptance from a state or a government, local government, that has existing nuclear facilities. So the question to you, Mr.—General Scowcroft and Dr. Meserve, is when you were considering the recommendations within the BRC did you, were you, able to identify locations that currently host nuclear sites that also have the viable geologic potential to be a repository site? Was this part of the consideration when you advanced the concept of a consent based approach?

Mr. MESERVE. We did not undertake an examination of any particular site or of the siting factors. So we did not do any kind of a study as to the regions which might have appropriate geology to be a disposal facility. We viewed that as being outside our charge and was not something that we did.

I think it is, in fact, the case that communities that have experience with nuclear facilities and have had good experience with them may be more likely to be prepared to undertake becoming a storage or disposal facility. But I wouldn't prejudge that matter. I think that there may well be some other communities, although perhaps it's an easier task at a place that already has such experience because we have many such regions in the United States.

We have, you know, 65 locations where we have nuclear power plants and many other DOE facilities where the people have experience. So and the—although there are geologic constraints on the siting, there are, I think, diverse, my personal view is that there are diverse geologies that could be appropriate for a disposal facility in that it's not like there's a unique region in the United States is the sole one we could consider for a disposal facility. I think there are many areas that may well be appropriate.

Senator MURKOWSKI. Dr. Lyons, the comment has been made that the Administration has failed to meet the timeline for the implementation plan which I understand was due July 31. Also has failed to reply to this letter back in December of last year regarding a waste disposal fee. Can you give me some sense as to what actions the Administration has taken to date to follow up on the Blue Ribbon Commission recommendation?

I think the words that you used were you're developing a framework. What does that mean? When might we expect some kind of an implementation plan? Where are you?

Mr. LYONS. There's been very substantial work, Senator, within the Administration, within the Department toward developing a framework or a strategy for the Administration's response to the BRC. That work does continue. I think it's at least nearing the conclusion.

It's a complex issue, a very important issue. We're working very diligently to make sure that it is done in a very responsible way. The effort is very much ongoing.

As far as the letter that the General referred to, I'll need to check on that. I'm not aware of the details of this letter to which a response was not received. I'll certainly check on that and be

happy to either inform the committee and/or the General on the status of that.

As far as actions that we are taking. There's a wide range of R and D activities that we can undertake under existing legislation ranging from work on characterization on a generic basis for different repository media, working on some of the transportation issues, a variety of dry cask issues. But we are—our R and D now must be framed within the existing legislation.

Senator MURKOWSKI. If the implementation due date or the implementation plan due date was July 31 and you have now missed that by 2 months. When do you expect that you might be able to produce that?

Mr. LYONS. I can't provide a specific date, Senator, other than it is under careful review within the Administration. I think it will be soon. But I am not in a position to provide a specific date.

Senator MURKOWSKI. Do you know who in the Administration would be able to give us better guidance on that?

Mr. LYONS. It's a broad process within the Administration with many people involved. I'm giving you the best information I can, Senator. I don't know how to provide any more specificity.

Senator MURKOWSKI. If you can provide us a better estimate. Are we a month away? Are we 6 months away or a year away? I think that that would be helpful.

Mr. LYONS. We'll certainly work to provide that level of detail back to you.

Senator MURKOWSKI. Thank you, Mr. Chairman.

The CHAIRMAN. Senator Wyden.

Senator WYDEN. Thank you, Mr. Chairman.

It's been an excellent panel. I want to start with you, if I might, Dr. Meserve. I'm particularly struck.

You have expertise obviously in safety issues as a result of being at the NRC. I'm also very interested in the work that you've done with spent fuel pools because this has great implications. The work you all did after 9/11.

This has great implications for Fukushima. So I'm interested in following up with you on that as well. But I want to make my first question, the one that I think is central to this debate and that's really striking the balance.

You've got safety issues if you keep the waste onsite. You've got safety issues if you ship it somewhere. You have to be sympathetic to the fact that rate payers have paid tens of billions of dollars for a Federal high level waste repository. They haven't gotten one.

Tell me, in effect, you're in our shoes. How do you strike that balance between these safety issues which have to be paramount. There are really 2 types of them as I suggested and the question of the rate payer issue? How would you strike that balance?

Mr. MESERVE. I would say that I very much appreciate the question.

It is something with which the Nuclear Regulatory Commission has to grapple all the time in that there's certain requirements for assuring adequate protection of the public health and safety that are absolute minimum requirements regardless of cost that have to be fulfilled. If you—there are requirements you might impose that are above and beyond that level, you may well get to sort of looking

at the costs verses the benefit kind of analysis to make those decisions.

With regard to the spent fuel issue, I should say that we did recommend a storage facility. There would be costs and risks associated with the transport of the material twice in the sense that if one sends it first to a storage facility and then has to transport it a second time. So that there are some additional risks associated with transporting it twice rather than just directly to a facility that could take it for disposal.

The experience has been that after extensive work on transport that it is a remarkably record—it's a remarkable record of safety for that transport. DOE has done a lot of it. There's been some in the civilian sector as well.

That there are—that the benefits of having a storage facility are sufficiently great. We see that the additional risk associated with transport, in the view of the Commission, was vastly outweighed by the benefits of having a storage facility in order to meet the commitment to those communities that have, all they have is spent fuel that's sitting on them.

There are sites that may not be the optimal place to actually store it for long term. There are cost advantages for centralizing. There's research advantages. There's greater capability that could be at a centralized storage facility for monitoring and for undertaking R and D on spent fuel.

So there's lots of things that we think that, in the tradeoffs, that make that safety balance something that's worth doing with regard to a storage facility.

Senator WYDEN. Let me ask you one other one.

Senator Cantwell and I are particularly concerned in our part of the world because Hanford adjoins the Columbia River. The Columbia River is literally, our life blood in terms of economics and recreation and fish, a whole host of issues. Folks in our part of the world and also Idaho and South Carolina and other parts of the country were hoping that high level waste from the weapons programs, the nuclear weapons programs at Hanford and other locations, would go to a permanent repository. Obviously that has not happened. We have not seen it.

In your view, how important is it to make a priority out of ensuring that these defense wastes, these dangerous defense wastes—and by the way, Mr. Chairman, I would ask unanimous consent at this point to put into the record an article from Monday's Wall Street Journal which documents the continuing problems at Hanford.

The CHAIRMAN. We will include that.

Senator WYDEN. Thank you, Mr. Chairman.

The question for you, Dr. Meserve, if I could, is how important is it in your view that you prioritize this question of cleaning up the defense waste? It's important in our part of the world, Oregon and Washington. But I think it's important for many other Americans as well and to ensure that you have that priority by putting in place a permanent repository for these dangerous defense wastes.

Mr. MESERVE. Let's say that your question goes somewhat beyond what the Commission examined. I can give you a personal view, but I can't speak for the Commission.

I think it is very important for many of these DOE facilities to make sure that you have stabilized the waste in a fashion that they are not subject to escaping. Your concerns that you have at Hanford are ones that, of course, I and many others share that there's a lot of waste that's in single wall tanks with the tanks deteriorating. The danger that that material will escape. So it's very important, I think, to be—to get those materials under control, stabilized, vitrified and put into a form where they are protected from the environment.

I think the question that's a separate question, in my view, as to whether one it's essential that you then transport from someplace for ultimate disposal. If they, I think, that they could well be, once the material is stabilized could be stored at the Hanford site in a way that would be safe and secure.

I realize that there are legal prohibitions on that as a result of the consent agreements. So there are little dimensions to this issue. But I don't doubt that there is a way to be able to store those materials safely at the Hanford site awaiting their ultimate disposal. I completely agree that we do have to find a disposal facility.

The important thing is to find a way to stabilize them first.

Senator WYDEN. My time is up. I can assure you that storage on the banks of the Columbia River is not seen as a permanent solution in my part of the world.

Thank you, Mr. Chairman.

Mr. MESERVE. Nor should it be.

The CHAIRMAN. Thank you.

Senator Cantwell.

Senator CANTWELL. Thank you.

Dr. Meserve, I think you're, maybe you're, clarifying your last. You went from a possibility to not likely to no.

I mean, here's the issue. It's unacceptable for this waste to be stored at Hanford. It's unacceptable.

So last hearing I think you were here, General Scowcroft with our former colleague, Senator Domenici and Lee Hamilton and others, where we started talking about separating the defense waste from—well we got into a format where we couldn't get more feedback from the Blue Ribbon Commission. So I just want to highlight that we are talking about progress at Hanford in the context of they could have vitrification done by—starting the process by 2019.

So here is this military waste that is different and is not made for reprocessing in the context of the witches brew of materials that's there. So we're not going to reprocess it. So talking about retrieval of that particular waste is not, in my mind, a priority.

So why shouldn't we be looking at a separate treatment process or something that could be disposed of much more rapidly? Obviously we're, lot of people, are talking about salt formations is cheaper, readily available, something that could be done now. Why shouldn't we be looking at that?

General Scowcroft.

Mr. MESERVE. In fact our Blue Ribbon Commission report did recommend that that very issue of whether the defense waste

should be co-mingled with the spent fuel and go to a single repository is an open question in our view. The current policy is that all that material should go to a single repository.

We urged in our report that that issue be re-examined. That, as you indicate, the characteristics of the defense waste are different from the spent fuel. They would not be retrieved for possible re-processing. They're typically much cooler and therefore the challenge of disposal is much easier. So you can have options that might be available for that material that are not appropriate for spent fuel.

We did suggest that this was something that ought to be the policy that was established in the Reagan era that all these materials should go to a single repository is something that should be re-examined because the circumstances are now different.

Senator CANTWELL. General Scowcroft, did you want to add to that?

General SCOWCROFT. No, that's basically. We did not raise all that issue ourselves. We ran out of time, but did suggest that that be done.

Senator CANTWELL. We look at it as we have had this burden for 7 years in the Tri-Cities.

General SCOWCROFT. Yes.

Senator CANTWELL. Now we'd like to get to move on to the next chapter of economic development. So here we are about ready to get caught up in this large debate again when this could be separated out, dealt with and move forward. It is the largest cleanup site, probably in the entire world.

So getting it done and getting it tackled in the most efficient way, in the most cost effective way means not getting it tangled up in this larger debate. So I hope that we move forward on this.

I would just say, Mr. Chairman, I can't move forward on any legislation that doesn't have a path for separating the military waste and getting this done. This is what we need to do. We need to move forward on it.

So I thank the Chairman.

The CHAIRMAN. Senator Franken.

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

The Columbia River is a very important river. I appreciate that both members to my left here are concerned about that. We have a river that starts in Minnesota called the Mississippi River and we kind of think that's important too. I don't know if you've heard of it.

Yes, OK, good.

Prairie Island has a nuclear reactor there. I do want to acknowledge that the Secretary Ron Johnson of Prairie Island Indian Community is here today. Their storage is becoming a very urgent problem.

Dr. Lyons, you studied what was going on at Fukushima. There is real concern over spent fuel pools. There was a fear of the loss of the cooling water in those pools could result in some of the spent fuel catching fire and spreading radiation. Fortunately it didn't happen in that case.

But it does highlight the need, I think, for better monitoring of the pools to track the status of cooling water. Without cooling water there is, of course, the risk of overheating and a potential catastrophic release. That's why I think it's important to transfer that spent fuel from pools into dry cask storage.

My question is typically spent fuel sits in these pools for at least 5 years, sometimes much longer. But I understand that some spent fuel has been transferred in less than, sooner than, the 5 year waiting period. Can the current waiting period be shortened?

Mr. LYONS. Perhaps several responses, Senator Franken.

You mentioned the concerns at Fukushima on the status of spent fuel pools. You mentioned that as it turned out the pools were probably OK, but they did not have instrumentation to identify that. As you're probably well aware this is an NRC issue. But the NRC as they issued their first 3 orders post Fukushima one of those 3 orders demands improved instrumentation on spent fuel pools in the United States which I think is a very wise move by the NRC.

I think your specific question is can you transfer sooner than 5 years?

Senator FRANKEN. Yes.

Mr. LYONS. I might note that Sweden transports its fuel in dry casks 1 year after it's been moved from the reactor. So can you do it? Certainly.

Those are very specialized casks in order to maintain appropriate cooling during the transfer. So if your question is—to specifically answer your question, can you do it sooner than 5 years? Yes, but it takes specially developed casks to handle the cooling.

Senator FRANKEN. But we have those casks? I mean, they exist.

Mr. LYONS. I am not aware of the existence of those casks in the U.S. But the design exists.

Senator FRANKEN. The technology exists and OK.

Now I've seen at Monticello these above ground casks, but they can also be stored underground. Am I right?

Mr. LYONS. I may not have followed that question, sir.

The current—most of the casks in the country are the vertical, free standing.

Senator FRANKEN. Right.

Mr. LYONS. On a concrete pad. There are some exceptions to horizontal concrete emplacements as well that are also acceptable. But whatever they are they, of course, go through the NRC safety review.

Senator FRANKEN. OK.

Let me ask this. Can we—we're looking for a way to transport the spent fuel, if it's in casks, to a secondary location and then from the secondary location to a tertiary location eventually. Is that the basic?

Any one of you. That's a yes, right? I mean, that's a possibility that we're looking at.

Mr. LYONS. Yes, except it would be quite possible to request proposals from locations and States, maybe tribes, that are interested in providing both storage and repository which would avoid that interim transportation step. But that would remain to be seen as we move through siting processes.

Senator FRANKEN. OK.

Is there—I know my time is up. But can I just pursue this a little bit?

The—and I'm sorry I wasn't here for the other questions and testimony. Are we prioritizing now finding one enormous storage facility like Yucca or are we prioritizing a kind of interim plan to site some of this waste in regional areas and then ultimately going to one large site?

Mr. LYONS. Senator, I think the way I'd respond is that remains to be determined through the legislative process. The different possibilities you outlined, any one of those, would require a change in the Nuclear Waste Policy Act. So Congress and certainly the Administration looks forward to working with Congress would define the process that you have questioned here.

Senator FRANKEN. OK, because it seems to me that there's becoming some—I mean, there's a time question here. There's a question of when this stuff is going to happen. We have to determine what order we do things. What is the most feasible in the not so long term.

I mean, we have a short term problem. We're beginning to have a short term problem, certainly Prairie Island and certainly at other reactors in this country.

Mr. LYONS. Senator, can I respond to that?

Senator FRANKEN. Yes, yes.

Mr. LYONS. I think your comments highlight the importance of legislation. In order to move forward the Department has very limited options under the existing legislation.

Senator FRANKEN. Thank you.

The CHAIRMAN. Let me just ask a couple other questions either to this first one would either for General Scowcroft or Dr. Meserve, whoever would want to respond. I think it's an obvious point. But I think it's useful to put it on the record.

This consent based process that the Commission is recommending has the consent of the local jurisdiction and the State as an addition to the determination of technical suitability, as I understand it. There is no effort or no suggestion by the Commission that there should be less of a requirement for technical suitability either for a storage, location of a storage facility or location of a repository. We would not be in any way substituting the consent of the local jurisdiction for the requirement that it meet all the technical requirements.

Is that an accurate description?

General SCOWCROFT. Yes, I think that is an accurate description. In other words the suitability of the site would come first and then the consent process.

The CHAIRMAN. I appreciate that.

Let me ask Dr. Lyons one other question.

Current law and the Department's contracts with utilities commit the Department of Energy to dispose of the spent fuel, not stopping—not storing it until it can be reprocessed, but rather disposing of it. The Blue Ribbon Commission's report affirms that view. This legislation that I've introduced affirms that view.

The Department is clear, as I understand it, that reprocessing is not a preferable alternative to deep geologic disposal of spent fuel

at this time or in the foreseeable future. Is that an accurate interpretation of the Administration's position?

Mr. LYONS. Yes, Senator, that is an accurate interpretation. We have strong research programs that are looking at different reprocessing approaches. If reprocessing were to become possible within the country, I think it would be based on many considerations certainly environmental, economic, would be at least some of those considerations. Non-proliferation would be another important consideration.

With the technologies available today, yes, we see that for the foreseeable future the once through cycle moving directly toward disposal is the appropriate one.

If I could add just one comment though, sir, on the question you just asked about consent basing. One thing I found fascinating yesterday was the announcement from Canada that as they went out on a consent based approach for a repository they had 19 communities volunteer to be evaluated. That's at least—that's just the start of the process. But I found it very interesting.

The CHAIRMAN. I agree. But it was, as you point out, it's one of the first steps in a very multi-step process that they intend to go through to decide where to establish a repository.

Senator Murkowski, did you have additional questions?

Senator MURKOWSKI. Mr. Chairman, thank you.

I mentioned in my opening statement the District Court of Appeals remand on the Nuclear Regulatory Commission's waste confidence decision. Can I ask each of you whether or not you believe that this decision will have any impact on either new builds or relicensing of existing reactors? Where do you think this puts us?

Mr. MESERVE. Of course this action took place after the Blue Ribbon Commission completed its work. So I can give a personal view.

I have read in the trade press that the NRC has indicated it will not proceed with issuing further licenses having to do with either renewals or for new plants until the waste confidence issue is resolved. But the expectation was that they are proceeding expeditiously to try to deal with the issues that have been raised by the Court of Appeals. The expectation is that it will not adversely impact the domestic industry, that they'll be able to take action soon enough that this will not be an inhibition on the process with regard to renewals and new plants.

Senator MURKOWSKI. Dr. Lyons.

Mr. LYONS. Yes, Senator. It's my understanding that the NRC has laid out a 2-year schedule by which, through which they will be addressing the waste confidence issue. There's certainly been very strong statements in the trade press about the consensus within the NRC to move ahead on that schedule.

If that schedule is maintained and I certainly agree with Dr. Meserve that I don't think there would be a significant adverse impact on the types of decisions you questioned.

Senator MURKOWSKI. Dr. Meserve, you mentioned the construct within Senator Bingaman's legislation about the Administration's set up. You spoke about a corporate approach verses Federal agency. As we were discussing both on the appropriators and the authorizers, the 4 of us discussing how such an entity might be formed. We kept coming back to how do we insure, to the greatest

extent possible that there is an insulation from politics, from political manipulation.

Are you satisfied that as this is constructed in the legislation before us that we have found that, the right spot, in terms of political insulation or is this an issue that we never be able to separate ourselves from the politics?

Mr. MESERVE. Let me say that the thrust of my comments was directed, in part, at I think that the proposal in the legislation would have the new waste organization be a Federal agency which presumably puts it under more direct influence by political process than otherwise would be the case.

We had recommended a Federal corporation, in part, to provide greater insulation than would be—a Federal agency would have. But also there's an element of the task of dealing with spent fuel is a process that's going to take decades. Having stability in the policies and the management is important.

As I indicated in my testimony it was a concern that if it's a Federal agency then there will be a turnover or likely turnover of the people on a political cycle of, you know, every 4 years or sooner. That you may not have the kind of stability that you'd want to have in undertaking a long term task where you need a consistent strategy and knowledgeable people that have experience and sort of know where all the bodies are buried in terms of what problems that can arise.

So we came down on the side of a Federal corporation but I recognize that there is a need for balancing this independence verses accountability and, you know, that these are hard questions. I don't want to—this is an area where I think that further conversation and exploration would be appropriate.

Senator MURKOWSKI. Thank you, Mr. Chairman.

The CHAIRMAN. Senator Cantwell, did you have additional questions?

Senator CANTWELL. Just quickly, Mr. Chairman, if I could just to ask the panelists, Dr. Lyons or Dr. Meserve about whether you think cost effectiveness goes hand in hand with suitability of the site. I mean, I'm assuming that we should be looking at the cost effectiveness of different formations. I wanted to ask you specifically if you thought that salt formations could deliver a potential cost savings compared to other geological media types.

Mr. MESERVE. I think the way the current statute works for something that I would encourage the continuation is that there's some absolute minimum requirements that have to be satisfied regardless of cost. That then there may be some balancing around the edges of that. But that there are, I think the public would require assurance that you haven't taken the cheapest option because it's for reasons that it's cheap. That, you know, there are minimum.

Senator CANTWELL. We definitely know that well in the Northwest.

[Laughter.]

Senator CANTWELL. I think we have argued with every energy secretary that's come up with an idea of doing something on the cheap. So anyway.

Mr. MESERVE. But and we did not, as I mentioned earlier, look into the specifics of various types of formations. It is, in fact, the

only successful operating disposal facility for materials of a general nature, somewhat similar to spent fuel, is the waste isolation pilot project which is in salt, that's in New Mexico. Very successful facility.

That certainly might be a—well, one would certainly look at salt as among the options that would be appropriate for a disposal facility.

Senator CANTWELL. Doctor.

Mr. MESERVE. But we did not look into the details of the geologic materials.

Senator CANTWELL. Dr. Lyons, did you have anything to add to that?

Mr. LYONS. I appreciate your comment—your question, Senator.

It seems to me that as we launch into any process along these lines, utilizing the consent base, is the first question will be which communities respond with which formations. Then subsequent to that will have to be the detailed evaluation of that geologic formation. I think the first criteria is certainly going to have to be the safety evaluations. But I do agree with you that yes, cost should be folded in.

To me it's not the first order. The first order is going to be safety. But subsequent considerations, tiebreakers, if you will, certainly could involve cost as another issue. So environmental attributes may well be another. There may be many attributes that come into the evaluation as your proceed down through any selection process. Cost has to be one of them.

Senator CANTWELL. I was assuming suitability first and then looking at cost.

To Dr. Meserve's point, I mean the National Academy of Science is, I think, in the 50s recommended salt as one of the—because of its great attributes of disposal. Now we, as you said, have this one site that is focused on salt. Somehow we, because we were on to looking at retrieval as a different question for, you know, this other kind of waste, we got off of this track. So I hope that we will bring light to the fact that it really is a viable option.

So, thank you, Mr. Chairman.

The CHAIRMAN. Senator Franken, did you have additional questions?

Senator FRANKEN. Yes.

I, of course, favor a consent based approach. I just want to go on record as saying that.

I'm just sort of wondering. There were alternatives to Yucca before Yucca was chosen. Am I right?

Have those sites been considered again or we're not that far along in this process or where are we in terms of looking at what were the alternative sites to Yucca?

Mr. LYONS. There certainly were alternative sites that were evaluated under the original legislation in 1982. It was then the amendments in 1987 that basically said, thou shalt only study or consider Yucca Mountain. The geologies of the other sites would be part of the generic evaluation of geologies that we're considering.

But under a consent basis we're certainly not evaluating now any specific site. All we would be doing now is looking at generic issues associated with different geologies. Hopefully, in the very near

term working with Congress on legislation that moves forward that allows us to get into the consent process. Then utilize the consent process to identify prospective sites and begin the detailed evaluation of the sites that come through that process, sir.

Senator FRANKEN. OK. Assuming that we do the legislation that would allow that do we—there must have been very close scrutiny of these alternative sites. Are any of them particularly promising?

You know, what I'm kind of wondering about here is timeline. Because there's permanent and then there is permanent. You know, 200 years could be looked at as permanent but some of this stuff sticks around for a million years. That's really permanent. OK.

So and what I'm really thinking about is, and this is comes to cost effective. If you find someplace that's cool that works for 200 years and we've got reactors round the country that are—have too much waste, that they are storing too much waste and they are by the Mississippi River or by the Columbia River. We can say, OK, for the next—what is the process of thinking about this in terms of what we select.

What do we need first? What do we need to proceed to either going to regional? What is going to effectively solve the problems of the reactors that have more waste than they can deal with?

Mr. LYONS. As the BRC recommended, one can move much more expeditiously toward consolidated storage than a repository. The Administration is certainly interested in exploring consolidated storage options along with repository options.

But on a consent basis I believe the appropriate sequence of events has to be first, the proposals from the local, State, tribal entities, followed by the evaluation of the geology.

Now we have generic programs either within the Department, particularly on salt, where the U.S. is clearly the world leader on the suitability of salt formations.

We have international agreements where we are trying to draw on the experience, for example, Sweden and Finland, on granite based repositories, France and Switzerland on shale based repositories.

So there's a substantial body of knowledge that already exists on the utilization of different geologies. We would bring that information to bear as we move through the evaluation of sites that are proposed initially through the consent based process.

Senator FRANKEN. OK.

Thank you. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you all very much. I think this has been very useful testimony. We appreciate you taking time to be here.

We do have a second panel. Let me introduce them. Dismiss this panel. But thank you again for your great service to the country.

Panel 2 is—consists of Mr. Henry Barron, who is President and CEO of Constellation Energy Nuclear Group in Baltimore.

Mr. Geoffrey Fettus, who is the Senior Attorney with the Nuclear Program of the Natural Resources Defense Council.

We appreciate both of you being here. Why don't you go ahead and tell us the main points you think we need to understand about this issue. We're anxious to hear your views, starting with you, Mr. Barron. Go right ahead.

**STATEMENT OF HENRY B. BARRON, PRESIDENT AND CHIEF
EXECUTIVE OFFICER, CONSTELLATION ENERGY NUCLEAR
GROUP, LLC, BALTIMORE, MD**

Mr. BARRON. Thank you, Chairman Bingaman, Ranking Member Murkowski, Senators Franken and Cantwell. I appreciate this opportunity to speak today about the recently introduced Nuclear Waste Administration Act of 2012.

I'm Brew Barron. I'm the President and CEO of Constellation Energy Nuclear Group and also a member of the Nuclear Energy Institute's Executive Committee. 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 and this year's Appropriations process.

While the proposed legislation represents a positive start to restructuring the Federal program, it does not yet fully address the comprehensive changes we believe are needed. Under the law the DOE should have begun removing used fuel from commercial nuclear power plant sites 14 years ago. DOE continues to collect over \$750 million per year from nuclear utilities and consumers and the fund accrues almost \$1 billion in annual investment income on the remaining balance of over \$26 billion.

The collection of nuclear waste fees continues even though the DOE, without any technical basis, terminated the Yucca Mountain repository project in 2010. The industry has sued the DOE challenging the continued collection of the nuclear waste fees in the absence of a Federal program. The Blue Ribbon Commission on America's Nuclear Future recognized the urgency of addressing the past failures of the Federal program and developed 8 key recommendations that the industry supports.

It's the industry's view that consolidated storage is the quickest route to the Federal Government to begin moving used fuel from commercial and Federal sites around the country and to limit the increase in damage awards beyond the \$20.8 billion estimated by the DOE through 2020. Consolidated storage would be an appropriate use of resources and a prudent financial investment while continuing to preserve geologic disposal. Industry is confident that if a consolidated storage program begins in 2013 a consolidated storage facility can be operational by 2020.

We should not lose sight of the fact that consolidated storage is not a complete answer. A geologic repository will be required and should be pursued simultaneously and vigorously with the development of a consolidated storage facility. However, repository, regardless of whether it is a restarted Yucca Mountain project or a new site, will take much longer than a consolidated storage facility and is highly dependent on available funding. Once a consolidated storage facility is operational priorities should be given to removing used fuel from shut down commercial sites that no longer have an operating reactor.

A new Federal management entity with the operating characteristics of a private corporation, with a clear vision and accountabilitys and obligations to its investors should assume responsibility for this program. Congress and the Administration should retain oversight authority. But this role should be structured to avoid cre-

ating an impediment to the efficient operation of a new management entity.

The Board of Directors should be appointed by the President with the advice and consent of the Senate for terms that would span at least 2 Presidential Administrations and the Chairman of this Board should be elected by its members.

The Chief Executive Officer should be appointed by the Board and not subject to the political uncertainties associated with Presidential appointments so that he or she can focus entirely on 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 proposed legislation should be altered in this regard.

To avoid perpetuating the current funding limitations of the Federal used fuel management program, the new management entity should be given unrestricted access to the nuclear waste fees and fund with Congressional oversight of efficient use of these funds continuing. This will enable the new entity to manage and fund the development of storage and disposal facilities consistent with standard industry practices for other large scale nuclear safety related processes.

A consent based siting process is essential to developing enduring local and State support for new used nuclear fuel management facilities. This process should not be prescriptively defined but permitted to develop organically among the interested parties. Willing communities and States should be allowed to reach their own conclusions regarding whether such a facility is a benefit or a burden and negotiate accordingly.

Success will be measured with an agreement among the interested parties that is ultimately legally enforceable.

The proposed Nuclear Waste Administration Act of 2012 is a significant step forward and would attract broad stakeholder support. Immediate action is necessary to establish a sustainable program and reduce the liabilities that the taxpayer—to the taxpayer as quickly as possible. Congress must act.

Thank you for the opportunity to testify. I'll be pleased to answer your questions.

[The prepared statement of Mr. Barron follows:]

PREPARED STATEMENT OF HENRY B. BARRON, PRESIDENT AND CHIEF EXECUTIVE OFFICER, CONSTELLATION ENERGY NUCLEAR GROUP, LLC, BALTIMORE, MD

Chairman Bingaman, Ranking Member Murkowski, members of the committee, thank you for the opportunity to speak today about the recently introduced Nuclear Waste Administration Act of 2012. 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 and this year's appropriations process. While the proposed legislation represents a positive start to overhauling the federal program, it does not provide the comprehensive changes that are needed.

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 68,000 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, the Department of Energy (DOE) already should have moved more than 25,000 MTU of reactor fuel from our sites and should be moving an additional 3,000 MTU per year.

Consumers of electricity generated at nuclear energy facilities have committed more than \$34 billion since 1982 to the Nuclear Waste Fund for the federal program that was supposed to have begun removing used fuel from commercial nuclear power plant sites 14 years ago. The Department of Energy continues to collect more than \$750 million per year from consumers, and the fund accrues almost \$1 billion in investment income on the remaining balance of over \$26 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.

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.

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:

- America must have a durable policy supported by a dedicated and sustainable infrastructure to manage used nuclear fuel responsibly.
- America 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, especially the need to build public trust in the systems and facilities ultimately developed.

Legislative action is needed to put such an enduring policy and program in place.

The Blue Ribbon Commission on America's Nuclear Future (BRC) was chartered by the Department of Energy in 2010 and was tasked with developing a path forward for the nation's used fuel and high-level radioactive waste management program. The Blue Ribbon Commission concluded that the United States needs a new, integrated strategy for managing the back end of the nuclear fuel cycle, including a new approach to siting nuclear waste storage and disposal facilities. The BRC outlined eight key recommendations, which are consistent with the aforementioned principles for a stable used fuel management policy and program, and have the potential to create a stable and enduring program that could be supported by all stakeholders:

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

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 BRC report describes how taxpayers, through payments from the taxpayer-funded Judgment Fund, are paying for court-awarded damages from DOE's partial breach of its contracts with electric companies. DOE estimates that the damage awards from the Judgment Fund will total \$20.8 billion if the federal government begins accepting used fuel in 2020. This expense, for which the taxpayer receives no benefit, is in addition to monies paid by consumers of electricity produced from nuclear energy into the Nuclear Waste Fund. The BRC estimates that the damage awards associated with the DOE's breach may increase by as much as \$500 million for each year after 2020 that DOE does not begin to accept used fuel. It has become virtually impossible for the DOE to begin to meet its obligation to move used fuel before 2020, given the absence of any federal program.

The industry believes that a multi-pronged approach is necessary if the federal government's used fuel and high-level radioactive waste program is to be rebuilt and stakeholder confidence restored. This multipronged approach should include the following elements:

- Legislation instructing and funding DOE or the new management entity to establish one or more consolidated storage facilities for used nuclear fuel while simultaneously making substantial progress towards developing a repository for ultimate disposal
- The establishment of new organization dedicated solely to implementing the waste management program and empowered with the authority and resources to succeed
- Access to the funds that consumers have provided, and continue to provide, for the purpose of managing high-level radioactive material.

The Need for Consolidated Storage

Consolidated storage, as recommended by the BRC, is the quickest route for the federal government to begin moving used fuel from nuclear energy facilities and to stem the increase in damage awards beyond the estimated \$20.8 billion through 2020. 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.

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, and restoring faith in the federal program, paving the road for a repository to eventually be opened. By reducing liability, consolidated storage will free up resources and better enable the federal government to pursue and complete the ultimate goal of geologic disposal.

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 publicly called for action to implement the BRC recommendations and, specifically, development of a consolidated storage facility.

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 supports the concept of a federal corporation as outlined in the BRC final report. The operating characteristics of a new management entity must more closely resemble those of a corporation with a clear mission and obligations to its investors rather than a federal agency in order to succeed. 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.

Similar to commercial companies, the chief executive officer of the new management entity should be selected and appointed by a board of directors. As the BRC recommends, 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 and the chairman of the board should be elected by its members. It is imperative that the CEO not be subjected to the political uncertainties associated with presidential appointments so that he or she 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 well-illustrated 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.

The Nuclear Waste Administration Act of 2012 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. If implemented as proposed, both the Nuclear Waste Administration's senior management and the members of the oversight board would likely be replaced with every new administration, and the history of the federal government's failure to meet its statutory and contractual obligations would likely be repeated.

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 2012 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. With a \$26 billion balance in the Nuclear Waste Fund, almost \$1 billion accruing in interest and approximately \$750 million in Nuclear Waste Fees being deposited annually, funding for the government's program 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. 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, a new management entity must be given unrestricted access to the Nuclear Waste Fees and the Nuclear Waste Fund with Congressional oversight of the efficient use of these funds continuing. This will enable it to appropriately manage and fund the development of storage and disposal facilities consistent with standard industry practices for other largescale nuclear safety related projects. The current legislation achieves this goal for the Nuclear Waste Fee payments. However, it could be enhanced with respect to access to the Nuclear Waste Fund.

Geologic Disposal is Critical

The Nuclear Waste Administration Act of 2012 goes a long way towards achieving the multi-pronged approach outlined above. Ideally the elements of that approach (new management entity, surety of funding, consolidated storage while vigorously pursuing disposal) would be implemented simultaneously to create a solid foundation for a sustainable used nuclear fuel management program.

The eventual completion of the Yucca Mountain repository (an endeavor that will cost more than \$13 billion, according to a 2007 DOE report) or the siting and construction of a new repository will most likely take more than two decades depending on Congressional funding. 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 \$500 million and industry estimates that such a facility could be opened by 2020 if work begins in 2013. If instructed by Congress to pursue consolidated storage, DOE or a new management entity could use this facility 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 where it would be stored until a final disposal or alternate disposition pathway is available.

We should not lose sight of the fact that consolidated storage is not a complete answer. A geologic repository will be required and should be pursued simultaneously with the development of a consolidated storage facility. Attachment 1* provides a comparison of hypothetical timelines for the development of a consolidated storage facility and the Yucca Mountain project assuming that both programs are underway in 2013. As the attachment illustrates, the completion date for Yucca Mountain would 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 the program could efficiently deploy the funding necessary (approaching \$2 billion annually) to complete licensing and construction in the near term.

Priority to Shutdown Sites

Once a consolidated storage facility has been authorized, the industry and the federal management entity should collaborate to ensure that transportation issues, including efficient ordering of used fuel acceptance from commercial sites, are appropriately addressed. 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 2012, has numerous advantages. It would permit the 10 shutdown sites, which in many cases have only used fuel storage remaining at the site, to be fully decommissioned and the land to be used for more beneficial 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 approximately \$8 million 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 2012 implements, 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 as well as questions about how it would be implemented.

A consent-based siting process should not be prescriptively defined, 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. 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 compensation. The management entity and the federal government should not attempt to predetermine the "burden" that a community or state should accept or impose restrictions on the development of a consolidated storage facility that are linked to milestones related to a disposal program. To do so would be contrary to the nature of a consent-based process. Congress and the new management entity or DOE must be willing to let communities and states reach their own conclusions about whether or not it is a burden to host a new facility and to let them identify the framework and restrictions under which they wish to operate. 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.

Closing

The Nuclear Waste Administration Act of 2012 is a significant step forward and, with the enhancements as discussed, it could create a sustainable program that would garner wide stakeholder support. The most important point, however, is that immediate action is necessary to establish a sustainable program and reduce the liabilities for the taxpayer as quickly as possible. Congress must act. 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 CHAIRMAN. Thank you very much.
Mr. Fettus, why don't you go ahead?

* Attachment 1 has been retained in committee files.

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

Mr. FETTUS. Good morning.

I'm Geoffrey Fettus, an attorney with the Natural Resources Defense Council. I want to thank the Chairman and the Ranking Member for inviting us to share our views on S. 3469. I've submitted written testimony to be included in the record and I'll focus briefly today on 4 points.

Point 1.

Chairman Bingaman wisely focused the bill on creating a new pathway to develop repositories. Repositories are the only technically, economically and morally viable solution. NRDC strongly supports that effort for the development of a new and improved legislative pathway.

Turning to point 2.

We fully support Chairman Bingaman's caution that any temporary storage facility must not become a permanent one. In significant measure S. 3469 is well constructed as it bars any future nuclear waste administration from taking title to and storing spent fuel before ratification of the consent agreements described in section 304. A provision that bars moving forward with interim consolidated storage facilities before a repository program is under full development wisely puts the horse before the cart. It ensures precisely the linkage the Chairman describes as necessary.

But this sensible linkage, we think, is undone by the current form of section 306(b) which provides an exception for 10,000 metric tons of spent nuclear fuel. Indeed the only situation where we see merit in a pilot project for storage and we do see that there could be merit, is to address stranded spent fuel at the 9 closed reactor sites or for spent fuel that fails to meet certain safety thresholds. Such a site would have to be in a hardened building like the outhouse facility in Germany.

Potential 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 is already in place. Along with the consent necessary for hosting nuclear facilities in the first instance, nothing like this has been suggested. We urge the committee that simply providing an expedient storage option for industry that solves no problem like the stranded fuel or addresses no serious safety concerns fails to heed the careful caution expressed by Chairman Bingaman.

Turning to point 3.

The understanding that the polluter pays the bill for the contamination it creates is properly embedded in S. 3469. This bipartisan concept has a long history in American law. We support its inclusion here. Perpetuating this requirement that the industry must invest in solutions to the problems it creates is appropriate and any relaxation of any such requirement would result in immediate objection from NRDC and I would imagine many others including the taxpayer.

Finally, point 4.

Section 304 is the heart of S. 3469 and is most attentive to the BRC's strong recommendation of a consent based approach that we've talked about today. Indeed we applaud the general thrust. But any consent based approach will enjoy a 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 anachronistic exemptions from environmental law are at the heart of state and public distrust of both government and commercial nuclear facilities. If EPA and the states had full legal authority and could treat radio nuclides, as they do other pollutants, clear cleanup standards could be promulgated. We could be farther along in remediating the toxic legacy of the cold war, mentioned by both Senators Cantwell and Wyden today.

Further, we could avoid some ongoing disputes over operations at commercial nuclear facilities even the BRC recognized this as it noted that New Mexico's hazardous waste regulation of the WIPP facility is a critical element of public acceptance.

Any regulatory change of this magnitude would have to be harmonized with NRC licensing jurisdiction over nuclear facilities and EPA's existing jurisdiction over radiation protection standards. But such a process is certainly within the capacity of those Federal agencies. Some states would assume environmental jurisdiction over radioactive material, others might not. But in either event improved clarity in regulatory structure and a meaningful state oversight role would allow, for the first time, consent based and transparent decisions to take place in the matter of developing repositories.

We address closed fuel cycles and other matters in our written statement. I'm happy to take questions on those as well.

But I'll close with one overarching premise that we hope guides congressional work on this matter. Years or decades from now others will face the precise predicament we face today unless Congress creates a transparent, equitable process with strong environmental standards that can't be manipulated in order to license a site that may not be suitable. Chairman Bingaman has made a really, in our estimation, a superb and meaningful start with S. 3469. With the addition of our recommendations, we are optimistic that meaningful solutions lie ahead.

As I stated to the BRC almost 1 year ago in Denver, I can't guarantee that NRDC's recommendations will result in a solution. But I can point to strong evidence that following a course similar to the last 2 decades results in failure.

I'd like to close with one personal note. As a former New Mexican, thank you Senator Bingaman for representing me brilliantly in Congress for all these years and also for my time in DC, for your just extraordinary staff.

So, thank you again for this opportunity to testify. I'm happy to answer your questions.

[The prepared statement of Mr. Fettus follows.]

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

Introduction

Mr. Chairman and members of the Committee, thank you for providing the Natural Resources Defense Council, Inc. (NRDC) this opportunity to present our views on S. 3469, 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.

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. We have worked on nuclear waste issues since our founding, and we will continue to do so.

NRDC commends the Chairman's focus on three fundamental principles that must be adhered to if America is ever to develop an adequate, safe solution for nuclear waste. First, Chairman Bingaman's S. 3469 incorporates the principle that the waste from the nation's nuclear weapons program and its commercial nuclear power plants must be buried in technically sound deep geologic repositories, permanently isolated from the human and natural environments. That principle for disposal is consistent with more than 50 years of scientific consensus and, most recently, the views of President Obama's bipartisan Blue Ribbon Commission (BRC).¹/ No other solutions are technically, economically or morally viable over the long term and NRDC strongly supports the development of a science-based repository program that acknowledges the significant institutional challenges facing spent fuel storage and disposal.

Second, we support Chairman Bingaman's careful analysis that any "temporary" storage facility must not become a permanent one. This is a powerful principle that should guide the legislative process. NRDC concurs with the Chairman's caution that whatever case can be made for interim storage can be done "only as an integral part of the repository program and not as an alternative to, or de facto substitute for, permanent disposal." Consistent with thirty years of national policy and the purpose of the Nuclear Waste Policy Act (NWPA), 42 U.S.C. § 10131(b)(1), Senator Bingaman has provided a crucial linkage between developing storage facilities and final repositories. We are, however, concerned that the pilot program offered in S. 3469 upsets this precisely-defined architecture. The evidence of the past 30 years shows that legislative efforts that sever such linkages between development of storage and final repository sites inevitably doom the process and virtually guarantee a repeat of the mistakes made in the failed Yucca Mountain effort.

Third, properly embedded in S. 3469 is the fundamental concept that the polluter pays the bill for the contamination that it creates. This bipartisan concept has a long history in American law and it should remain in full force in any new nuclear waste legislation. Federal assumption of the waste burden is an extraordinary boon to the nuclear industry, a benefit enjoyed by no other electricity-producing industry. At minimum, perpetuating the requirement that the industry must invest in the solution is appropriate and any relaxation of such requirements would result in immediate objection from NRDC and a host of others.

Chairman Bingaman has made a laudable effort and turned some of the stronger ideas in the recent BRC report into legislative language. We support fundamental components in the proposed bill, dispute other parts, and have several key suggestions for expansion and refinement of S.3469. But the Chairman's emphasis on the necessity of repositories and the need to link any potential storage site with the development of a disposal site is of lasting value. Any legislation that fails to adhere to these concepts will prolong the failures of the past 30 years in developing solutions for nuclear waste.

Five Recommendations

Today, in commenting on specific sections of S. 3469, I offer five recommendations for ensuring the success of any legislative outcomes-(1) recognize that repositories must remain the focus 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 S. 3469; and (5) exclude polarizing closed fuel

¹ President Obama's "Blue Ribbon Commission on America's Nuclear Future—Report to the Secretary of Energy, January 31, 2012" (hereafter "BRC Report" or "Final Report").

cycle and reprocessing options from this effort to implement the interim storage and ultimate disposal missions.

Importantly, our view on each area is premised on a single overarching caution: in order to avoid repeating the mistakes of the last three decades, Congress must create a transparent, equitable process incorporating strong public health and environmental standards insulated from gerrymandering or other distortions in order to ensure, at the conclusion of the process, the licensing of a suitable site (or sites). What follows are NRDC's detailed comments on S. 3469 and recommended prerequisites for establishing a protective and robust nuclear waste storage and disposal process.

RECOMMENDATION 1—THE NECESSITY OF REPOSITORIES

Titles I and II—Comments on Sections 101-206

Title I of S. 3469, in significant measure, recognizes our generation's ethical obligation to future generations regarding nuclear waste disposal. But we suggest an explicit adoption of the first 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: financial security, environmental protection, and public health. After more than 55 years of failure, policy makers must look with clear eyes at the history of U.S. nuclear waste policy, an exercise that President Obama's Blue Ribbon Commission failed to do. The BRC recommended geologic repositories and S. 3469 suggests a new path to arrive at them, and we concur with and support efforts to develop geologic repositories. But we emphasize today that the record created by this hearing should fully reflect the story of how the Environmental Protection Agency (EPA), the Department of Energy (DOE), the Nuclear Regulatory Commission (NRC), the Justice Department, and the U.S. House and Senate together corrupted the process for developing and implementing licensing criteria for the Yucca Mountain repository. Failure to understand that history will doom any new effort.

While the BRC recognized that the 1987 amendments to the NWPA were "highly prescriptive" and "widely viewed as being driven too heavily by political considerations," those observations are insufficiently critical assessments of what actually occurred. We recommend that Congress be clear about what happened to avoid repeating the mistakes of the past. Put bluntly, first DOE and then Congress corrupted the site selection process leading to Yucca Mountain as the only option. 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 media alternative. 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 fairly play out, would have been consistent with elements of the adaptive, phased, and science-based process to which the BRC referred.

But instead, what happened was that DOE first selected sites that it had pre-determined. Then in May of 1986 DOE announced that 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). Next, 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 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 that the proposed Yucca site remained the sole site), and eviscerated public support for the Yucca Mountain project.

Briefly, with respect to Title II and the 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 (Energy Research Development Agency, DOE and the NRC) make the case that an alternative institutional vehicle for nuclear waste disposal is necessary. However, we note that any such 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.

ess (for example, in support of the initial guidelines), but it is clear to us that NEPA has full application to the newly proposed Nuclear Waste Administration.

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, the full suite of environmental laws should have full application. We will address this issue in more detail when discussing Section 304. As a last note to this Title, the meaning of Section 102(4) should be expanded and clarified to remove the word "centralized" and the words "safe, environmentally sound and publicly acceptable" storage should be inserted to address several of the concepts we will detail in the testimony that follows.

RECOMMENDATION 2—CREATE A COHERENT FRAMEWORK BEFORE COMMENCING THE NUCLEAR WASTE SITING PROCESS

Title III—Functions, Sections 301-308

A. Comments on Section 305—To avoid repeating the failure of the proposed Yucca Mountain process, we urged the BRC and we urge this Committee now to be explicit and state clearly in legislation that both the standards for site screening and development criteria be in final form before any sites are considered. We also urge that generic radiation and environmental protection standards be established prior to consideration of any sites. S. 3469 has gone much of the way toward structuring such a result, but we have some specific concerns.

Section 305 directs EPA to adopt, by rule, broadly- applicable standards for protection of the general environment from offsite releases from radioactive material in geologic repositories. Further, Section 305(b) directs NRC to then amend its regulations governing the licensing of geological repositories to be consistent with any comparable standard adopted by EPA. These requirements and the phasing of the agency actions are appropriate (first EPA sets the standards and then NRC ensures its licensing process meets those standards). However, the timeline required in S. 3469—not later than one year after the enactment of this Act and not later than 1 year after the adoption of generally applicable standards by EPA—provides inadequate time for the agencies to properly do their work. After repeated and flawed attempts to establish Yucca Mountain standards, we are optimistic that EPA will not need two decades and can get the job done in a reasonable amount of time, if given adequate resources.^{2/}

As this Committee is aware, at this time EPA has few staffing resources, consultants, or budget for standards preparation. It would take at least a year after enactment and subsequent Congressionally-appropriated funds to properly staff the task. EPA would then have to do a rulemaking notice, preferably including hearings/meetings, develop a proposed rule for public comment, and then go about the task of issuing a publicly informed final rule. A constraint of one year (for both EPA and NRC) invites a rushed, inadequate job that hamstring both agencies and likely denies the states, tribes, and public a meaningful opportunity to fully inform the process.

Additionally, while the requirement to promulgate generic standards is welcome, care must be taken to insulate any site standard, development or regulatory framework from adverse pressures applied by the Office of Management and Budget, the Department of Justice, DOE and the NRC. Indeed, it is our assessment that past administrations' failures to protect EPA from just such pressures is why the development of the EPA standard setting process was so problematic. The one-year time frames invite just such pressure and we urge, in the alternative, Congressional attention to ensure EPA has adequate resources and time for the task.

²EPA repeatedly issued standards concerned more with licensing the site than establishing protective standards. EPA's original 1985 standards were vacated in part because EPA had failed to fulfill its separate duty under the Safe Drinking Water Act, 42 U.S.C. §300h, to assure that underground sources of water will not be "endangered" by any underground injection. *NRDC v. EPA*, 824 F.2d 1258 (1st Cir. 1987). EPA's second attempt to at setting standards that allow for a projected failure of geological isolation was again vacated, this time by the United States Court of Appeals for the D.C. Circuit. The D.C. Circuit found EPA's Yucca Mountain rule (and the corresponding NRC standard), which ended its period required compliance with the terms of those rules at 10,000 years was not "based upon or consistent with" the recommendations of the National Academy of Sciences as required by the 1992 Energy Policy Act and therefore must be vacated. *Nuclear Energy Institute, Inc. v. EPA*, 373 F.3d 1251 (2004).

RECOMMENDATION 3—A FUNDAMENTAL CHANGE IN LAW IS NECESSARY

A. *Comments on Section 304—Siting Nuclear Waste Facilities and Amending the Atomic Energy Act*

1. The Necessary Change—Section 304 is the heart of S. 3469 and there is much to applaud here. The Section is attentive to BRC's recommendation in its Final Report of a "consent-based, adaptive, and phased approach" for developing geologic disposal options. We agree with the general thrust of such a conceptual framework for developing repositories, but any such "consent-based" process will enjoy a far higher probability of success in concert with a simple, but profound, change in the law. As the BRC's Final Report acknowledges but fails to meaningfully discuss, current federal law, including aspects of the Atomic Energy Act (AEA), has the effect of preempting almost all forms of state regulation over a high level radioactive waste facility and, indeed, over regulation of radionuclides in general.

Congress should, via S. 3469 and after appropriate hearings on the proper scope, remove once and for all the AEA's exemptions for radionuclides from our nation's water and hazardous waste laws. These anachronistic exemptions from environmental law are at the heart of state and public distrust of both government and commercial nuclear facilities. A great deal of the structure of S. 3469 can help build a better nuclear waste management system, but we submit that decades from now the Nation will return to the same predicament (no matter how improved the architecture of said system) unless States are provided with meaningful regulatory authority under existing environmental laws.

2. Section 304(a)—Section 304(a) sets 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, and on what terms, they will host a nuclear waste facility is an important step forward that has not heretofore existed in nuclear legislation.

3. Section 304(b)—Section 304(b) wisely provides for consistency with Section 112(a) of the NWPAA but requires the issuance of guidelines not later than one year after the date of enactment of this Act. As with Section 305, we think one year an inadequate time frame. We support such consistency with the enumerated provisions in Section 112(a) and agree that additional attention is important to detailed considerations such as minimizing impacts of transportation and handling and to not unduly burden states storing significant volumes of defense wastes is important. But it is our strong recommendation that more time should be provided for the agency to get up and running before final guidelines become statutory time restrictions. Indeed, such guidelines must comply with NEPA, and ensuring those guidelines are in place prior to consideration of any storage or disposal site could go a long way in avoiding the mistakes of the past.

4. Section 304(c)—Section 304(c) sets up a process for determining candidate sites that, in general terms, could chart a process arriving at protective disposal solution, if it is: (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. However, the Environmental Assessment required in Section 304(c)(4) should explicitly be termed an Environmental Impact Statement to ensure there is no confusion regarding NEPA obligations. 6

5. Section 304(d)—Section 304(d) sets forth requirements for characterizing sites and for consulting agreements with potential nuclear waste recipient states. If performed in a careful, phased fashion prior to embarking on the final site suitability determination delineated in Section 304(e), such a characterization process could allow for the phased and adaptive approach recommended by the BRC. Key decisions could be revisited and modified as necessary along the way rather than being pre-determined, and the process itself could be flexible and produce decisions that are responsive to new information and new technical, social, or political developments.

6. Section 304(f)—Section 304(f) seeks to provide legislative text responsive to the BRC's recommendation that any successful approach must be consent based—in the sense that affected communities will have an opportunity to decide whether to accept facility siting decisions and will retain significant local control. Several components in the proposed text merit attention. If such a provision were enacted into law, allowances for any recipient state to have regulatory oversight authority, and authority over operational limitations, are crucial recognitions of the need for meaningful state oversight that have been missing from previous efforts at nuclear waste disposal. Equally important is the statutory requirement that Congress must ratify (and, assuredly, the President must therefore sign) any consent agreement. And finally, the statutory direction that neither party (the federal or state government)

may unilaterally amend or revoke the contract is a concept that NRDC fully supports.

But for all those laudable qualities, we believe the suggested consent agreements will not solve the fundamental problem facing nuclear waste disposal. We suggest Congress, with its firm understanding of federalism, 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 be central in any prescription for a successful repository and waste storage program. The BRC recognized as much and noted federal and state tensions are often central in nuclear waste disputes. 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. Nevertheless, 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 the law 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 304(f) is enacted into law, we think it likely disputes will continue unchecked unless Congress avails itself of the opportunity to finally suggest a decades-overdue change in the law which we will now explore in more detail.

A meaningful and appropriate role for states in nuclear waste siting can be accomplished in a straightforward manner 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 this Committee 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 RCRA as critical positive element in the development of the currently active site. Final Report at 21./3/ 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. 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

³The BRC Report omits discussion of the fierce effort New Mexico waged to obtain RCRA authority over the site.

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.

In short, Section 304(f) is a detailed attempt to remedy regulatory deficiencies that 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 contract could potentially give a state some measure of comfort that the agreement it had painstakingly negotiated will hold fast. But there would be nothing stopping Congress from revisiting this law, ratifying the consent agreements 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 negotiation 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.

RECOMMENDATION 4—ADDRESS STORAGE IN A PHASED APPROACH CONSISTENT WITH
THE ARCHITECTURE OF THE BILL

Comments on Section 306

Chairman Bingaman introduced S. 3469 by echoing the BRC and cautioning that unless there is direct, clear linkage between progress on a storage facility and progress on a repository, providing temporary storage could thwart progress toward developing repositories and reduce incentives to find a long-term solution." The Chairman stated:

The Commission makes a strong case for interim storage, but "only in the context of a parallel disposal program." I agree with that conclusion. Interim storage can play an important role in a comprehensive waste management program, but only as an integral part of the repository program and not as an alternative to, or de facto substitute for, permanent disposal.

We agree. A link between storage and disposal is essential. We support the precise language in the text that "[t]he 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 puts the horse before the cart and ensures just the linkage the Chairman understands and the BRC acknowledges is necessary. But this sensible process is undone by Section 306(b), which provides an exception for 10,000 metric tons of spent nuclear fuel.

The exception opens the door to a storage facility that fails to follow the phased process so carefully constructed in the earlier sections. Rather than prematurely bypassing a careful process that can arrive at protective, environmentally sensible and scientifically defensible solutions, NRDC urges spent fuel storage efforts to focus on vigorous efforts by industry and by appropriate regulatory authorities to ensure that all near-term forms of storage meet high standards of safety and security for the decades-long time periods that interim storage sites will be in use. While NRDC can agree with the overall concept of consolidated interim storage for a measured amount of spent fuel that meets strong safety criteria (moving fuel from seismically active areas, for example) and removing the stranded fuel from decommissioned plants, we can only do so after the introduction of a phased approach, as the general architecture of S. 3469 suggests.

Indeed, the only situation where NRDC sees merit in a pilot project(s) is to address the current total stranded spent fuel at the nine closed reactor sites, accommodated in a hardened building at one or more sites that follows the example of the Ahaus facility in Germany. Potential volunteer sites that have already demonstrated "consent" are operating commercial reactors. Far less in the way of new infrastructure would be required and the capacity for fuel management and transportation is already in place, along with consent necessary for hosting nuclear facilities in the first instance.

Indeed, 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 secu-

rity risks that interim wet storage poses. Instead, 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 years. Such a legislative direction would go far in addressing a number of public safety and environmental harms and do less damage to the careful architecture of this bill. With less fuel in the pool, an accident scenario in which cooling is lost would be less problematic through the extended time allotted by the slower boiling rate in the less crowded pools and the radiation source term would be reduced. The now standardized practice of onsite, hardened dry-cask storage poses clear benefits in terms of the mitigation of an accident or act of terrorism, either of which could lead to the release of quantities of radiation exceeding a reactor core melt.

Moreover, as we and many others in the environmental and public health community noted to the BRC, current practice at U.S. reactor sites allows the spent fuel pools to be filled to near capacity, with most pools containing five times as much fuel as the reactor itself. We disagree with the Commission's unfounded conclusion that it sees "no unmanageable safety or security issue associated with current methods of storage (dry or wet) at existing sites in the United States." Final Report at 32. This counter-factual conclusion is not borne out by the post-9/11 National Academy study of spent fuel storage, or by the recent post-Fukushima nuclear safety reviews at U.S. reactors that reveal significant deficiencies in back-up spent fuel cooling and instrumentation capability under the conditions of a station black-out. Particularly with respect to the 23 boiling water reactors (BWRs) in the United States, supplying emergency make-up water to a boiling pool inside the secondary containment can itself threaten, via excess heat and condensation, the performance of other critical reactor safety systems. Further, the elevated pools themselves are vulnerable to structural damage and debris from hydrogen explosions in a severe accident scenario, as occurred during the Fukushima accident.

In short, unprotected or lightly sheltered spent fuel pools outside containment are vulnerable to disabling of their cooling systems in a severe natural event—such as a tornado, earthquake, fire, or flood—and to direct destruction via a terrorist attack. On September 11, 2001, Flight 11 passed directly over the Indian Point nuclear reactors and spent fuel pools, containing tons of discharged fuel in wet storage. None of the above-enumerated threats could be considered "well-managed" under current NRC regulations or current independent licensee efforts. Congress should confront this matter directly and require unpacking of excess fuel from the pools and into hardened onsite storage. A pilot storage project that addresses none of these issues merely serves to undercut the meritorious sections of S. 3469.

Title IV—Funding and Legal Proceedings

Sections 401 and 402 set forth terms of ensuring the "polluter pays principle" is appropriately enshrined in the law. Section 404 appropriately provides for judicial review of final actions under S.3469. Section 406(b)(1)—which requires settlement of all nuclear waste breach of contract claims as a condition precedent before the Nuclear Waste Administration takes title to and stores any nuclear waste for the contract holder—merits particular positive notice as a thoughtful method that will ensure settlements and allow the program to proceed in an effective fashion. Section 406(d) bars new contracts before the Commission has licensed the Administrator to operate a repository or storage facility. This provision wisely sidesteps the liability issues of the past two decades and creates an incentive for all parties to work for a strong, protective nuclear waste storage and disposal program.

RECOMMENDATION 5—REJECT CLOSED FUEL CYCLES AND REPROCESSING

As a final matter, we applaud the focus in S. 3469 on storage and disposal rather than dragging into this proposed legislation the red herring that is reprocessing. Chairman Bingaman noted:

The 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.

We concur. We also note that the analysis of advanced fuel cycle technologies contained in the BRC Final Report was inadequate, and its broad sweeping conclusions are not supported by a more rigorous comparison of current once-through versus advanced closed fuel cycles. As we demonstrated time and again to the BRC in our

comments (see NRDC November 1, 2011 comments at 7-14), one can determine the relative attractiveness and economic outlook of various reactor and fuel cycle concepts and the likelihood that various options will be implemented in the United States.

Consequently, rather than promoting a large research and development (R&D) program covering a wide range of alternative fuel cycles, Congress should look at the reality of the federal budget over the next decade and narrow the options and focus on those that are most promising. Given that there is no current or prospective closed fuel cycle that can economically compete with the current open cycle, Congress should prioritize R&D funding to support technologies that can mitigate climate change in the near-term at the least cost. This excludes government funded R&D on closed plutonium fuel cycles.

Additionally, we are opposed to using (or attempts to use) the Nuclear Waste Fund to support development or deployment of reprocessing and fast-reactor technologies. Separating responsibility for waste management/disposal from other fuel cycle functions is key to garnering support and public trust from NRDC and many others, and we support S. 3469's careful attention to this matter.

Conclusion

S. 3469 has several important provisions that can help build a better nuclear waste management system, but decades from now others will face our current predicament unless Congress fundamentally revamps how nuclear waste is regulated and allows for meaningful State oversight by amending the AEA to remove its express exemptions of radioactive material from environmental laws.

Thank you again for this opportunity and I am happy to answer any questions.

The CHAIRMAN. Thank you both for your excellent testimony. Let me start with a couple of questions.

Mr. Barron, many utilities have filed breach of contract claims against the Federal Government for failing to take nuclear waste as they committed to. In your view, are utilities, nuclear utilities, going to be willing to settle those breach of contract claims if Congress enacts something like we're talking about here with a Nuclear Waste Administration that is able to provide storage for the utility's spent fuel before a repository is available?

Mr. BARRON. What the utilities would like or what they expect is that the performance of removal and taking title to fuel in exchange for the fees that pay be accomplished. If that is being accomplished through transportation to a consolidated interim storage facility then the utility is no longer incurring damage. There is no longer an obligation.

It is simply a question of a performance standard that wasn't met. Damages being incurred by the utility. The rate payer having to pay those damages.

Once there is performance under the contract such that there are no longer any damages, there are no more damage claims to be paid.

The CHAIRMAN. I guess you made reference to the importance of going ahead and insuring that the waste at shut down reactors be disposed or stored first or disposed of first. Are utilities willing to renegotiate the fuel acceptance schedule to achieve that result? Because I understand there's a fuel acceptance schedule that has already been established that does not contemplate that order.

Mr. BARRON. No, actually to the contrary. Within the standard contract it provides for the Secretary to give priority to fuel which is located at reactors that—at sites that do not have an operating—

The CHAIRMAN. So that's already in the—

Mr. BARRON. The contract today would permit that to occur and as utilities, as an industry, we have concurred that we would not argue with such a determination.

The CHAIRMAN. OK.

Mr. Fettus, thank you for your comments. I know you were instrumental in this litigation that Senator Murkowski has referred to a few times here about in before the U.S. Court of Appeals for the District of Columbia with regard to the whole issue of confidence.

I guess I would ask you to elaborate a little bit on this whole issue of linkage. One of the disputes that we've had or not disputes but disagreements, I would say, is whether or not we need to make provision in the law, some type of legal linkage in the law, that ensures that progress is made toward establishment of a permanent repository. As work goes forward with, or even storage of waste goes forward, at a storage facility or whether that can be left to a negotiation between the Federal Government and the individual jurisdictions involved.

Do you have a strong view on that?

Mr. FETTUS. I do, Senator.

I think you asked the question to the previous panel in a precise and correct fashion which is what would the position of a state be? What would their ability be to enforce if, for example, they made the deal to be a storage facility through a consent process and asked for some sort of meaningful oversight authority. Then the repository process for a whole host of reasons, that are maybe for example, not dissimilar to the last 2 decades, blows up.

That state, unless they want to take advantage of throwing fuel over the borders which I don't think is a likely option, really is in a dreadful position. Why I think your caution about the linkage must be in the law and not left to negotiation is absolutely correct because for that precise reason. States will have no, in our Federal system, states will have no significant or serious option to protect themselves if they make such deals without 1, meaningful regulatory authority and 2, a linkage that you've created in your very sequenced and adaptive legislation that allows for the process to go forward.

Meaning, you cannot store more than—let's say there's a deal made on moving some safety, you know, spent fuel near seismic areas or near the Mississippi River or and if you—and also the stranded fuel, that's done. But at a certain point it stops unless there's a repository program ongoing. That has to be in the law or states will be essentially out of luck.

So I think you've done it precisely right with the inclusion of what we suggested in our testimony.

The CHAIRMAN. Senator Murkowski.

Senator MURKOWSKI. Mr. Barron, let me ask you the same question that I asked of the previous panel. That again relates to the D.C. Court of Appeals remand. What we heard from Dr. Lyons and General Scowcroft was that they didn't feel that this decision was going to impact negatively or delay any new builds or relicensing of existing reactors.

Would you agree with them or do you have a different opinion?

Mr. BARRON. My opinion would be that I would agree with them. It's not clear. I mean, legally the NRC cannot issue those licenses that would depend on that waste, the confidence determination. I think there's still some work going on within the legal part of the

NRC to determine exactly which types of licenses those are. That's not completely clear yet.

The NRC does recognize that a lot of work has been done that supports a waste determination process. They think they can draw on that work. Within the 24-month period that Dr. Lyons spoke to, the NRC believes that they can produce a new rule.

That would not surprise me. However if from there, there were further appeals on that just as the process moves along but it does not appear at this time that that particular action will have a detrimental effect. It's conceivable. But at this time does not appear to be probable.

Senator MURKOWSKI. Senator Cantwell focused on defense waste. In her opinion the need to address that specifically can—will either of you comment on her proposal that that be clearly defined, that the defense waste is addressed in a manner specific or certain to any legislation that might move forward.

Mr. BARRON. As an industry we have no opposition to the co-mingling of the waste nor would we necessarily be opposed to a separation of those. I think at the root of the problem whether it's defense waste or commercial waste, is the necessary actions that will take to get a repository open in either case. Energy is focused on that, on removing whatever impediments there might be either to implementing the repository program as is defined under current law or creating a new law that would create an alternative to repository and have within it those provisions that would enable it to be successful. That is the underpinning of the problem that has to be addressed whether you're talking commercial nuclear waste or defense wastes.

Senator MURKOWSKI. Mr. Fettus.

Mr. FETTUS. Thank you, Senator Murkowski.

There was an interesting day during one of the hearings of the Blue Ribbon Commission where 2 very estimable people from very disparate sides of the chess board on these issues, Beatrice Brailford of the Snake River Alliance in Idaho and Steve Kraft of the Nuclear Energy Institute. Two very fine people, both completely agreed that the waste should be co-mingled, that there's—that while there could be reasons in the structure of the fuel and the heat loading that there could be different repositories. What we need to have going is a repository program.

So we have great faith that the kind of process that Senator Bingaman has set up here to move forward on the BRC's recommendations is—meets the needs of both the environmental community as well as the nuclear industry. That that's where the focus needs to be. Both high level waste from defense processes, from spent nuclear fuel reprocessing and spent fuel, need to go in a repository.

Senator MURKOWSKI. Thank you, Mr. Chairman.

The CHAIRMAN. Senator Portman.

Senator PORTMAN. Thank you, Mr. Chairman.

I apologize I was not here earlier. I was hoping to come to here Brent Scowcroft as well as you gentlemen. If I could just on the record congratulate General Scowcroft and also Congressman Hamilton for their good work. Thank them for their service. Say that

I hope that we'll listen to some of the recommendations which seem so sensible.

One of the ones that they recommended was that Congress get its act together with regard to the Appropriations process. I was frankly surprised to learn that the Nuclear Waste Fund which collects about \$750 million bucks a year has a balance of \$26 billion. Really because of the fight over disposal and specifically over Yucca Mountain, those funds have not been dispensed.

I assume, Mr. Barron, as you look at the industry and its future that that's a concern of yours as well. Could you comment on that?

Mr. BARRON. Yes.

The funds have been appropriated for a particular purpose. They are obligated both by statute and by contract for that particular purpose. The treatment of those funds as otherwise discretionary in terms of how they are made available just doesn't seem to have a rationale to it.

The revolving or the capital waste fund that is suggested in this legislation, we believe, is the right way to go. But there shouldn't be the restrictions that subjected to the annual appropriations and authorizations process that are proposed in this legislation.

We think it's a good step forward. But it has not quite arrived in terms of making the funds available that would enable any entity to meet any obligations that it enters into.

Senator PORTMAN. For you is this a matter of providing more certainty as to the liabilities and the costs?

Mr. BARRON. I think all the pieces have to go together. I don't think we can separate the waste fund from an effective management entity that has the wherewithal and continuity of leadership to be able to deliver it from the need for a consent based siting. The package of items that were put together and were put together by the BRC very well, really all fit together. We can't really isolate one as being key, more key than the other ones.

Senator PORTMAN. One of the things that they also talked about was in their report and I assume it's been part of your testimony today. I apologize I didn't hear it all. But that there needs to be an implementation plan, the Administration was supposed to have released its plan in July.

I assume you've talked about this already and again, I apologize if I didn't hear your testimony earlier and either of you can respond.

But one, why do you believe that the Administration has not responded including to the inquiries from the BRC?

Second, what impact does this have on the industry in particular? Are you looking for more leadership from the Administration to, again, provide a way forward?

Mr. BARRON. I think it's important that we get leadership, seriousness about this problem from the Administration, the establishment of the BRC which as was previously stated, clearly was a Blue Ribbon panel. I think they made a very good effort in putting that together and charging them to come up with these recommendations.

My hope that that attention and that priority that they put on when they established that panel can continue and that we can get

actions and support from this Administration or the next Administration on those actions.

Senator PORTMAN. Mr. Fettus, are you eager to see the implementation plan or do you think that's not an important part of moving forward?

Mr. FETTUS. I think it's going to be very important when the Administration comes forward with it they answered a substantial number of questions from Senator Murkowski earlier in the hearing. We'd like to see it too.

Senator PORTMAN. Thank you, gentlemen.

Thank you, Mr. Chairman.

The CHAIRMAN. Senator Murkowski, did you have additional questions?

Senator MURKOWSKI. I did not, thank you.

The CHAIRMAN. Let me thank these 2 witnesses. I think it's been excellent testimony.

Let me indicate we have 3 statements for the record.

One from the National Association of Regulatory Utility Commissioners.

One from Energy Communities Alliance.

One from the Eddie Lee Energy Alliance.

We will include those in the record.

The CHAIRMAN. Again, we appreciate the good testimony. I think it's been a useful hearing.

That will conclude our hearing.

[Whereupon, at 11:15 a.m. the hearing was adjourned.]

APPENDIXES

APPENDIX I

Responses to Additional Questions

RESPONSES OF HENRY B. BARRON TO QUESTIONS FROM SENATOR CANTWELL

I believe a key part of solving our nation's nuclear waste challenges is to recognize that we need to prioritize addressing certain types of waste first—such as waste stranded at shutdown reactor sites and defense waste that has built up for decades. Not all nuclear waste is the same, and I do not plan to support any legislation that does not remedy the mistakes of the past that has precluded more feasible solutions for our nation's defense waste.

As I'm sure you know, Hanford is the largest nuclear cleanup site in North America. We have been diligently trying to clean up this site, an incredible complex and costly endeavor. While it is a constant struggle to keep this monumental effort on track, I'm proud of incredible efforts of Hanford workers and we are making real progress. But we need an end point. Once we clean up and isolate this toxic legacy, we need a place for it to go.

It is unacceptable to me, and to the constituents I represent, for Hanford to be the de facto repository for 90 percent of the nation's high-level radioactive defense waste.

While proud of the service to help secure our nation during World War II and the Cold War, the Tri-Cities region has contributed and sacrificed enough during the 70 years in which a large portion of my state has been put off limits to economic development or other uses.

The problem as I see it is that our nation's nuclear waste policy treats civilian nuclear waste and defense waste the same, with defense waste almost as an afterthought. That's a problem for two important reasons: First, our defense waste is not suitable for on-site storage and Hanford's Waste Treatment Plant is scheduled to produce vitrified high level waste in 2019. And second, defense waste is a witch's brew of nuclear byproducts that can never be reprocessed for electricity generation. Therefore, it can be disposed of permanently, possibly in ways that are faster and cheaper than civilian waste.

Question 1a. Do you agree that nuclear waste that we would never want to retrieve but can be permanently disposed of should be treated differently?

Answer. Nuclear waste, both commercial used fuel and defense related materials, must be disposed of and can be disposed of in the same geologic repository as was the plan with the Yucca Mountain repository.

There are two issues to consider in the context of retrievability: nuclear fuel recycle (only applicable to commercial used nuclear fuel) and safety.

I agree that the geologic disposal facility for defense wastes should not have a retrievability requirement associated with it other than for safety considerations. In regards to safety, the very successful Waste Isolation Pilot Plant addresses this issue in the governing regulations, 40 CFR 194.4(b)(1), by requiring the DOE to retrieve as soon as practicable and to the extent practicable any waste placed in the Waste Isolation Pilot Plant (WIPP) if the EPA Administrator revokes WIPP's certification. A similar approach for the disposal of the remaining defense related wastes would be acceptable.

Imposing a retrievability requirement on commercial used fuel for the purpose of recycling is also not necessary for near term disposal efforts. If the search for a second repository, other than Yucca Mountain, is conducted it would be unfortunate to reject out-of-hand an otherwise acceptable site because it would be impossible to retrieve a waste package from that site for the purpose of recycling.

Lack of retrievability does not eliminate the potential for recycle of commercial used nuclear fuel. Even if the United States decides to begin recycling commercial used nuclear fuel after placing it in a repository, there will still be more than enough used fuel available for recycling without having to retrieve it from the repository. Given the time frames involved in restarting and completing the Yucca Mountain repository, or developing, planning, licensing, and constructing a new repository, it is doubtful that significant amounts of used fuel will have been placed in a repository by the time recycling technologies could be deployed at commercial scale.

Question 1b. Have you studied whether permanent disposal in salt formations could be a cheaper and more readily available alternative to other geological storage options?

Answer. Geologic disposal in salt formations is technically feasible for both defense wastes and commercial used nuclear fuel. However, I am unable to offer an opinion about whether disposal in salt could be less expensive in the long term relative to other geologic formations. At this point, the quickest path to a deep geologic repository would be the continuation of the Yucca Mountain project. Extensive studies and testing have already been performed at the site and the NRC review of the license application should be completed. If the search for a second repository begins, the total cost to dispose of both commercial and defense related materials should be one of the factors used to choose a site in a willing host community and state.

Question 1c. How do we make sure that defense waste does not get lost in the nuclear waste debate this time around?

Answer. Increased focus on this issue by both the Administration and Congress is needed to ensure that both defense waste and commercial used nuclear fuel are properly disposed. The industry believes that consolidated storage, as recommended by the Blue Ribbon Commission, is the quickest route for the federal government to begin moving used fuel from nuclear energy facilities and to stem the increase in damage. 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.

Question 2. Unfortunately, the requirement that nuclear waste be retrievable for up to a century blocks many potential sites. There are communities that would welcome our nation's nuclear waste; but while they are located near technically-sound, cost-effective geologic formations, high level waste placed there cannot be retrieved.

So maybe it's time to reconsider this retrievability requirement. The mere possibility of future uses for the nuclear waste should not block progress on siting a nuclear repository and geologically disposing of our nation's nuclear waste. This is especially true for defense waste, which has even lower prospects for reuse than commercial waste.

Question 2a. Given the bleak prospects for recycling or otherwise using nuclear waste, should this retrievability requirement block siting a repository in a technically-sound, cost-effective place that is willing to accept waste?

Answer. As discussed above in the answer to question 1a, retrievability should be a consideration in repository design. However, retrievability should not be the sole consideration and should not necessarily block the siting of a repository in a willing host community and state.

Question 2b. If the insistence on this retrievability requirement for commercial waste continues, do you think we ought to consider a separate repository for defense waste without such a restriction—a potential dual-path forward envisioned by the original Nuclear Waste Policy Act of 1982?

Answer. The issue of retrievability should not stand in the way of the disposal of either commercial used fuel or defense wastes and retrievability should only be one of many considerations in repository design and should not necessarily block the siting of a repository in a willing host community and state.

Question 3. After 25 years of getting nowhere with political wrangling, I believe we need to correct our course and get back to the basics of science, economics, and consensus-building. We need to find places with technically-sound cost-effective geologies that want to host a repository. And we need to ensure that these new places have the capacity to take all of our nation's nuclear waste, both commercial and defense.

The Yucca saga illustrates the problem of allowing politics to overwhelm science and economics. And why we need to get back to the basics envisioned in the original Nuclear Waste Policy Act of 1982. We know that the geologic formations at Yucca do not necessarily offer the most cost effective solution, and there are still questions about whether they even offer a safe, technically-sound environment for long-term geologic storage. Yucca is tectonically active, with both seismic and volcanic activity.

Faulting, or shifting of tectonic plates, could allow water to corrode the waste packages and transport nuclear material well beyond the repository. Volcanic activity could potentially disperse radionuclides into the atmosphere and ground water.

While the risk of volcanic activity at Yucca is highly uncertain, the Yucca site is bounded by numerous known faults: among others, the Solitario Canyon and Sundance faults to the west and the Ghost Dance fault to the east.

In 1992, a 5.6-magnitude earthquake originated just 13 miles south of Yucca. And in June 2002, a 4.4-magnitude earthquake struck slightly further to the east of Yucca. These events are not exactly reassuring to the millions of Americans downstream or downwind of Yucca.

Question 3a. Do you see the Blue Ribbon Commission recommendations and Chairman Bingaman's legislation as a renewed call to correct our course? Choosing science, economics, and consensus over the failed political wrangling of the past 25 years, going back to many of the principles of the original Nuclear Waste Policy Act of 1982?

Answer. The industry applauded the efforts of the Blue Ribbon Commission and believes it successfully outlined a path forward that Congress and the Administration should follow. The industry also compliments Chairman Bingaman for proposing legislation that would implement a portion of the Commission's recommendations and for continuing the dialogue concerning used nuclear fuel management. The nuclear industry is committed to participating in this dialogue and to creating a sustainable federal used fuel and defense waste management program. The most appropriate path to a science based determination of the acceptability of the Yucca Mountain repository is to enable the nation's nuclear safety regulatory body, the Nuclear Regulatory Commission, to complete the review of the Yucca Mountain license application.

Completing the licensing process, regardless of the outcome, would offer valuable scientific and regulatory insights and data for future disposal efforts in addition to the vast amounts of scientific data already accumulated for the Yucca Mountain repository.

Question 3b. For such a complex challenge as disposing of nuclear waste for millions of years, do you believe technical considerations should trump political ones to the maximum extent possible?

Answer. As stated in this question, the challenge of used nuclear fuel disposal is a complex one and isolating the federal program from undue political influence will be essential to the long term success of the program. To this end, the industry fully supports the Blue Ribbon Commission's recommendation for the formation of a new management entity to assume responsibility for this program. The new management entity must have guaranteed access to the nuclear waste fund and the nuclear waste fees, and the authority to pursue options within the bounds of US laws and regulations.

If additional repositories are sited, technical considerations will bear heavily on the feasibility of a site. However, political considerations will also have to be addressed through an open and collaborative process where the willing host community and state have the right to shape the program in a consent-based process.

Question 4. I would like to discuss the economics of different geologic formations. While there are multiple ways and places to secure nuclear waste safely, the costs of doing so are different. I believe that these costs should be considered when selecting among technically-sound sites.

A recent study compared the costs of repositories capable of holding 83,000 metric tons of heavy metals in different geologic media. It found that siting a repository in volcanic tuff or crystalline rock costs two to three times that of a repository in massive salt formations.

These extra costs came primarily from the development and characterization of the site, more expensive and complex surface and subsurface facilities, and extensive packaging, barriers and shields necessary to keep the waste intact. Because of the potential cost savings, I think we need to take a hard look at salt formations throughout the country as potential sites for a repository.

Question 4a. Do you believe that cost should be an important factor when selecting among sites that can safely dispose of waste and have support within the community?

Answer. If a second repository siting process is begun, cost should be considered when looking at various sites, but it is only one of many considerations. For example, the cost to the taxpayer for the disposal of defense wastes may be reduced if the cost of developing a single repository for both commercial and defense wastes is partially offset with funds from the nuclear waste fund. For this reason, consideration of a single geologic repository should remain an option.

Question 4b. Do you agree that salt formations could deliver potential cost savings compared to other geologic media types and deserve consideration?

Answer. I am unable to offer an opinion on the potential cost savings of a particular geology compared to another. As previously discussed, cost should be only one factor in the site determination process for additional repositories.

Question 5. It is simply unacceptable for Hanford to become the de facto repository for 90 percent of the nation's high-level radioactive defense waste. Back in the 1980's when a number of repository sites were analyzed, Hanford placed last in terms of cost-effectiveness.

These high costs were in part due to the extraordinary technical challenges. According to a National Research Council report, the high internal stresses within the basalt formation at Hanford poses a risk of "rock bursts" when opened up to atmospheric pressure. And the U.S. Geological Survey found that the high water pressure in the deep aquifer poses the danger of catastrophic flooding.

Question 5a. Do the cost-effectiveness of meeting technical requirements and inherent suitability of a site go hand-in-hand?

Answer. As previously discussed, cost will only be one factor in the site determination process if a search for additional repositories is initiated.

Question 5b. Do you agree that cost-effectiveness is an important consideration that partially takes the suitability of a repository site into account?

Answer. I agree that cost effectiveness will be an important consideration. However, it must be viewed holistically with other considerations.

Question 6. I am pleased to see that this legislation repeals the limit on the amount of waste able to be disposed at a repository. This was a well-kept secret about Yucca. Even if Yucca were licensed under current law, it would not be able to accommodate all of our nuclear waste, neither civilian nor defense. I believe a litmus test for any new federal nuclear waste policy is whether it can dispose of our nation's nuclear waste—all of it.

This has been one of my biggest concerns with the Yucca proposal. Of the 70,000 ton limit for waste at Yucca, only 7,000 tons were set aside for defense waste. Of that 7,000 tons for defense waste, only 4,667 tons would be allocated for high level waste.

Although the total number of tons of high level defense waste is somewhat uncertain, just three percent of DOE's inventory of vitrified High Level Waste would be accounted for under the planning basis of 4,667 tons of heavy metal for DOE High Level Waste when compared to over 170,000 tons of heavy metal DOE reprocessed fuel.

In practice, a higher percentage could probably be accommodated because a portion of the radioactivity has already been lost. According to an historical estimation method, the limit of high level defense waste at Yucca would still not have been able to accommodate the high level waste at Hanford because this limit accounts for less than half of all defense high level waste.

An even smaller percentage of Hanford waste would have been able to go to Yucca under current law. Any way you cut it, there simply is not enough capacity without a repeal of this limit.

Question 6a. Are there any technical or safety reasons for the current limit of 70,000 tons? If so, does this mean that we need multiple repositories to accommodate all of our nation's waste?

Answer. There are no technical or safety reasons for the current legal limit of 70,000 MTU for the Yucca Mountain repository. Both the Department of Energy and the Electric Power Research Institute have estimated that the Yucca Mountain repository could hold more than 125,000 MTU. Therefore, if the Yucca Mountain repository is opened and the legal limit of 70,000 MTU is lifted, it would be decades before a second repository would be needed, if at all.

Question 6b. Why do you think over half of our nation's high level defense waste was left out of the plan at Yucca?

Answer. I am not in a position to offer an opinion as to the legal capacity of defense related waste in the Yucca Mountain repository. However, if the Yucca Mountain repository is opened and the legal limit of 70,000 MTU is lifted, there would be ample space available for both commercial and defense related wastes.

RESPONSES OF HENRY B. BARRON TO QUESTIONS FROM SENATOR BARRASSO

Question 1. In your testimony, you state that a new Federal used-fuel-management corporation is needed. Specifically, you say that: "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." A. Why do you believe a new Federal corporation is needed to manage the nation's nuclear waste? B. Is there any reason

why DOE couldn't manage the nation's nuclear waste if given sufficient authorization by Congress? If we pursue a consent-based process, won't we significantly reduce the likelihood that political pressure will interfere with siting decisions?

Answer. A. There are two reasons why a federal corporation solely dedicated to implementing the used fuel management program is needed: sustainable access to its dedicated funding and sustainability of dedicated program leadership essential to accomplishing the mission.

The Nuclear Waste Fund, as originally conceived, was intended to be dedicated to the federal used fuel program. However, since 1982 there have been changes to the federal budget process that now make the used fuel management program compete with the rest of the federal appropriations process for receiving its own funds. Properly written, new legislation should dedicate the Nuclear Waste Fund, Fees and earned interest to a new federal corporation for the purpose for which it was paid.

A dedicated federal corporation where the CEO answers to the Board of Directors and is not subject to the political appointment process would be able to create an organization that has a single focus on its mission, safety culture, management systems and processes. Regardless of its mission as established under the law, the current administration has demonstrated that an administrative department is not sufficiently insulated from the political cycles to support a program of this importance and duration.

Answer. B. As the history of the federal used fuel management program demonstrates, further insulation from political uncertainties is needed. While the consent-based siting approach might help with reducing political pressures on siting a second repository, it is not sufficient. For example, the consent-based approach does not address access to dedicated funding—a key issue for the sustainability of the program.

Question 2. In your testimony, you state that: "Industry supports the concept of a federal corporation as outlined in the [Blue Ribbon Commission's] report." How widespread is industry's support for the creation of a new organization to manage our nation's nuclear waste?

Answer. Industry support for a federal corporation as outlined by the BRC is widespread as evidenced by industry testimony to the BRC and the diverse support from NEI members companies and NEI's board of directors, as well as the National Association of Regulatory Utility Commissioners.

Question 3. In your testimony, you state that the Federal government: "should not attempt to . . . impose restrictions on the development of a consolidated storage facility that are linked to milestones related to a disposal program." If the Federal government does not set any conditions on temporary storage facilities, how do we prevent temporary storage facilities from effectively becoming a long-term solution?

Answer. Included in my testimony was a comparative evaluation of the schedules for a consolidated storage facility and a restarted Yucca Mountain project. This timeline demonstrates that even with the most ambitious plans for both projects, a consolidated storage facility is the fastest way to begin to move used fuel and lessens the liabilities for the federal government. But these two processes need to move ahead in parallel, as consolidated storage is not the final solution. As constructed above, a federal corporation dedicated to the achievement of both these objectives provides the greatest potential for success.

One of the tenets of the consent-based approach is flexibility to work with interested communities to form an agreement that considers local concerns, including the fear of becoming a de facto long-term storage facility. Certain negotiated timelines or incentives could be included to allay those fears. But any direct linkage between the siting of repository and the siting of a consolidated storage facility risks further delays in an already stymied program.

Question 4. In your testimony, you explain that taxpayer liability for DOE's failure to remove nuclear waste from nuclear energy facilities will reach \$20.8 billion in 2020. You also say that: "By 2040, the damages paid by the taxpayer could be as much as \$30 billion," and that: "Consolidated storage . . . is the quickest route for the federal government to . . . stem the increase in damage awards." Are there other reasons for the Federal government to develop consolidated storage facilities? If so, what are they?

Answer. The primary motivation for a consolidated storage facility is to have a facility where the federal government can move used fuel to and begin to meet its statutory and contractual obligations until a repository is available. Once the facility is constructed and operational for this purpose, I can envision the facility having additional benefits. For example, there is currently a research effort underway to study the long term effects on used fuel of extended storage in dry casks beyond the time periods originally contemplated. Additional research facilities may be nec-

essary for this effort and a logical location for such facilities could be the consolidated storage facility.

RESPONSES OF LIEUTENANT GENERAL SCOWCROFT AND RICHARD A. MESERVE TO
QUESTIONS FROM SENATOR CANTWELL

Question 1. I believe a key part of solving our nation's nuclear waste challenges is to recognize that we need to prioritize addressing certain types of waste first—such as waste stranded at shutdown reactor sites and defense waste that has built up for decades. Not all nuclear waste is the same, and I do not plan to support any legislation that does not remedy the mistakes of the past that has precluded more feasible solutions for our nation's defense waste.

As I'm sure you know, Hanford is the largest nuclear cleanup site in North America. We have been diligently trying to clean up this site, an incredible complex and costly endeavor. While it is a constant struggle to keep this monumental effort on track, I'm proud of incredible efforts of Hanford workers and we are making real progress. But we need an end point. Once we clean up and isolate this toxic legacy, we need a place for it to go.

It is unacceptable to me, and to the constituents I represent, for Hanford to be the de facto repository for 90 percent of the nation's high-level radioactive defense waste.

While proud of the service to help secure our nation during World War II and the Cold War, the Tri-Cities region has contributed and sacrificed enough during the 70 years in which a large portion of my state has been put off limits to economic development or other uses.

The problem as I see it is that our nation's nuclear waste policy treats civilian nuclear waste and defense waste the same, with defense waste almost as an afterthought.

That's a problem for two important reasons: First, our defense waste is not suitable for on-site storage and Hanford's Waste Treatment Plant is scheduled to produce vitrified high level waste in 2019. And second, defense waste is a witch's brew of nuclear byproducts that can never be reprocessed for electricity generation. Therefore, it can be disposed of permanently, possibly in ways that are faster and cheaper than civilian waste.

Question 1a. Do you agree that nuclear waste that we would never want to retrieve but can be permanently disposed of should be treated differently?

Answer. The Reagan Administration decided that defense and civilian waste should be disposed of together with commercial waste ("commingled") in "one or more of the repositories to be developed under [the Nuclear Waste Policy Act]" (the default option in the Act) rather than using a separate defense-only repository developed outside of the context of the Act. The properties of defense waste and civilian waste are different from each other, which could open up different disposal options that would still meet generally applicable regulatory standards, and, as you note, it is highly unlikely that defense waste will ever be considered for reprocessing. Moreover, the circumstances are now different from those at the time of the Reagan Administration decision, including the facts that the development of a repository under the Nuclear Waste Policy Act has been delayed and that the Department of Energy has entered into various agreements requiring the removal of defense waste by dates certain. These considerations argue for a reconsideration of the decision to commingle the waste. However, the difficulty to date of establishing even a single repository and the cost of licensing two repositories are considerations that point to maintenance of a commingled repository. The BRC did not make a recommendation to resolve the issue, but urged the Administration "to launch an immediate review of the implications of leaving responsibility for disposal of defense waste and other DOE-owned waste with DOE versus moving it to a new waste management organization."

Question 1b. Have you studied whether permanent disposal in salt formations could be a cheaper and more readily available alternative to other geological storage options?

Answer. Geology is a very important factor in disposal and will affect costs. However, the BRC discussed the various geologic options in only a general way, without evaluating their relative merits:

The rock types that have been considered for a deep geologic repository have included bedded and domed rock salts, crystalline rocks (i.e., granite or gneiss), clay, shale, volcanic tuffs, basalt, and various other types of sedimentary rocks. Each of these rock types and their particular geologic environments have advantages and disadvantages from a strictly technical per-

spective, and different geologic settings and emplacement methods may be better for particular types of waste. However, many or all of them may ultimately be found to demonstrate acceptable performance for a wide range of wastes.”

We note, however, the Waste Isolation Pilot Plant for defense transuranic waste is in salt and has been very successful to date.

Question 1c. How do we make sure that defense waste does not get lost in the nuclear waste debate this time around?

Answer. The Nuclear Waste Policy Act of 1982, as amended, does address defense wastes. Any future legislation should do so as well. Moreover, as noted above, the BRC recommended reexamination of the commingling decision.

Question 1d. By not addressing defense waste specifically, does that imply that you and the Blue Ribbon Commission believe defense waste should be treated separately from civilian waste?

Answer. As discussed above, the BRC recognized the potential to treat defense and civilian wastes separately and urged the Administration to launch an immediate review of the matter.

Question 2. Unfortunately, the requirement that nuclear waste be retrievable for up to a century blocks many potential sites. There are communities that would welcome our nation’s nuclear waste; but while they are located near technically-sound, cost-effective geologic formations, high level waste placed there cannot be retrieved.

So maybe it’s time to reconsider this retrievability requirement. The mere possibility of future uses for the nuclear waste should not block progress on siting a nuclear repository and geologically disposing of our nation’s nuclear waste. This is especially true for defense waste, which has even lower prospects for reuse than commercial waste.

Question 2a. Given the bleak prospects for recycling or otherwise using nuclear waste, should this retrievability requirement block siting a repository in a technically-sound, cost-effective place that is willing to accept waste?

Answer. The BRC concluded that any decision to pursue recycling should be deferred, but that the option to recover the energy value of at least some spent fuel should be preserved for future generations. We recommended the pursuit of R&D related to recycling so that such an option could be available in the future. As you note, it is highly unlikely that defense waste will be recycled and thus the preservation of the opportunity to recycle is not important for that waste.

Your question points to the challenge of retrievability for up to a century. Retrievability for some period has generally been viewed as desirable not only to provide the opportunity for recycling as to enable the monitoring of the repository in its early years and to reverse course if necessary if that monitoring reveals unexpected problems. BRC concluded that retrievability requirements for this purpose are reasonable, and that the current requirements can be met in a wide range of media including salt:

Our view is that existing requirements concerning retrievability at mined repository sites (at 40 Code of Federal Regulations [CFR] 191 and 10 CFR 60.111 (b)) are appropriate and should be retained. These requirements are intended to ensure that emplaced waste can be removed if the repository is not behaving as anticipated or if its performance is called into question for any reason prior to permanent closure—they are not intended for the purpose of retaining easy access to emplaced materials for possible later recovery and reuse. Past evaluations have indicated that a wide range of candidate mined repository sites in different geologic media (including granite, salt and volcanic tuff) could meet these existing retrievability requirements. On the other hand, we recognize that the same level of retrievability may not be practical or necessary in the context of other disposal approaches, such as deep boreholes. In that case, related regulatory requirements and time periods can and should be reassessed as part of a larger evaluation of disposal system performance objectives.”

Question 2b. If the insistence on this retrievability requirement for commercial waste continues, do you think we ought to consider a separate repository for defense waste without such a restriction—a potential dual-path forward envisioned by the original Nuclear Waste Policy Act of 1982?

Answer. As noted in response to your previous question, the BRC recommended the reexamination of the decision to commingle defense with civilian waste. However, while allowed by the Nuclear Waste Policy Act, a defense-only repository would still be subject to the same NRC regulations that apply to a repository containing commercial waste. It thus would have to meet the same retrievability re-

quirements. As noted above, past evaluations indicate that a wide range of geologic media, including salt, can meet these requirements.

Question 3. After 25 years of getting nowhere with political wrangling, I believe we need to correct our course and get back to the basics of science, economics, and consensus-building. We need to find places with technically-sound, cost-effective geologies that want to host a repository. And we need to ensure that these new places have the capacity to take all of our nation's nuclear waste, both commercial and defense.

The Yucca saga illustrates the problem of allowing politics to overwhelm science and economics. And why we need to get back to the basics envisioned in the original Nuclear Waste Policy Act of 1982. We know that the geologic formations at Yucca do not necessarily offer the most cost effective solution, and there are still questions about whether they even offer a safe, technically-sound environment for long-term geologic storage.

Yucca is tectonically active, with both seismic and volcanic activity. Faulting, or shifting of tectonic plates, could allow water to corrode the waste packages and transport nuclear material well beyond the repository. Volcanic activity could potentially disperse radionuclides into the atmosphere and ground water.

While the risk of volcanic activity at Yucca is highly uncertain, the Yucca site is bounded by numerous known faults: among others, the Solitario Canyon and Sundance faults to the west and the Ghost Dance fault to the east.

In 1992, a 5.6-magnitude earthquake originated just 13 miles south of Yucca. And in June 2002, a 4.4-magnitude earthquake struck slightly further to the east of Yucca. These events are not exactly reassuring to the millions of Americans downstream or downwind of Yucca.

Question 3a. Do you see the Blue Ribbon Commission recommendations and Chairman Bingaman's legislation as a renewed call to correct our course? Choosing science, economics, and consensus over the failed political wrangling of the past 25 years, going back to many of the principles of the original Nuclear Waste Policy Act of 1982?

Answer. The BRC did not render an opinion on the suitability of the Yucca Mountain site, but instead focused on developing a sound strategy for future storage and disposal facilities and operations that we believe can and should be implemented regardless of what happens with Yucca Mountain. Chairman Bingaman's legislation, which incorporates many of the changes to existing law that will be required to implement the Commission's recommendations, is a very helpful step in the process of revisiting our national policy with regard to the disposition of high level nuclear waste.

Question 3b. For such a complex challenge as disposing of nuclear waste for millions of years, do you believe technical considerations should trump political ones to the maximum extent possible?

Answer. The highest priority should be to ensure that any repository isolates high level nuclear waste from the human environment for the necessary long periods of time.

Question 4. I would like to discuss the economics of different geologic formations. While there are multiple ways and places to secure nuclear waste safely, the costs of doing so are different. I believe that these costs should be considered when selecting among technically-sound sites.

Answer. A recent study compared the costs of repositories capable of holding 83,000 metric tons of heavy metals in different geologic media. It found that siting a repository in volcanic tuff or crystalline rock costs two to three times that of a repository in massive salt formations.

These extra costs came primarily from the development and characterization of the site, more expensive and complex surface and subsurface facilities, and extensive packaging, barriers and shields necessary to keep the waste intact. Because of the potential cost savings, I think we need to take a hard look at salt formations throughout the country as potential sites for a repository.

Question 4a. Do you believe that cost should be an important factor when selecting among sites that can safely dispose of waste and have support within the community?

Answer. As noted above, cost should not be the most important factor in determining an appropriate location for a disposal facility. It might be one of the factors that serves as a "tie-breaker" for sites that are otherwise acceptable.

Question 4b. Do you agree that salt formations could deliver potential cost savings compared to other geologic media types and deserve consideration?

Answer. The BRC did not consider the advantages and disadvantages of various types of geology for a disposal facility.

Question 5. It is simply unacceptable for Hanford to become the de facto repository for 90 percent of the nation's high-level radioactive defense waste. Back in the 1980's when a number of repository sites were analyzed, Hanford placed last in terms of cost-effectiveness.

These high costs were in part due to the extraordinary technical challenges. According to a National Research Council report, the high internal stresses within the basalt formation at Hanford poses a risk of "rock bursts" when opened up to atmospheric pressure. And the U.S. Geological Survey found that the high water pressure in the deep aquifer poses the danger of catastrophic flooding.

Question 5a. Do the cost-effectiveness of meeting technical requirements and inherent suitability of a site go hand-in-hand?

Answer. The suitability of a site is an essential ingredient in establishing the effectiveness of a site.

Question 5b. Do you agree that cost-effectiveness is an important consideration that partially takes the suitability of a repository site into account?

Answer. Yes.

Question 6. I am pleased to see that this legislation repeals the limit on the amount of waste able to be disposed at a repository. This was a well-kept secret about Yucca. Even if Yucca were licensed under current law, it would not be able to accommodate all of our nuclear waste, neither civilian nor defense. I believe a litmus test for any new federal nuclear waste policy is whether it can dispose of our nation's nuclear waste—all of it.

This has been one of my biggest concerns with the Yucca proposal. Of the 70,000 ton limit for waste at Yucca, only 7,000 tons were set aside for defense waste. Of that 7,000 tons for defense waste, only 4,667 tons would be allocated for high level waste.

Although the total number of tons of high level defense waste is somewhat uncertain, just three percent of DOE's inventory of vitrified High Level Waste would be accounted for under the planning basis of 4,667 tons of heavy metal for DOE High Level Waste when compared to over 170,000 tons of heavy metal DOE reprocessed fuel.

In practice, a higher percentage could probably be accommodated because a portion of the radioactivity has already been lost. According to an historical estimation method, the limit of high level defense waste at Yucca would still not have been able to accommodate the high level waste at Hanford because this limit accounts for less than half of all defense high level waste.

An even smaller percentage of Hanford waste would have been able to go to Yucca under current law. Any way you cut it, there simply is not enough capacity without a repeal of this limit.

Question 6a. Are there any technical or safety reasons for the current limit of 70,000 tons? If so, does this mean that we need multiple repositories to accommodate all of our nation's waste?

Answer. The BRC did not examine the limitations of the Yucca Mountain site. However, we did point out that the mass limitation for Yucca Mountain in the Nuclear Waste Policy Act was not based on technical constraints:

Recognizing the need for a Congressional mandate to overcome opposition to the selection of any given site, Congress sought through the NWPAA to establish a fair and technically sound process for selecting repository locations. In fact, to avoid the perception that any one state or locale would be asked to bear the entire burden of the nation's nuclear waste management obligations, the Act provided for the selection of two repository sites (though not stipulated in the legislation itself, it was widely assumed that one of these sites would be located in the West, the other in the East). And to further ensure that the end result would not be a single, national repository, Congress included provisions explicitly limiting the capacity of the first repository to 70,000 metric tons until a second repository was opened."

Question 6b. Why do you think over half of our nation's high level defense waste was left out of the plan at Yucca?

Answer. The BRC did not examine this aspect of the Yucca Mountain project.

RESPONSES OF LIEUTENANT GENERAL SCOWCROFT AND RICHARD A. MESERVE TO
QUESTIONS FROM SENATOR BARRASSO

Question 1. The Blue Ribbon Commission's report advocates a consent-based approach to siting storage facilities and a permanent repository for our nation's nuclear waste. You repeat your support for a consent-based approach in your testimony. However, you go on to advocate for the creation of a new nuclear waste man-

agement organization—a Federally chartered corporation—that would be less politically accountable than a new Federal agency as envisioned in S. 3469. If we pursue a consent-based approach, why is there a need to reduce political accountability?

Answer. The BRC stated that the federally chartered corporation should be politically accountable. Its board should be nominated by the President and confirmed by the Senate. It should be required to provide periodic reports to Congress on its activities, expenditures, and progress, and should be subject to periodic oversight hearings. Its financial affairs should be subject to examination by the Government Accountability Office.

The fulfillment of the obligations of the new waste organization requires the consistent and aggressive pursuit of a long-term strategy. We did not recommend the establishment of a new federal agency because that approach would not provide the necessary long-term management stability that the task requires. We note that there may be opportunities for more effective consensus building as well by including representatives of the various stakeholders on the corporation's board—an opportunity that would not be provided by a federal agency.

Question 2. In your testimony, you explain that S. 3469: “places limits on the amount of spent fuel that can be accepted for consolidated storage prior to congressional ratification of a consent agreement for a repository.” However, you say that the Commission concluded that: “the volume of fuel to be accepted in consolidated storage could be one of the many elements of the negotiations between the nuclear waste management organization and potential host governments.” Are you recommending that Congress place no limits on the amount of fuel that can be accepted into consolidated storage? If so, how does Congress ensure that consolidated storage does not effectively become a long-term solution?

Answer. Storage does not offer a long-term solution to the waste problem and it should be clear in the legislation establishing the waste organization that its obligations include the expeditious pursuit of disposal. Spent fuel is now being stored at reactor sites around the country in a safe and secure manner. The existence of a consolidated storage site does not appreciably change the pressures to establish a clear disposal path for commercial spent fuel from the status quo.

Given the many benefits of consolidated storage, the legislation should not establish barriers to the establishment and operation of a consolidated storage site or sites. We anticipate that the negotiation of the terms with the stakeholders proposing a storage location will no doubt include terms requiring that the stored waste be sent for disposal by certain deadlines. We concluded that many states and communities will be far less willing to be considered for a consolidated storage facility if they fear they will become the de facto hosts of a disposal site. This 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 should be sought without further delay.

Question 3. The Yucca Mountain project goes back three decades and it seems we are nowhere near a long-term solution. Do you believe S. 3469 will bring us closer to siting and constructing a permanent repository?

Answer. We hope that the S.3469 will be an important first-step in the establishment of an effective long-term strategy for dealing with high-level waste. Because the 1987 amendments of the Nuclear Waste Policy Act restrict all repository site investigations to the single site at Yucca Mountain, new legislation is needed to authorize siting and development of a repository at any other site.

RESPONSES OF GEOFFREY H. FETTUS TO QUESTIONS FROM SENATOR CANTWELL

INTRODUCTION

As in initial matter, we share your concerns regarding the state of cleanup for the nation's high-level radioactive waste (HLW). Indeed, NRDC has been a leading force for the cleanup of the HLW waste tanks at the Hanford Nuclear Reservation in Washington and the similar HLW tanks in Idaho, South Carolina, and New York. We were at the center of the litigation and legislative battles approximately eight years ago over the Department of Energy's (DOE) efforts to obtain the authority to reclassify HLW as “waste incidental to reprocessing.” DOE succeeded in obtaining this reclassification authority via Section 3116 of the 2005 Defense Authorization Act, but only in South Carolina and Idaho and not in Washington and New York. Despite this partial victory, cleanup at the Hanford site remains mired in pressure

to cut costs and rely on expedient shortcuts rather than long term solutions that address the waste in the tanks. We remain engaged with Washington allies in working to ensure that the HLW at Hanford site is effectively cleaned up.

But despite our shared concern over HLW, we are more apprehensive that shortcuts favoring addressing particular subsets of the national problem of spent nuclear fuel (SNF) and HLW will only add delay and hamper the development of a sound, protective and publicly acceptable geologic repository program. In our view the Blue Ribbon Commission on America's Nuclear Future—Report to the Secretary of Energy (BRC) included several recommendations that could help build a better nuclear waste management system, but decades from now others will face our current predicament unless Congress creates a transparent, equitable process with strong public health and environmental standards that cannot be manipulated in order to license a site (or sites) that may not be suitable. To do that, as it writes our path forward, Congress must ensure we not repeat the mistakes of the past.

Key to avoiding those mistakes and creating a transparent process with strong standards is providing states with meaningful regulatory authority at the outset. I will expand on these thoughts in response to your specific questions, but as an introductory matter, Chairman Bingaman has made a laudable effort and turned some of the stronger ideas in the BRC report into legislative language. As evidenced in our testimony before the Committee, we support fundamental components in the proposed bill, dispute other parts, and have several suggestions for expansion and refinement of S. 3469. But the Chairman's emphasis on the necessity of repositories and the need to link any potential storage site with the development of a disposal site is of lasting value. Any legislation that fails to adhere to these concepts will prolong the failures of the past thirty years in developing solutions for nuclear waste.

Question 1. I believe a key part of solving our nation's nuclear waste challenges is to recognize that we need to prioritize addressing certain types of waste first—such as waste stranded at shutdown reactor sites and defense waste that has built up for decades. Not all nuclear waste is the same, and I do not plan to support any legislation that does not remedy the mistakes of the past that has precluded more feasible solutions for our nation's defense waste.

As I'm sure you know, Hanford is the largest nuclear cleanup site in North America. We have been diligently trying to clean up this site, an incredible complex and costly endeavor. While it is a constant struggle to keep this monumental effort on track, I'm proud of incredible efforts of Hanford workers and we are making real progress. But we need an end point. Once we clean up and isolate this toxic legacy, we need a place for it to go.

It is unacceptable to me, and to the constituents I represent, for Hanford to be the de facto repository for 90 percent of the nation's high-level radioactive defense waste.

While proud of the service to help secure our nation during World War II and the Cold War, the Tri-Cities region has contributed and sacrificed enough during the 70 years in which a large portion of my state has been put off limits to economic development or other uses.

The problem as I see it is that our nation's nuclear waste policy treats civilian nuclear waste and defense waste the same, with defense waste almost as an afterthought.

That's a problem for two important reasons: First, our defense waste is not suitable for on-site storage and Hanford's Waste Treatment Plant is scheduled to produce vitrified high level waste in 2019. And second, defense waste is a witch's brew of nuclear byproducts that can never be reprocessed for electricity generation. Therefore, it can be disposed of permanently, possibly in ways that are faster and cheaper than civilian waste.

Question 1a. Do you agree that nuclear waste that we would never want to retrieve but can be permanently disposed of should be treated differently?

Answer. As a general matter, NRDC sees no need to dispose of SNF or HLW in a retrievable manner. If there are concerns about the integrity of a repository site, an ability to retrieve waste during some interim period of time before closure might be a useful feature, but we would hope that concerns over the geologic integrity of a site is a problem that would be addressed via the technical siting process rather than a back-end solution like the ability to retrieve waste.

Additionally, while we understand your point that vitrified HLW is not as easily subject to reprocessing as SNF, we do not think that should affect the disposal path for either. In the case of both SNF and HLW, repositories will be necessary. As we noted a number of times before the BRC, there is no current or prospective closed fuel cycle (i.e., reprocessing and fast reactors) that can economically compete with the current open cycle and we see no likelihood of things changing. Spent-fuel re-

processing and plutonium-fueled fast reactors are well-proven commercial disasters. The United States, Europe, and Japan spent tens of billions of dollars in the 1970s and 1980s trying to develop plutonium fast-breeder reactors (like the Bush Administration's proposed Global Nuclear Energy Partnership "advanced burner reactors," but with uranium "blankets" added to "breed" more plutonium than is consumed in the reactor). These fast reactors proved to be uneconomical, highly unreliable, and prone to fires due to leaking liquid sodium coolant, which burns spontaneously when it comes in contact with air or water. For a full discussion, see <http://www.nrdc.org/nuclear/gnep/agnep.asp>.

Question 1b. Have you studied whether permanent disposal in salt formations could be a cheaper and more readily available alternative to other geological storage options?

Answer. No. We have neither ruled out nor ruled in disposal in salt and we think favoring any particular geologic medium invites precisely the same problems that derailed the efforts to establish a meaningful repository program over the last three decades.

First, for decades NRC considered bedded salt as suitable for disposal either of reprocessed HLW or un-reprocessed spent fuel. Now, however, NRC has stated that salt formations are not being considered for spent fuel disposal for technical reasons. 73 Fed. Reg. 59,551, 59555 (Oct. 9, 2008). Indeed, disposal in salt, which was the original basis for the NRC's analysis for estimating the environmental impact of high-level waste or spent fuel disposal, could only be considered suitable for HLW from reprocessing, but as noted, reprocessing is not current policy. Nor should it be. Rather, direct and commingled disposal of HLW and SNF, for which the NRC would not consider salt formations, is now the current policy.

Second, as noted, favoring salt or any other specific geologic media at the outset of this new phase in the repository program effort would likely derail the process. To be specific, the BRC recognized that the 1987 amendments to the NWPA were "highly prescriptive" and "widely viewed as being driven too heavily by political considerations." Those observations are insufficiently critical assessments of what happened. We have recommended that Congress be clear about what happened to avoid repeating the mistakes of the past. Put bluntly, first DOE and then Congress corrupted the site selection process leading to Yucca Mountain as the only option by selecting politically expedient sites long before the science or the standards were complete.

I refer you to my testimony for the longer explanation of what went wrong with the development of sites and the applicable standards (see Fettus Testimony at 2-4), and I reiterate here that Congress must be explicit and state clearly in legislation that not only the standards for site screening and development criteria be in final form before any sites are considered, but generic radiation and environmental protection standards for any such site be established as well. See BRC Disposal Subcommittee Report, at 74. The Subcommittee was right to state that the standard and supporting regulatory requirements to license a geologic repository should be generic—i.e., applicable to all sites.

Indeed, not requiring the siting criteria or generic environmental standards to be in final form prior to developing potential storage and disposal sites ensures that the same gaming of the system will recur as played out over the last two decades. Pressing forward with any distinct 5 solution at this early stage would unravel the carefully constructed framework achieved by the BRC and Chairman Bingaman's S. 3469.

Question 1c. How do we make sure that defense waste does not get lost in the nuclear waste debate this time around?

Answer. We do not necessarily agree that it has been "lost," but we agree that more intensive Congressional oversight is necessary to ensure a protective cleanup results from the billions of dollars invested in addressing the toxic contamination left by the Cold War. As we noted at the outset, we share your concerns with the fact that the reprocessing of SNF produced approximately 100 million gallons of HLW, stored at DOE sites in more than 200 steel tanks buried just below the surface of the earth. These tanks range in size from a few hundred thousand gallons to more than 1 million gallons. This waste is primarily divided among three main production sites: Hanford, which has 177 tanks storing more than 50 million gallons of HLW; Savannah River Site, which has 51 tanks (a few have been closed via the incidental waste exemption discussed above) storing more than 35 million gallons of HLW; and the Idaho National Laboratory, which had 11 tanks (7 have been closed via the incidental waste exemption) storing about 900,000 gallons of HLW. The DOE EM budget includes more than \$2 billion a year to address those HLW wastes.

As you are all too aware as one of Washington's Senators, dozens of these storage tanks at Hanford have leaked HLW. Radioactive elements that have leaked out include cesium, strontium, tritium, technetium, iodine, plutonium and uranium. Some of these materials remain radioactive for hundreds of thousands of years. Non-radioactive but hazardous materials that have leaked include nitrates and metals such as chromium. If the reclassification authority that DOE has under its incidental waste exemption of Order 435.1 in South Carolina and Idaho is extended to Washington, DOE could abandon thousands (or potentially millions) of gallons of HLW near the Columbia River. If that were to occur, the concentration of radioactivity in abandoned sludges and sediments in the tanks could be as high, or even higher, than the concentration of radioactivity in the materials removed.

So we agree with you. The current situation is not tenable and we support your efforts to ensure the toxic legacy of the Cold War is addressed at Hanford and at other nuclear weapons production sites. But to do that properly and not repeat the mistakes of the past, we encourage you to adhere to several of the principles embodied in Chairman Bingaman's S. 3469—foremost that waste from the nation's nuclear weapons program and its commercial nuclear power plants must be buried in technically sound deep geologic repositories, permanently isolated from the human and natural environments.

But to ensure once and for all that the cleanup of the nuclear weapons complex receives the attention it deserves, we urge you to support our recommendation to amend the Atomic Energy Act (AEA) to remove its express exemptions of radioactive material from environmental laws. As we explained at length in our testimony, exemptions for 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. If EPA and the states had full legal authority and could treat radionuclides as they do other pollutants under environmental law, clear cleanup standards for DOE sites 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. Washington and Oregon, for example, might choose to work in concert to address the cleanup at Hanford. 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 cleanup of the nuclear weapons complex and developing storage sites and geologic repositories.

Question 2. Unfortunately, the requirement that nuclear waste be retrievable for up to a century blocks many potential sites. There are communities that would welcome our nation's nuclear waste; but while they are located near technically-sound, cost-effective geologic formations, high level waste placed there cannot be retrieved.

So maybe it's time to reconsider this retrievability requirement. The mere possibility of future uses for the nuclear waste should not block progress on siting a nuclear repository and geologically disposing of our nation's nuclear waste. This is especially true for defense waste, which has even lower prospects for reuse than commercial waste.

Question 2a. Given the bleak prospects for recycling or otherwise using nuclear waste, should this retrievability requirement block siting a repository in a technically-sound, cost-effective place that is willing to accept waste?

Answer. We concur with your assessment for reprocessing and fast reactors (see above at 3-4).

A retrievability requirement should not block any single repository site, but any and all sites should go through the process we outlined above and that Senator Bingaman suggests in S. 3469. As we noted above, Congress should require the standards for site screening and development criteria be in final form before any sites are considered. Congress should also require generic radiation and environmental protection standards for any such site be established as well. See BRC Disposal Subcommittee Report, at 74. The BRC correctly stated that the standard and supporting regulatory requirements to license a geologic repository should be generic—i.e., applicable to all sites. Failing to impose such requirements invites the same gaming of the system we have seen play out over the last two decades. We encourage you to follow the carefully constructed framework set out by the BRC and Chairman Bingaman's S. 3469 with our suggested modifications.

Question 2b. If the insistence on this retrievability requirement for commercial waste continues, do you think we ought to consider a separate repository for defense waste without such a restriction—a potential dual-path forward envisioned by the original Nuclear Waste Policy Act of 1982?

Answer. We do not insist on an ability to retrieve the waste, but as noted above, we urge following the framework for a transparent, consent-based process set forth by the BRC, Chairman Bingaman, and with the modifications we suggest (such as amendments to the AEA). Whether there will be a need to revisit the commingling decision for SNF and HLW is a matter far down the road. At this stage, ensuring strong, protective legislation is passed will do the most to ensure the problems of the past are not revisited.

Question 3a. Do you see the Blue Ribbon Commission recommendations and Chairman Bingaman's legislation as a renewed call to correct our course? Choosing science, economics, and consensus over the failed political wrangling of the past 25 years, going back to many of the principles of the original Nuclear Waste Policy Act of 1982?

Answer. Yes. As we stated to the Senate Committee on Environment & Public Works in June of this year, we think the BRC delivered a useful, although limited, report that identified several components of what could become a successful strategy for the ultimate safe disposal of commercial and defense spent nuclear fuel and high-level radioactive waste. NRDC submitted both oral and written comments to the BRC and its subcommittees during the months the BRC conducted its work. Turning to the effort by Chairman Bingaman, we think S. 3469 sets a strong template with several important provisions that can help build a better nuclear waste management system, but decades from now others will face our current predicament unless Congress fundamentally revamps how nuclear waste is regulated and allows for meaningful State oversight by amending the AEA to remove its express exemptions of radioactive material from environmental laws.

Question 3b. For such a complex challenge as disposing of nuclear waste for millions of years, do you believe technical considerations should trump political ones to the maximum extent possible?

Answer. No. As we outlined in our testimony, NRDC strongly supports the development of a science-based repository program that acknowledges the significant institutional challenges facing SNF and HLW storage and disposal. We have outlined in our testimony how we might achieve progress on both technical and political/institutional fronts.

Question 4. I would like to discuss the economics of different geologic formations. While there are multiple ways and places to secure nuclear waste safely, the costs of doing so are different. I believe that these costs should be considered when selecting among technically-sound sites.

A recent study compared the costs of repositories capable of holding 83,000 metric tons of heavy metals in different geologic media. It found that siting a repository in volcanic tuff or crystalline rock costs two to three times that of a repository in massive salt formations.

These extra costs came primarily from the development and characterization of the site, more expensive and complex surface and subsurface facilities, and extensive packaging, barriers and shields necessary to keep the waste intact. Because of the potential cost savings, I think we need to take a hard look at salt formations throughout the country as potential sites for a repository.

Question 4a. Do you believe that cost should be an important factor when selecting among sites that can safely dispose of waste and have support within the community?

Answer. Cost is an important, but ultimately a secondary issue. The BRC Final Report puts an emphasis on the concept of "intergenerational justice" as an ethical framework for a nuclear waste disposal program. NRDC agrees and views this concept as the principal basis for seeking geologic disposal of the nuclear waste. This generation's ethical obligation to future generations regarding nuclear waste disposal involves critical issues of security, including financial security, environmental protection, and public health.

Rather than focusing on cost, which is in significant measure the reason the site-selection process was corrupted, the aim of the program should be on a transparent, publicly acceptable process of selecting and arriving at technically suitable sites.

Question 4b. Do you agree that salt formations could deliver potential cost savings compared to other geologic media types and deserve consideration?

Answer. Salt, like any other geologic medium, deserves consideration that is part of a transparent, public process. See our response above at 4.

Question 5. It is simply unacceptable for Hanford to become the de facto repository for 90 percent of the nation's high-level radioactive defense waste. Back in the

1980's when a number of repository sites were analyzed, Hanford placed last in terms of cost-effectiveness.

These high costs were in part due to the extraordinary technical challenges. According to a National Research Council report, the high internal stresses within the basalt formation at Hanford poses a risk of "rock bursts" when opened up to atmospheric pressure. And the U.S. Geological Survey found that the high water pressure in the deep aquifer poses the danger of catastrophic flooding.

Question 5a. Do the cost-effectiveness of meeting technical requirements and inherent suitability of a site go hand-in-hand?

Answer. We agree that the state of Hanford's tanks is unacceptable as outlined above, but we disagree with your characterization that Hanford has 90 percent of the nation's HLW. We think that burden is shared as we described on page 5.

Turning to your direct question, we think there could be a relationship between the geologic suitability of the site and the costs necessary to assess the geology's ability to isolate the waste, but that's a question that presupposes too many factual matters that would have to be developed in a transparent, public manner. We think if the focus stays on legislation that develops a science-based repository program that takes into account the significant institutional challenges facing SNF and HLW storage and disposal, all will be better served.

Question 5b. Do you agree that cost-effectiveness is an important consideration that partially takes the suitability of a repository site into account?

Answer. As we stated above, we think cost is a secondary issue.

Question 6. I am pleased to see that this legislation repeals the limit on the amount of waste able to be disposed at a repository. This was a well-kept secret about Yucca. Even if Yucca were licensed under current law, it would not be able to accommodate all of our nuclear waste, neither civilian nor defense. I believe a litmus test for any new federal nuclear waste policy is whether it can dispose of our nation's nuclear waste—all of it.

Answer. This has been one of my biggest concerns with the Yucca proposal. Of the 70,000 ton limit for waste at Yucca, only 7,000 tons were set aside for defense waste. Of that 7,000 tons for defense waste, only 4,667 tons would be allocated for high level waste.

Although the total number of tons of high level defense waste is somewhat uncertain, just three percent of DOE's inventory of vitrified High Level Waste would be accounted for under the planning basis of 4,667 tons of heavy metal for DOE High Level Waste when compared to over 170,000 tons of heavy metal DOE reprocessed fuel.

In practice, a higher percentage could probably be accommodated because a portion of the radioactivity has already been lost. According to an historical estimation method, the limit of high level defense waste at Yucca would still not have been able to accommodate the high level waste at Hanford because this limit accounts for less than half of all defense high level waste.

An even smaller percentage of Hanford waste would have been able to go to Yucca under current law. Any way you cut it, there simply is not enough capacity without a repeal of this limit.

Question 6a. Are there any technical or safety reasons for the current limit of 70,000 tons? If so, does this mean that we need multiple repositories to accommodate all of our nation's waste?

Answer. Technical or safety limitations on the amount of SNF and HLW that can be disposed of at any site will be dependent on site specific limitations. Whether or not we even get to raise these matters for particular sites will depend on whether any new legislation avoids the mistakes of the past.

Question 6b. Why do you think over half of our nation's high level defense waste was left out of the plan at Yucca?

Answer. Under the Nuclear Waste Policy Act of 1982, there were supposed to be two repositories and a balancing of the national burden for the disposal of SNF and HLW.

[Responses to the following questions were not received at the time the hearing went to press:]

QUESTIONS FOR PETER B. LYONS FROM SENATOR BARRASSO

S. 3469 would establish a new waste management agency. It would transfer to the agency the functions of the Secretary of Energy, relating to the siting, licensing, construction, and operation of nuclear management facilities. The Blue Ribbon Com-

mission has called for the establishment of a new Federally chartered corporation to handle these responsibilities.

Question 1a. Does the Administration support the creation of a new Federal agency to handle nuclear waste management?

Question 1b. Does the Administration support the creation of a new Federally chartered corporation to handle nuclear waste management?

Question 2. In your testimony, you explain that nuclear waste fee collections exceed \$750 million each year. What benefits are ratepayers currently receiving in return for these fees?

The Blue Ribbon Commission issued its report in January of this year. I understand the Administration was supposed to submit a plan to implement the recommendations by the end of July, but has yet to do so.

Question 3a. What is the reason for the delay?

Question 3b. When can Congress expect the Administration's implementation plan?

Question 4. Does the Administration support S. 3469 as currently written? If not, do you recommend specific changes to the bill? If so, what are those changes?

The Consolidated Appropriations Act for FY 2012 requires the Department of Energy (DOE) to submit to the House and Senate Appropriations Committees a revised excess uranium inventory management plan for FY 2013 through FY 2018 "[n]o later than June 30, 2012." DOE has yet to submit such a plan.

Question 5a. When will DOE submit the plan?

Question 5b. Do you expect the management plan to be consistent with the May 15, 2012 Secretarial Determination?

Question 6. Section 312(a) of the Consolidated Appropriations Act for FY 2012 reads as follows:

Any determination (including a determination made prior to the date of enactment of this Act) by the Secretary pursuant to section 3112(d)(2)(B) of the USEC Privatization Act (110 Stat. 1321-335), as amended, that the sale or transfer of uranium will not have an adverse material impact on the domestic uranium mining, conversion, or enrichment industry shall be valid for not more than 2 calendar years subsequent to such determination. (emphasis added)

Pursuant to the May 15, 2012 Secretarial Determination, DOE plans to transfer up to: (a) 2,400 metric tons of natural uranium per year between 2012 and 2021 to DOE contractors for cleanup services at the Paducah or Portsmouth gaseous diffusion plants; and (b) 400 metric tons of natural uranium equivalent per year contained in low-enriched uranium (LEU) to National Nuclear Security Administration contractors for down-blending highly enriched uranium to LEU from 2012 through 2020. Are provisions 2) and 3) of the May 15, 2012 Secretarial Determination permissible under the two year limitation set forth in section 312(a)? If so, how?

Question 7. On February 16, 2012, Secretary Chu testified before this Committee that:

We have to be very careful about whether . . . bartering [uranium] will affect the markets . . . If we introduce into the market . . . 10 percent [of domestic fuel requirements] or below . . . , we feel safe that it won't have a material impact on the markets.

If fully implemented, the May 15, 2012 Secretarial Determination would result in uranium transfers that exceed the 10 percent cap set forth in the DOE's 2008 Excess Uranium Management Plan.

Question 7a. Does DOE believe that the market for uranium changed from February to May to justify exceeding the 10 percent cap?

Question 7b. If so, what changed in the market for uranium between the February hearing and the May 15, 2012 Secretarial Determination? Please be specific.

Question 8. How would DOE respond to changes in the global market for uranium to ensure that the sales and transfers envisioned under the May 15, 2012 Secretarial Determination do not have an adverse material impact on the America's uranium mining, conversion, or enrichment industry?

APPENDIX II

Additional Material Submitted for the Record

NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS,
September 10, 2012.

Hon. JEFF BINGAMAN,
Chair, 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 CHAIRMAN BINGAMAN AND RANKING MEMBER MURKOWSKI:

The National Association of Regulatory Utility Commissioners (NARUC) would like to submit the following comments regarding the proposed Nuclear Waste Administration Act of 2012, S. 3469.

NARUC and our member State public utility commissioners have been actively engaged in the issue of nuclear waste disposal since the Nuclear Waste Policy Act was enacted in 1983. We followed closely and participated in the work of the Blue Ribbon Commission on America's Nuclear Future and we want to contribute to implementing its recommendations so that the troubled program can get on track.

Our interest in this issue centers around the consumers of nuclear utilities who have been bearing the ultimate cost of fees paid by their utilities for the electricity that is produced from the Nation's 104 nuclear reactors. Those fee payments represent the "grand bargain" set in the Nuclear Waste Policy Act. Under the Act, the federal government is responsible for the safe disposal of both government and commercial nuclear waste, and those who have benefit (i.e. consumers of nuclear power) shall pay for the cost of disposal of waste products. Unfortunately, history has proven that the collection of fees has been the only aspect of the nuclear waste program that began on time and has functioned as designed.

We should note for the record that NARUC is a party to litigation before the Court of Appeals District of Columbia Circuit seeking to require that the Nuclear Regulatory Commission resume the Yucca Mountain license application review and come to a final determination of whether a repository at Yucca Mountain meets regulatory requirements or not.

The Blue Ribbon Commission on America's Nuclear Future in its January Report to the Secretary of Energy said all of its recommendations "can and should be implemented regardless of what happens to Yucca Mountain." We had expected that the Administration would have provided some indication of whether and how it will implement those recommendations or how it intends to "fulfill the Federal Government's obligations for managing and ultimately disposing of spent nuclear fuel and high-level radioactive waste" as it pledged in 2009.

We commend the leadership of this Committee for your collaborative efforts with members of the Energy and Water Appropriations Subcommittee to produce the proposed "Nuclear Waste Administration Act of 2012," S. 3469, as a legislative vehicle to incorporate key provisions of the BRC Report into a modified Nuclear Waste Policy Act. We have some comments from the standpoint of ratepayers and in some instances in comparison with the BRC recommendations.

You will not be surprised that our primary interest is on fixing the Nuclear Waste Fund. The BRC said it believed that "the success of a revitalized waste management program will depend on making the revenues by the nuclear waste fee and the balance in the NWF available when needed and in the amounts needed to implement the program." The Commission called for reform in two stages:

- Near Term, within existing administrative authority: Modifying existing contracts with utilities such that total fees paid to the Treasury would match the amount appropriated from the NWF in the same year. The balance would be placed in irrevocable trust accounts (escrow) for future payments. The fee rev-

enue would be reclassified as offsetting receipts, subject to concurrence by the Congressional Budget Office and the Budget Committees.

- Congressional action required: The BRC recommended budget autonomy for the new nuclear waste management organization that would require legislation (such as S. 3469) to establish. Specifically, the BRC recommended the legislation include a “defined schedule of payments to transfer the balance of the Fund (the corpus) to the new organization over a reasonable future time period starting 10 years after the organization is established.”

We are deeply disappointed that the Administration chose not to move ahead on the near-term action which was so carefully researched by the Blue Ribbon Commission and placed in their hands. We are not experts in federal fiscal rules, but given the importance of resolving this issue, we expected a better effort. This lack of action reminds us of a baseball saying—“You will never get a hit if you don’t take a swing.”

Thankfully, as it relates to the actions requiring congressional action, S. 3469 steps up to the plate. The legislation creates an independent agency called the Nuclear Waste Administration that would be given most of the duties and authorities under the NWA that are presently assigned to the Secretary of Energy. Still, we are concerned about how the program will be managed before legislation is enacted and how transition to the NWA is implemented. For the past two years, about \$770 million in fees have been paid into the Nuclear Waste Fund annually and no money was appropriated for waste disposal. It appears, however, that the money was spent for other purposes and more “IOU’s” were added to the Fund. We are anxious to see if FY 2014 is any different.

Regarding the organizational form and function, we thought the federal corporation proposed by the BRC was well considered. We found the various oversight mechanisms ample, including a role for State utility commissioners to serve in the review of fee adequacy determination.

Having seen extended vacancies in the senior DOE waste program manager’s position caused by lengthy confirmation delays in the Senate during the Yucca period, we find the BRC federal corporation a well suited approach. This is because having presidentially appointed directors select the CEO better protects the position and provides greater program stability than the politically-appointed Administrator/Deputy Administrator positions the NWA legislation would.

Moreover, the bill does not heed the clear call for financial reform made by the BRC and it may impede the startup of the new organization. The Administration (so far) chooses to avoid a rejection of the near-term fee reclassification, so let us express some apprehension over how a Nuclear Waste Administration might be difficult to form if it cannot attract top-tier talent because of concerns over its financial stability. Potential applicants for the NWA Administrator position do want to see a secure financial foundation underlying the NWA or other organization.

Additionally, we are puzzled by the appearance of different degrees of financial autonomy for the new Administration:

- In Sec. 301 the NWA is given authority for the “collection, adjustment, deposition and use of fees” to accomplish waste functions, yet
- Sec. 401 (c) says funds deposited in the Working Capital Account “shall be immediately be available. to carry out the functions of the Administrator, except to the extent limited in annual authorization or appropriation Acts.”

The Working Capital Fund seems to offer improved access to the fee revenue, which should be an improvement over the present arrangement. An even better strengthening of the NWA financial support, though, would have the interest earned on the balance in the Nuclear Waste Fund deposited in the Working Capital Fund. In recent years, that interest has been over \$1 billion a year.

The bill gives no indication on any disposition schedule like the BRC suggested; leaving some doubt about when and under what conditions the “corpus,” reportedly over \$26 billion now, will be made available for the purpose it was collected. No one is saying there is a need to use that money now, but every calculation of the sufficiency of the fees rests on the assumption that 100 percent of past fees paid is available to the waste activities program, including interest. It seems ironic, then, that Section 403 provides direction that the NWA is to assume that sufficient funds will be appropriated to the NWA to cover the cost of defense waste disposal, yet there is no counterpart assurance that past fee revenue collected and supposedly held in the Nuclear Waste Fund will also be appropriated.

We agree with the shift to a more co-equal “consent-based” approach to siting nuclear waste facilities. We hope that the implementing organization is given latitude to be adaptive to the circumstances of the States and localities involved. There are

opportunities to employ the principles recommended by the BRC in pursuit of a consolidated interim storage facility for spent nuclear fuel from the decommissioned reactor storage sites. Successful development of such a facility—whether by DOE or a new organization—would demonstrate that the government can safely transport and store spent nuclear fuel while pursuing a geologic repository. There are a number of cost estimates for building such a facility. One done by DOE in 2007 indicated a facility for the decommissioned sites could be built and operated for 15 years for the same amount of fees paid by all reactors in a single year.

The bill includes many other important elements that we are not addressing here. Importantly, we want to continue to work with DOE until a new organization is formed and functional. We must be realistic about just how quickly we can move forward, even if Congress passes a bill. Issues such as the radiation standards, siting guidelines and development of a mission plan within a year, will take time. Indeed, just building a nucleus staff and creating a new organization will take time.

As we stand at the threshold of dramatic sequestration reductions in federal agency budgets, there may be resistance to creating a new federal agency for any purpose. We considered it unfortunate that the Administration took credit in the FY 2010 Budget for termination of the Yucca Mountain program, rather than recognizing that the Administration—we believe—meant to cancel the Yucca Mountain project and to reset the development of the program at a different site or sites. We regret the disbanding of a residual staff within the Department of Energy that could tend to disposal affairs during the BRC deliberation and to aid in the establishment of a new waste management organization.

In conclusion, NARUC appreciates the leadership in creating this bill—a positive step—although we remain apprehensive about “limits” on annual fees and worried over the corpus.

The best media summation comes from July 4 New York Times: “If nuclear power is to have a future in this country, politicians, scientists, and industry leaders need to commit to finding a solution instead of just hoping everything will somehow work out.” The BRC expressed much the same appeal in its Report, as its members “believe it is long past time for the government to make good on its commitments to the American people to provide for the safe disposal of nuclear waste.”

Sincerely,

DAVID A. WRIGHT,

NARUC President, Vice Chairman, South Carolina Public Service Commission.

STATEMENT OF THE ENERGY COMMUNITIES ALLIANCE

Chairman Bingaman, Ranking Member Murkowski and Members of the Committee, we thank you for accepting our written testimony on S.3469, 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. We would also like to thank the sponsor of this bill: Senator Jeff Bingaman (D-NM). The Energy Communities Alliance (ECA) is the association of local governments that are adjacent to or impacted by Department of Energy (DOE) nuclear activities. Our members are either neighbors or hosts of DOE and National Nuclear Security Administration (NNSA) sites that currently produce or formerly produced defense nuclear waste, sites that store and process defense nuclear waste, and the sites that may potentially host a future interim storage facility, reprocessing facility or geologic repository.

Founded in 1992, ECA is the only association to bring together and provide a central voice for local elected and appointed officials on DOE issues. Our sites are the sender and receiver sites for nuclear waste, and potential hosts for nuclear waste interim storage, recycling and disposal facilities. We believe that local governments have a critical role to play in any waste discussion, and we have stated this position many times in our testimony before the Blue Ribbon Commission on America’s Nuclear Future (BRC). We applaud the efforts of this legislation to ensure that local governments are involved in waste decisions from the beginning.

Our communities are most interested in the disposal of defense waste currently stored at many of our sites. As you consider this legislation, we ask you to take into account the impact these decisions will have on our communities. We would like to offer the following recommendations and comments on S.3469:

- Congress and the Administration Need to Re-Engage Communities on HLW Issues
- ECA Supports the Inclusion of Local Governments in the Decision-Making Process

- The Siting Process Must Allow Affected Communities to Decide Whether, and on What Terms, the Affected Communities Will Host a Nuclear Waste Facility
- Use a Phased, Adaptive Approach to the Sequence of Waste Disposition—Move Defense Waste First.
- The Impacts of Transportation on Local Governments and Communities Need to Be Addressed
- ECA Can Support a New Organization to Manage Nuclear Waste

Many of our members currently call for Yucca Mountain licensing to be restarted. However, our organization also supports the Chairman's initiative to develop legislation to continue to move forward to create a High-Level Waste (HLW) Policy that can be implemented in the current political environment.

Our members have jointly prepared the testimony we submit to you today.

Congress and the Administration Need to Re-Engage Communities on HLW Issues

ECA communities have been home to federally-owned and operated nuclear facilities for over half a century. ECA believes that any legislation must require that DOE, or any new entity responsible for nuclear waste management, engage these communities in a meaningful dialogue and take into account the impact on the states, tribes and local governments.

Many of the local communities ECA represents currently store high-level nuclear waste were, but were never intended to become permanent waste storage sites. These same communities have operated in good faith based on federal law, as codified in the NWSA, that the defense waste would ultimately be disposed of in a geologic repository. As hosts of DOE sites where this defense high-level waste has been produced and stored, our communities have unique health and safety concerns as well as resource needs.

Several local governments have identified that, if certain conditions are met, the local community may be willing to accept a HLW disposal mission. Congress and the Administration should begin to re-engage with these communities, and begin the process of assisting these communities and states to study the scientific data to determine if their communities are suitable for such a mission.

ECA's high-level waste policy is attached as Appendix A.* In addition, we have attached "Recommendations for The Blue Ribbon Commission On America's Nuclear Future To Involve Local Communities" as Appendix B.* Further, additional ECA positions and meeting summaries can be found at www.energyca.org.

ECA Supports the Inclusion of Local Governments in the Decision-Making Process

ECA supports the inclusion of local governments in the decision-making process outlined in S.3469. We appreciate that the legislation takes into account the impact that storing, transporting and disposing of nuclear waste has and will have for communities at the local level.

We agree with the language included in the Sec. 304. Siting Nuclear Waste Facilities:

In siting nuclear waste facilities under this Act, the Administration shall employ a process that (1) allows affected communities to decide whether, and on what terms, the affected communities will host a nuclear waste facility; (2) is open to the public and allows interested persons to be heard in a meaningful way; (3) is flexible and allows decisions to be reviewed and modified in response to new information or new technical, social, or political developments; and (4) is based on sound science and meets public health, safety, and environmental standards."

ECA, local elected officials, and many other impacted parties often highlight how important these four provisions are in successfully siting nuclear waste facilities. Most significantly to ECA, this legislation demonstrates an understanding that local communities face unique health and safety decisions as hosts of storage and disposal sites—and that they should be allowed to determine what is necessary to address their unique needs and concerns—an issue of paramount importance to ensure long-lasting support and concurrence.

ECA also recognizes that states and local governments must work together meaningfully as early as possible in the process in order to avoid the pitfalls of the past, maximize positive outcomes and successfully site nuclear waste facilities.

We also support the language included in the legislation requiring public hearings in the vicinity of the site and at least one other location within the state where the site is located. Local governments want the public to be informed of any proposed

*The appendixes have been retained in committee file.

site characterization and have the opportunity to provide comments and recommendations to the federal government.

Finally, in regards to a consent agreement for making a final determination of site suitability, ECA agrees with the terms and conditions outlined in S.3469:

The terms and conditions of the consent agreement “shall promote the economic and social well-being of the people living in the vicinity of the repository or storage facility; and (B) may include—

- (i) financial compensation and incentives;
- (ii) economic development assistance;
- (iii) operational limitations or requirements;
- (iv) regulatory oversight authority; and
- (v) in the case of a storage facility, an enforceable deadline for removing nuclear waste from the storage facility.

ECA believes local governments are uniquely positioned to negotiate these benefits on behalf of the impacted community. A community volunteering to host a nuclear waste facility should be prepared to identify what it needs and wants as a potential host.

The Siting Process Must Allow Affected Communities to Decide Whether, and on What Terms, the Affected Communities Will Host a Nuclear Waste Facility

ECA supports the process described in S.3469 for siting nuclear waste facilities. Local governments of affected communities must be engaged early and actively in any siting process for any new nuclear facility. Meaningful involvement is critical at all steps in the process—developing the vision, refining the goals and priorities, and providing input when conflicts arise. Increased coordination and cooperation with the federal government will ensure that local governments and potential host communities better understand the federal government’s approach, and it will keep local communities informed so they can understand priorities, concerns and goals.

S.3469 states that preference will be given to sites determined to be suitable for co-location of a storage facility and repository. ECA would also note that special consideration should be given to sites that are determined to be suitable for co-location of a storage facility and a facility for recycling (or reprocessing) used fuel. We understand that recycling will not eliminate the need for a geologic repository, but it may allow what we currently consider “waste” to be a new energy resource. Further, several communities have already identified that they would be unlikely to accept the mission without a recycling or other similar mission.

Use a Phased, Adaptive Approach to the Sequence of Waste Disposition—Move Defense Waste First.

As the local government hosts of the vast majority of defense-related high-level waste and spent nuclear fuel in the country, we recommend that this Nation’s defense-related high-level waste—especially material that is never intended to be retrieved—be given priority over, and “fast-tracked” ahead of, commercial waste and moved out of our states and into a repository as soon as possible.

Our Nation has approximately 2,460 metric tons of heavy metal (MTHM) high-level waste (approximately 2,150 MTHM defense and 310 MTHM non-defense) consolidated and stored mainly at the Hanford site in Washington, the Idaho National Laboratory in Idaho, and at the Savannah River Site in South Carolina—the latter alone has about 4,000 canisters of vitrified high-level waste glass logs ready for disposal. This legacy defense waste differs from commercial spent nuclear fuel in a number of ways:

1. It is older and has been awaiting permanent disposal longer.
2. It has different radioactive properties.
3. Much of the defense high-level waste is being vitrified and cannot be retrieved for recycling or reprocessing. It is currently being “packaged” to Yucca Mountain standards and stored in “temporary” buildings.
4. It has only one disposition path: a geologic repository.
5. Maintaining the status quo pending a decision regarding commercial waste increases the risk to human health and the environment. At Hanford, one million gallons of high-level waste have already leaked from storage tanks.
6. Maintaining the status quo is compromising other DOE missions at the affected sites. For example, further delays will violate legal commitments DOE has with states. Missing milestones, failing to meet deadlines or failing to honor agreements will adversely affect DOE’s Office of Environmental Management’s cleanup program.
7. There is a smaller volume of defense legacy high-level waste than of spent nuclear fuel.

8. Funding for management of legacy waste comes from a different source than funding for management of commercial waste.

In addition, unlike spent nuclear fuel, defense high-level waste and storage of defense high-level waste is not regulated by a third party (the Nuclear Regulatory Commission regulates private spent nuclear fuel). Defense high-level radioactive waste is self-regulated by DOE. Defense high-level waste was created primarily to support the defense of our country and not for private energy production and in some cases has been shipped from one defense site to another for “temporary” storage pursuant to agreements with states. Finally, defense high-level waste is being treated to address United States international treaty obligations in some cases.

In the future the defense waste and commercial waste can be comingled in a repository once the commercial waste can move forward.

ECA recommends that the Committee consider establishing a pilot program first (consistent with National Academy of Sciences’ recommendations for adaptive staging) and the defense waste transitioned as part of the program. Doing so has several clear advantages. First, there is a smaller, more manageable scope of work where disposition may be achieved in a more timely manner. Second, demonstrating that the legacy waste can be successfully dispositioned can provide valuable lessons as the shift to commercial waste disposition occurs. Finally, and perhaps most importantly, public trust and confidence in the federal government will increase as the federal government demonstrates an ability to safely manage and dispose of nuclear waste and to keep its commitment to American taxpayers.

The Impacts of Transportation on Local Governments and Communities Need to Be Addressed

S.3469 outlines how States and Indian tribes will be provided with financial and technical assistance if plans are made to transport nuclear waste through their jurisdictions. Local governments in affected communities along transportation routes should be included among these groups as they, too, are responsible for public education and ensuring the safety of their citizens. Local governments provide services such as police and fire protection, water and waste water treatment and public health services. Training, equipment, and transportation safety programs for public safety officials and other emergency responders at the local level is extremely important and will help ensure consistency among all affected parties as waste moves across the country.

Energy Communities Alliance Can Support a New Organization to Manage Nuclear Waste

As elected officials at the local level, ECA members have the responsibility to protect the health, safety, quality of life and economic future of their citizens and the communities adjacent to DOE and NNSA sites where nuclear waste waits for final disposition in a repository.

As ECA previously testified before the BRC, our members could support the creation of a new organization dedicated solely to implementing the nuclear waste management program, provided it has clear legislative authority, appropriate autonomy, appropriate oversight mechanisms, and access to required funding. Our members are still evaluating options for the structure of a new nuclear waste organization. ECA is encouraged that a primary purpose of the Nuclear Waste Administration will be “to protect the public health and safety and the environment” as it assumes the responsibility of the federal government to manage and dispose of nuclear waste.

There is concern, however, about the timeline for creating this new entity given that in 1982, it took four years to begin substantive implementation of the NWSA. It will also take time to create a new regulatory structure. Increased delay means continued or even increased risks to our communities currently hosting “de facto” HLW storage sites with nuclear waste remaining beyond the timeframe originally committed to by the federal government. ECA recommends that the Committee consider empowering the Nuclear Waste Administration to allocate funds from a defense appropriations account to help ensure that local communities hosting sites with stranded defense-related HLW can address their unique health and safety concerns until a final disposition plan is implemented.

ECA agrees that the Nuclear Waste Administration and the Nuclear Waste Oversight Board should have access to funds in the NWSA independent of the annual appropriations process. ECA believes the funds should be used as originally intended and outlined in Section 302 of the NWSA in 1982.

Conclusion

ECA appreciates the opportunity to provide testimony to you on S.3469, and we appreciated this Committee's work to address nuclear waste management now and begin to implement the recommendations made by the BRC. ECA supports the Chairman's efforts to make nuclear waste management a priority. ECA looks forward to providing any assistance we can as your work continues.

ECA also thanks the Chairman for his long-term leadership in the Nuclear Energy and Nuclear Waste Cleanup and Disposition Area. His actions have made each of our communities and our country a better and safer place to live.

More information about Energy Communities Alliance can be found at www.energyca.org.

STATEMENT OF EDDY-LEA ENERGY ALLIANCE LLC, CARLSBAD, NM

Dear Senators Bingaman, Murkowski, Feinstein and Alexander:

We're writing to you on behalf of the Eddy-Lea Energy Alliance (ELEA), a limited liability company owned by the New Mexico public entities of the Cities of Hobbs and Carlsbad, and Lea County and Eddy County. ELEA is currently pursuing an interim storage facility for spent fuel on 1,000 acres of land about halfway between Carlsbad and Hobbs.

We understand legislation is in development that will establish a new executive branch agency to take responsibility for siting storage and disposal facilities for the nation's spent fuel and high-level nuclear waste. We applaud your efforts in attempting to pursue the spirit of the recommendations made by the Blue Ribbon Commission on America's Nuclear Future and support many of them; however, we would like to address some items in the draft legislation that cause us concern. Our concerns are as follows:

- The draft legislation would require significant repository progress prior to licensure of an interim storage facility.

We believe this wording could put our nation's interim storage plans (including Sen. Feinstein's existing bill) at risk. If there is one lesson that has hopefully been learned over the past 30 years, it is that linking multiple processes that do not have to be connected runs the risk of causing nothing to ever move forward.

It is our understanding that the impetus for interim storage is the fact that a repository for high level nuclear waste is 20 to 30 years away. We need to move nuclear material away from coastal areas, fault lines and population centers now—not wait for the repository stars to align themselves. In fact, if a repository is ready, why would interim storage even be needed?

We realize that there is some concern that interim storage will become a permanent solution, but there are many more viable ways to address this concern, such as fines and timetables. Our nation's primary concerns are that our fuel pools are being over packed and that there is an incredible surging expense to taxpayers due to a lack of an immediate solution. Interim storage is meant to be a fast solution, but linking it to repository development will prevent that from being the case.

The heart and soul of the BRC's recommendation is that a consent-based process be put in place. A forced linking between interim storage and repository development feels like a paternalistic decision that interferes with a local region's and state's right to make decisions about the pros and cons of a facility.

- The bill does not provide for defense high level waste to go to an interim storage facility. We strongly believe that the DOE should retain the option of temporarily using interim storage for defense high level waste, if needed. Consolidated interim storage could save the DOE from spending hundreds of millions of dollars by preventing the building of additional facilities at its present locations. The DOE could also use interim storage to reduce oversight costs while waiting for a repository to be ready. On the other side of the issue, defense high level waste could be a major, rapid contributor to the viability of an interim storage facility. Keeping the DOE's backing is important, and we recommend a revision that includes provisions for the possibility of defense high level waste interim storage.
- Guidelines that require the administrator to take into account the extent storage would "unduly burden a state" that already has defense waste or transuranic waste.

Our concern is that the "unduly burden" language will be subject to significant misinterpretation in discussions that follow the creation of this bill. Our interpretation is that this language simply requests that these states deserve careful consider-

ation. Many states may opt not to view storage as any sort of burden due to incentives, road payments and job creation opportunities. If the determination of burden vs. benefit is strictly left up to the individual state, such language could be productive.

However, opponents of a specific storage site may interpret such language to mean that states that currently have nuclear waste facilities would not be eligible for storage because “they have already done their share” when it comes to the nation’s nuclear waste needs. This is again a determination that should be made by each individual state rather than having the federal government decide. An incentive-based interim storage plan could be quite lucrative for an interested state—the federal government should avoid any language that might be somehow used, through misinterpretation, to punish states already involved in the nuclear waste process by making them less eligible for a desired facility.

Furthermore, many of the states with existing nuclear waste facilities (including transuranic) are likely to be some of the nation’s best locations for future storage due to geographic and geologic considerations, existing trained workforce availability, and regional socio-political understanding of nuclear waste issues. A misinterpretation of the “unduly burden” line could be used to eliminate many of the nation’s best possible locations for interim storage.

Senators, we ask that you look to our nation’s recent past at some of the mistakes made during the formation of the Nuclear Waste Policy Act (and amendments). There were unique provisions, for example, placed in the NWPA forbidding certain types of future study of specific types of geology. Those type of misplaced, self-serving laws are still causing our nation legal difficulties today. When in doubt, we believe the best path forward in any legislation aiming to capture the spirit of the BRC’s recommendations is to leave interpretations up to individual states and to avoid any federal language that might obstruct this process.

In summary, our recommendations to the proposed bill, as it currently stands, are as follows:

1. Delink interim storage from repository development.
2. Establish language allowing for defense high level waste to be stored in an interim storage facility.
3. Remove the bill’s “unduly burden” language as it applies to states with TRU waste or defense waste to avoid probable misinterpretation.

We remain inspired by the bi-partisan, sincere efforts the four of you have displayed in putting together our nation’s nuclear plan. We believe this bill, once complete, may well create a responsible national stewardship plan that will withstand the test of time. Our organization thanks you all again for your contributions to solving our nation’s nuclear waste crisis and your decades of service to this great nation.

STATEMENT OF DAVID A. WRIGHT, CHAIRMAN, SOUTH CAROLINA PUBLIC SERVICE
COMMISSION, NUCLEAR WASTE STRATEGY COALITION

Dear Chairman Bingaman & Ranking Member Murkowski:

The Nuclear Waste Strategy Coalition (NWSC) thanks the Senate Energy & Natural Resources Committee for convening a hearing on important issues pertaining to nuclear waste disposal and submits the following comments regarding S. 3469, the Nuclear Waste Administration Act of 2012. Described by its sponsor as a bill to implement the recommendations of the Blue Ribbon Commission on America’s Nuclear Future (BRC), S. 3469 and the related September 12th hearing provide an opportunity to begin building a record for future Congressional action on the BRC and other approaches to best meet the needs of our country with respect to nuclear waste policy reform.

The BRC report contained many recommendations that our members have long supported, including funding reform to protect consumers’ continuing fee payments and the Nuclear Waste Fund (NWF) balance; prompt development of consolidated interim storage and geologic disposal; and an independent waste management organization with the authority and resources to succeed.

Although not addressed by the BRC, the proposed Yucca Mountain repository remains the nation’s best hope for “promptly” developing geologic disposal. The Department of Energy (DOE) and the Nuclear Regulatory Commission (NRC) should resume the Yucca Mountain licensing process both as a requirement of law and as a matter of respect to taxpayers and electricity customers who have invested billions of dollars in the license application. The NWSC supports Yucca Mountain and the BRC recommendations, and we emphasize these are not mutually exclusive posi-

tions. Nothing in the BRC report precludes resumption of work on Yucca Mountain. In fact, the BRC recommendations may be viewed as complementary steps to address needs in the interim and over the longer-term. Specifically, consolidated interim storage is needed until a repository is opened, and an additional repository—perhaps sited using a consent-based process—will be needed under existing law.

With that context, the NWSC provides feedback regarding certain provisions of S. 3469:

Independent Waste Management Organization

Following years of budget cuts, management turnover, and missed deadlines, our members wholeheartedly support the BRC recommendation for a new, single-purpose organization to develop and implement a focused, integrated program for the transportation, storage, and disposal of nuclear waste. Such an organization could be structured numerous ways. We prefer models that ensure accountability but reasonably insulate the organization from political interference and excessive turnover in key positions. Additionally, stakeholders should serve in some type of oversight or advisory capacity. The proposed Nuclear Waste Administration in S. 3469 is lacking with respect to some of the key elements noted here. While not endorsing any one model at this point, we prefer the government-owned corporation model as recommended by the BRC over models that set up government agencies with both politically-appointed leadership and oversight boards that tend to change with every administration. Finally, regardless of the model chosen for transferring nuclear waste management functions out of DOE, guidance to facilitate a smooth transition would be helpful.

Funding Reform

Consistent with the BRC recommendations, the Administration, with Congressional support, needs to fix the funding for the nuclear waste program. The BRC eloquently stated the importance of reforming the existing funding mechanism as follows:

The success of a revitalized nuclear waste management program will depend on making the revenues generated by the nuclear waste fee and the balance in the NWF available when needed and in the amounts needed to implement the program.

In a letter to the President over a month before their report was issued, the BRC Co-Chairs delineated near-term steps for timely actions that the current unsustainable situation warrants. Unfortunately, those recommendations have not been followed. As for S. 3469's creation of a new Working Capital Fund, we commend the effort to stop future raiding of consumer payments intended for the program. However, access to the Working Capital Fund would be subject to appropriations, potentially limiting the Administrator's ability to carry out necessary program activities. Also, we support NARUC's suggestion to strengthen financial support of the new organization by transferring the interest earned on the NWF balance to the new Working Capital Fund. Finally, we would like assurance that the balance in the NWF will be made available when program needs dictate.

Consolidated Interim Storage

Consolidated interim storage (CIS) should be authorized and funded as a safe, cost-effective option for managing spent nuclear fuel and high-level radioactive waste from decommissioned and operating plants. While a permanent facility is being licensed and constructed, one or more CIS facilities would permit the federal government to begin meeting its obligations and reduce taxpayer liabilities associated with the government's delay. As such, we support the BRC call for prompt efforts to develop CIS with used nuclear fuel from the decommissioned reactor sites "first in line" for transfer. We were delighted to see that approach in the Senate appropriations language introduced earlier this year, and we suggest that comprehensive reform proposals such as S. 3469 expressly include language to ensure that CIS is authorized.

Although well-intentioned, the linkage between CIS and progress on a permanent disposal facility in S. 3469 prevents site-specific flexibility and does not need to be legislatively mandated. Recognizing a need for disposal under any scenario, the country must promptly site and construct a permanent disposal facility, and we urge Congressional efforts to properly fund the repository program accordingly. That would best ensure that current dry cask storage and future CIS facilities do not become de facto permanent disposal facilities. At the same time, we need authorization and appropriations for CIS that affords as much flexibility as possible. In a consent-based siting scenario, potential CIS facility host communities would be empow-

ered to assess and manage the risks of becoming de facto permanent facilities, and they will undoubtedly do so.

Additionally, the bill's requirement that utilities settle their lawsuits against the federal government in order to be permitted to use a CIS facility would seem to perpetuate the untenable situation of prolonged on-site dry cask storage and mounting federal government liability. We need not remind Congress about which entity has not met its obligations under the law and per its contracts with utilities. The federal government still has a roadmap for avoiding future liability via performance.

Consent-Based Siting

With respect to consent-based siting processes, the NWSC emphasizes the need for flexibility so as not to limit creative and effective solutions that may be proposed by potential host communities. With that in mind, we agree that is important to have an enforceable agreement at some point.

While many of the BRC recommendations require legislative solutions, DOE should take action immediately to advance BRC near-term recommendations under existing authority. Until that happens, DOE should be held accountable to deliver a plan that reflects a sense of urgency, outlines specific actions, and takes ownership for the country's high level radioactive waste. Therefore, we urge you to remind DOE of the Senate's interest in receiving the implementation plan.

In addition, it appears likely that the court will soon order the NRC and DOE to resume the Yucca Mountain licensing process. DOE and NRC should have executable plans in place to do so. We urge you to request a specific plan, including the resources required for completing the licensing process, from DOE and NRC.

Thank you for your leadership in initiating the dialogue pertaining to certain BRC recommendations. The NWSC stands ready to work with you and your Congressional colleagues, the Administration, and DOE to advance meaningful nuclear waste policy reform. Please let us know if you would like to discuss further.

NATIONAL CONFERENCE OF STATE LEGISLATURES,
Washington, DC, September 14, 2012.

Hon. JEFF BINGAMAN,
Chairman, Committee on Energy and Natural Resources, U.S. Senate, 304 Dirksen Senate Building, Washington, DC.

Hon. LISA MURKOWSKI,
Ranking Member, Committee on Energy and Natural Resources, U.S. Senate, 304 Dirksen Senate Building, Washington, DC.

Re: Nuclear Waste Administration Act of 2012 (S. 3469)

DEAR CHAIRMAN BINGAMAN AND RANKING MEMBER MURKOWSKI,

On behalf of the National Conference of State Legislatures (NCSL), I applaud this committee for moving the debate concerning America's nuclear energy issues forward by building on the recommendations for a new national radioactive waste management strategy made by the Blue Ribbon Commission on America's Nuclear Future (BRC) in its final report issued on January 26, 2012.

NCSL is the bi-partisan national organization representing the 50 state legislatures and the legislatures of our nation's commonwealths, territories and the District of Columbia. NCSL has a long history of working on nuclear energy issues. Specifically, NCSL's Nuclear Legislative Working Group, of which I am the chair, 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 also helps to form NCSL policy directives on this and other topics. I am also a member of NCSL's Executive Committee and serve on NCSL's Energy Supply Task Force. The task force explores current energy policies in the United States and makes recommendations for changes to current NCSL policy related to energy issues.

NCSL has adopted two applicable policies on these topics, Radioactive Waste Management Policy Directive and National Energy Policy Directive, which have been submitted as attachments to these written remarks. These two policies serve as the foundation for these remarks and our support of congressional efforts to find a solution to nuclear waste management in the U.S. including:

- development and licensing of a high-level waste/used nuclear fuel permanent disposal facility;
- establishment of consolidated interim storage facilities at technically and scientifically suitable sites;

- creation of a public-private partnership to manage the back end of the nuclear cycle; and
- efforts to ensure the Nuclear Waste Fund is used for its intended purpose of managing radioactive wastes.

NCSL commends the inclusion of state consultation in the consent based approach to siting radioactive waste facilities, within the Nuclear Waste Administration Act of 2012. However, it is vital that state legislators, and not just a state's governor, be consulted regularly to ensure that such a decision is made with the appropriate levels of support. Under the Nuclear Waste Policy Act, it is clearly stated that the Department of Energy will work with states, including state legislators. 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.

While Congress and the federal government work to develop long-term disposal solutions, NCSL supports federal action to develop consolidated interim storage facilities to temporarily house high level radioactive waste inventories until a permanent repository is operational. NCSL also supports use of the Nuclear Waste Fund to provide interim storage financing mechanisms and incentives to voluntary host communities. Addressing the need for interim storage facilities will help advance national efforts to address spent fuel storage and high level radioactive waste management as long term storage plans are developed.

Finally, NCSL urges enactment of legislative language that would ensure that the Nuclear Waste Fund is used for its intended purpose to support the establishment and implementation of a nuclear waste management program. Additionally, such language should establish a firewall so that fees deposited in the Nuclear Waste Fund are used for nuclear waste management purposes and are not subject to non-related federal discretionary spending.

Thank you for the opportunity to weigh in on this important issue. NCSL has a long history of working on issues related to nuclear waste management and welcome the opportunity to continue to work with Congress to advance this conversation and build on the recommendations of the Blue Ribbon Commission and the proposals discussed in today's hearing. Please feel free to contact NCSL staff Ben Husch (ben.husch@ncsl.org) or Tamra Spielvogel (tamra.spielvogel@ncsl.org) for more information.

Sincerely,

SALLY YOUNG JAMESON,

Maryland House of Delegates, Chair, NCSL Nuclear Legislative Workgroup.

ATTACHMENT.—RADIOACTIVE WASTE MANAGEMENT

The federal government should work with NCSL and similar organizations in an effort to ensure that state legislators are included in all aspects of nuclear waste management strategies.

Low-Level Waste—NCSL maintains that states are best prepared to license and regulate lowlevel waste disposal facilities that operate within their borders in order to protect the health, safety and welfare of their citizens. NCSL urges the federal government to continue to provide states both with support and flexibility in their efforts to dispose of low-level radioactive waste. States and state compacts should have authority to limit/allow the import and export of waste to and from their state or region. The federal government should adopt policies that clarify the responsibility of the federal government for federal waste, identify any federal waste that might be disposed at compact facilities, and ensure that any federal waste disposed of at compact or unaffiliated state facilities is subject to negotiation and the same laws, regulations, fees and requirements as nonfederal waste. The federal government should adopt clear policies with regard to naturally occurring and accelerator produced radioactive material waste and mixed wastes that respect states' authority to protect the health, safety and welfare of their citizens. NCSL encourages the federal government to work with NCSL toward these ends.

High-Level Waste and Used Fuel Management

NCSL urges the federal government to expeditiously research, develop and license a high level waste/used nuclear fuel disposal and consolidated interim storage facilities at technically and scientifically suitable sites. NCSL favors the creation of a public-private partnership to manage the back end of the nuclear cycle. The federal government should consult with states at each step of the process to ensure they play an integral role in the development of high-level waste/used nuclear fuel storage and disposal policies and obtain state, local and tribal government informed consent before locating permanent disposal or consolidated interim storage facilities.

The federal government should provide fair and equitable compensation to state and local governments of host states. This should include funding of independent oversight activities by state executive and legislative branches so that the host state may participate in and conduct its own assessments of a proposed waste repository site and disposal technology. The federal government should comply with state laws and regulations during the process of site selection and characterization, and the construction, operation and decommissioning of permanent disposal or consolidated interim storage facilities.

Consolidated interim storage facilities should be licensed for a specific, limited period of time not to exceed 25 years. High-level waste/used nuclear fuel recycling should be a priority waste management strategy.

Annual funding from the Nuclear Waste Fund should be used for nuclear waste management and not subject to non-related federal discretionary spending. These funds should be isolated for developing permanent disposal and consolidated interim storage facilities.

Transportation of Radioactive Waste and Used Nuclear Fuel

NCSL urges the federal government to ensure safe and reliable modes of transportation of radioactive wastes. DOE should seek to enter into a memorandum of understanding with each corridor state to spell out responsibilities, liability, compensation, response time, cleanup, shipping, planning and other duties connected with emergency situations. State, local and tribal governments should be given funding and technical assistance for ongoing emergency preparedness, independent safety inspections of drivers, vehicles and shipping containers, training of state and local public safety officials along radioactive waste transportation routes, and state emergency management communications centers. State, local and tribal governments should be involved in a meaningful manner with regard to radiation emissions standards, cask designs, support facilities, transportation equipment and other elements of the transportation system. The federal government should respect state and tribal authority to assess reasonable fees which fund activities connected to the safe routine transportation of high-level waste/used nuclear fuel shipments. The federal government should assure transportation accident prevention through the use of superior drivers; carrier compliance with shipping contracts and all applicable federal, state and local regulations; independent safety inspections of drivers, vehicles and shipping containers; designation of safe parking areas during abnormal conditions; advance notice to the appropriate state and local agencies regarding shipments; and state access to information on shipments' status (i.e. real-time shipment tracking information where appropriate). Special criteria should be applied to the shipment of high-level waste/used nuclear fuel, including the development of guidelines for routing when shipping by rail, the use of dedicated trains moving at safe speeds for rail shipments, safety inspections at origin and enroute, and fullscale testing of casks used for used fuel transport.

Defense-Generated Transuranic (TRU) Waste

NCSL urges the federal government to appropriate adequate funds and expedite its responsibilities with regard to disposal of defense-generated transuranic (TRU) waste. The federal government should implement a compensation program that recognizes equity considerations for state and local governments hosting a TRU waste repository and the federal government's obligation to provide such compensation. Host communities should be given assistance to subsidize and maintain an independent environmental monitoring and analytical laboratory to assure the character of the waste and ensure public confidence and safety.

Federal Facilities Cleanup

The states insist that the cleanup and disposal programs at the federal government's network of nuclear weapons production facilities and national research labs advance in a safe, costeffective and expeditious manner. The U.S. Department of Energy, the Department of Defense and any future owners should be subject to all state laws governing the cleanup of hazardous and radioactive waste materials. States are also committed to the cleanup and conversion of closed military and other federal facilities containing hazardous and radioactive waste materials to other beneficial uses as soon as possible. NCSL encourages the Department of Defense to lessen the impacts of closing these facilities by entering into partnerships with business and other private interests in order to turn them into sites of commerce and development.

All federal cleanup efforts must be conducted in full consultation with the affected state, tribal and local governments. An ongoing dialogue with the states should be maintained to ensure effective state involvement in critical cleanup related decisions. Cleanup work must be accomplished in strict compliance with federal facility

agreements and federal and state laws governing the cleanup of hazardous and radioactive waste materials. The federal government should give state and federal regulators complete enforcement authority necessary to ensure such compliance.

The federal government should continue to use the contract review process to provide effective oversight and to evaluate integrated contracts for cost accountability. Cost-effective solutions must be developed and implemented by federal agencies to meet cleanup standards that protect human health and the environment. State, tribal and local governments must have a continuing, substantive role in the planning and oversight activities of the waste-management effort. The Department of Energy must recognize that cultural resources and artifacts may be present on DOE sites, and must partner with affected Indian tribes to identify and mitigate impacts to those resources.

Pollution prevention practices should be followed and whenever possible recovered materials should be recycled or reused. Action should be taken to manage federal radioactive, hazardous, and mixed waste sites as soon as possible, but safety and quality cleanup must remain the priority. Federal cleanup efforts should enforce priorities and meet milestones set forth in federal-state consent orders regarding the cleanup of specific sites. A fully funded and comprehensive long-term stewardship program for all of the federal facilities must be developed to ensure that communities are protected in perpetuity.

ATTACHMENT.—NATIONAL ENERGY POLICY DIRECTIVE

National Energy Policy Directive NCSL Energy, Transportation and Agriculture Standing Committee The National Conference of State Legislatures urges the federal government to continue working cooperatively with state, local, and tribal governments to develop, implement and maintain an expansive, integrated, environmentally-sensitive and cost-effective national energy policy. Principles NCSL believes the following principles should guide the development and implementation of a national energy policy:

- Promotion of the most efficient and economical use of all energy resources.
- Promotion of energy conservation and efficiency and the development and use of alternative and renewable energy supplies.
- Promotion and provision of incentives for the development and optimal use of all energy resources and new facility infrastructure.
- Assurance that various domestic energy sources are continually developed, maintained and stored to prevent supply emergencies and promote energy independence.
- Consideration and assessment of environmental costs and benefits for all energy resources, fuels and technologies in rendering legislative, regulatory and market decisions regarding energy production and use.
- Provision of an affordable and reliable energy supply for all citizens.
- Examine the feasibility of, and where feasible, promote state-wide or regional minimum storage level requirements for heating oil for states dependent on this fuel.
- Specification and balancing of clear lines of local, state and federal regulatory authority.
- Development of both short and long-term strategies to provide adequate energy supplies, efficient utilization of those supplies and optimum cost effectiveness.
- Promotion of the education of school-age children regarding energy resources, consumption, conservation, and production and regarding environmental protection, safety and risks in energy production.
- Assurance of expanded energy research and development and broadening of the citizenry's access to energy-related information.
- Assurance of participation of state and local officials in the development and implementation of a national energy plan and strategy.
- Avoidance of mandates, particularly unfunded mandates, upon state and local governments as well as avoidance of pre-emptive federal laws in developing a national energy policy.

Implementation

NCSL believes development of a national energy strategy should contain at a minimum these components:

- An assessment and forecast of our nation's energy future and its impacts;
- An evaluation and ranking of short and long-term energy options available to the nation;
- An evaluation of possible energy futures which provide greater benefits to our citizens;

- The development of recommendations for energy options and energy futures that the nation should pursue, with the establishment of national targets or goals;
- An evaluation and recommendation of implementation mechanisms including, but not limited to, incentives, technical assistance, educational programs, regulatory standards or guidelines to achieve the targets or goals;
- Considers energy sources based on the lowest cost, cost benefit analysis, revenue loss, cost to consumers, reliability, and environmental or other impacts. Additionally, energy policy alternatives that would improve our energy security without imposing significant new costs, while balancing the need for environmental protection, should be implemented.
- A coordinated effort between state and federal government in the development of producing a national energy policy where the federal government consults closely with state legislatures, devising mechanisms to bring state legislatures into the energy decision-making process as full participants on a continuing basis and ensuring the inclusion of representatives of the legislative branch of state government in all state-federal working groups dealing with energy policy.

Conservation and Energy Efficiency

NCSL supports a national energy policy that promotes energy efficiency in a variety of ways including both setting and strengthening policies as technologies improve while recognizing the significance of economic costs on various segments of the population including rural areas. NCSL supports the use of:

- Corporate Average Fuel Economy Standards for automobiles and light duty trucks, including sport utility vehicles and minivans;
- Energy efficiency provisions in model building codes (including lighting efficiency standards and weatherization);
- “Whole-building” and life cycle costing approaches to construction and retrofitting that integrate energy efficiency technologies and practices;
- home appliance and heating and cooling unit efficiency standards;
- Waste recycling and reduction standards for industrial manufacturing;
- Standards for conservation in electrical production and supply including cogeneration;
- Use of alternative energy; and
- A national transportation policy that emphasizes various modes of transportation, including passenger rail and transit, as well as promoting energy efficiency.

New Source Review Program (NSR)

NCSL urges the Environmental Protection Agency (EPA) to reform the NSR program to achieve improvements that enhance the environment and increase production capacity, while encouraging efficiency, fuel diversity and the use of resources without weakening the requirements intended to reduce emissions from new or modified sources of air pollution. Routine maintenance, repair or replacement activities which are not major modifications should not trigger NSR requirements.

Government Support for Renewable Energy and Energy Efficient Products and Industries

NCSL believes that federal and state governments’ leadership role in the purchase and use of new energy efficient and renewable energy technologies and products should be expanded and supports incentives for consumers to purchase energy efficient products. The federal government should continue to establish incentives for energy efficient fleet procurement industries and manufacturers of energy efficient products as well as continue to encourage the use of innovative financing technologies to increase energy efficiency in buildings such as performance contracting and long-term leasing and purchase agreements for energy efficient products. All government-owned buildings should make use of economical energy conservation programs, demonstrating state of the art efficiencies whenever possible.

Renewable Energy

NCSL believes that in recognizing a spectrum of renewable energy resources including, but not limited to geothermal, hydropower, biomass, wind, photovoltaics and solar, the federal government should institute a long-range, stable Renewable Energy Development Program which identifies and supports development of renewable energy sources from research and development through demonstration projects and commercialization in a cooperative effort among industry, higher education, and national laboratories.

NCSL recommends that:

- Federal action should be flexible, allowing for a range of complementary strategies at the state and federal level maintaining a strong role for state government in any federal action.
- Federal legislation should provide states the authority and flexibility to work within a overall framework that affords states the ability to chose from a range of options & apply the law effectively in the most cost effective, timely and efficient manner for each state.
- Federal legislation should not preempt state governments from enacting stricter or stronger measures within their jurisdiction.
- Congress must authorize and appropriate sufficient funds for state and federal governments to implement any federal legislation. These funds should be newly authorized appropriations, not reprogrammed resources.

Energy Emergency Preparedness

NCSL believes that the federal government should support and enhance energy emergency preparedness in order to reduce the potential impact of petroleum supply disruptions.

A national energy emergency preparedness program should include the following principles:

- Initial efforts should focus on strategies to reduce the nation's dependence on foreign oil to avoid future emergencies.
- Voluntary conservation, is preference to mandatory measures, wherever possible;
- When any mandatory responses are required, they should be phased in, beginning with the least stringent measures, with gasoline rationing reserved for only the most severe shortage;
- Minimize undue hardships on states and regions heavily dependent on motor vehicle transportation with rationing allotments and allocation plans being based on state and regional needs and strategies rather than on national averages.
- Priority shall be given to home heating needs including home heating oil and propane, provided homes are adequately insulated.

NCSL believes changes need to be made at the national level to ensure that the country has sufficient, affordable supplies of energy, by encouraging more efficient use of energy to reduce U.S. reliance on foreign oil. As such, federal investments in both energy efficiency and research in developing new and alternative energy technologies should figure significantly in a national energy policy.

Coal

NCSL believes the federal government should support the efficient, responsible production and utilization of the United States vast resources of coal, largest reserves of any nation in the world, and the strategic global economic advantage it provides.

- Provide continued support for Clean Coal Technology research, in partnership with the private sector. Such support, through additional research and technology development in clean coal usage, should include work in pre-combustion, combustion, postcombustion, and coal conversion areas with desulfurization efforts a top priority.
- Jointly address transboundary environmental issues with Canada and Mexico.
- Continue to support the acid rain program of the Clean Air Act of 1990 that phases—in reductions in emissions from coal burning power plants.
- Seriously consider coal gasification as an alternative to the use of coal in a conventional manner.
- Concurrently reclaim and restore mined lands to an environmentally appropriate condition.
- Consider the effects on local infrastructure needs and the costs of prime farmland protection and land reclamation in the development of a national coal program.
- Accelerate the financing of activities under the abandoned mine reclamation fund and a federal commitment to reclamation should be strengthened.
- Avoid adopting federal policy that has implications for land development or management without accommodating the laws and policies of affected states.

Crude Oil

NCSL believes the federal government should promote and encourage domestic production of crude oil in an efficient and environmentally sound manner in order to both supply United States consumers with a secure source of petroleum as well

as provide a stabilizing influence to the world price of crude oil. As such, the extraction and transportation of crude oil must be done only with safeguards for the protection of the environment. The federal government should consider incentives for domestic exploration, maintenance of stripper wells, but excluding other extractions, and technological research for methods of enhanced oil and gas recovery that are environmentally safe and in accordance with state policy as well as an increase in research and development in the area of new energy generating technologies including but not limited to biofuels, electric cars, fuel cells, hybrid engines, and alternative fuels particularly for transportation.

The federal government should manage United States imports by diversifying import suppliers, pursuing a Pan American Energy Alliance with Western Hemisphere producing nations, and expanding a dialogue with suppliers worldwide.

Oil Overcharge Settlement Funds

NCSL is appreciative of Administrative and congressional action to disburse authorized unclaimed overcharge monies to the states, via the oil overcharge settlement funds.

NCSL believes that the refunded oil overcharge money disbursed to states should be used for energy-related purposes. As emerging federal and state emphasis on conservation and energy efficiency programs has created a state need for additional funds to develop and implement new programs, some states are unable to meet the growing demands of their energy programs with state money alone. Therefore, NCSL strongly supports expeditious pass-through of oil overcharge settlement funds by the Department of Energy to states only to supplement, and not supplant, energy related programs. NCSL opposes efforts to reduce or eliminate or take credit for federal funding of existing energy related programs such as the Weatherization Assistance Program, the Institutional Conservation Program, the State Energy Conservation Program, and programs authorized to be funded by the Energy Policy Act of 1992, based on the receipt of oil overcharge settlement monies. NCSL also opposes the diversion of oil overcharge monies from their intended energy uses.

Additionally, as oil overcharge and settlement funds are depleted, Congress is encouraged to appropriate replacement or supplemental funds to facilitate continued state involvement in worthwhile energy programs.

Natural Gas

NCSL believes the United States should encourage domestic production of natural gas in an environmentally sound manner. The federal government should adopt legislation that funds and authorizes states to assume a more prominent role in the regulation of pipeline safety. A partnership with the federal government will enhance the safety of pipelines and the protection of residents by decreasing the risk of pipeline accidents.

State Primacy in Regulation of Oil and Gas and Production Wastes

Since oil and gas exploration and production occur in several different states in distinct regions, NCSL believes that primary responsibility for the regulation of used oil and of oil and gas exploration and production wastes is best handled by the affected state to accommodate site-specific conditions and environmental considerations should not be preempted by federal legislation or regulation. As such, NCSL supports the continuation of exempting used oil and waste generated in oil and gas exploration and production from classification as hazardous waste under the Resource Conservation and Recovery Act (RCRA).

Revenues from On-Shore and Outer Continental Shelf Drilling

The Federal Oil and Gas Royalty Management Act of 1982 (30 U.S.C. 1701 et. seq.), requires 50 percent of the revenues from federal on-shore drilling is paid to the state in which the lease is located and ensures that state legislatures shall direct the use of these funds.

- NCSL supports the state legislatures' role in the appropriation of these funds.
- NCSL opposes any effort by Congress or the Administration to reduce the revenue share paid to states in an effort to off-set federal expenditures on a temporary or permanent basis.

NCSL does not support or oppose additional exploration or production on the Outer Continental Shelf (OCS). However, to the extent that mineral extraction occurs, Congress is urged to:

- Authorize and appropriate 50 percent of the Outer Continental Shelf (OCS) revenues to the states;

- Ensure the state legislatures' participation in the appropriation of these funds; and
- Provide state lawmakers the flexibility to target these funds to their respective state's natural resource priorities.
- OCS revenue sharing with the states should be in addition to and not replace other Federal funding programs.
- Preserve state authority to impose moratoriums on or allow for mineral exploration, development and production activities on the OCS.
- Lift federal fees charged to states for use of sand, gravel and shell resources taken from the OCS for use in beach nourishment and other coastal erosion mitigation activities.
- Give states full review of development and production of mineral resources on the OCS.

Nuclear

NCSL believes that,

- Nuclear Energy generates an essential share of the nation's clean, non-emitting, zero carbon baseload electricity.
- The Nuclear Regulatory Commission (NRC) should provide strong, independent oversight of all commercial nuclear plant operations, including plant licensing (both license extensions, where appropriate, and over the ongoing construction of new reactors) and used fuel and radioactive waste management, transportation and disposal, to ensure public health and safety. The rigorous NRC safety review process already employed in certifying new reactor designs should be maintained as additional designs are considered.
- The federally-supported public-private partnership that is pursuing the design, development and licensing of Small Modular Reactors should focus on maximizing the economic development and positive trade balance potential of this emerging technology. The federal government should assist the ongoing efforts of various states to establish U.S. leadership in this promising market.
- A federal government program for the long-term treatment and disposal of used nuclear fuel and high-level radioactive waste, already funded by nuclear utility ratepayers, should be pursued with the highest priority given to the safe reprocessing or transportation of waste and to the safety and technical suitability of storage or disposal sites. Such a program should be developed in full consultation with all of the affected states.
- Meaningful and effective state participation is necessary in public safety planning and transportation of commercial used nuclear fuel and high-level waste.
- The recommendations of the Blue Ribbon Commission on America's Nuclear Future appropriately comport with the longstanding position of NCSL in favor of a path forward for used fuel. In particular, NCSL favors: creation of a public-private partnership to manage the back end of the nuclear fuel cycle; assurance that ratepayer contributions to the Nuclear Waste Fund be available solely for their intended purpose; establishment of one or more NRC-licensed centralized interim used fuel storage facilities in willing host communities and states (with consultation of all state, local and tribal officials and other interested parties).
- States must continue to have the right to monitor operating conditions at nuclear power plants, waste storage and disposal facilities, and to exercise regulatory authority where consistent with federal law.
- Federal funding should complement private sector investments in the areas of waste management technologies, nuclear fusion, and plant retrofit and life extension.
- The tax treatment of decommissioning funds should be updated to ensure that existing funds are treated in the manner intended by the tax laws and to reflect new business conditions.

Electricity

NCSL believes that the federal government should promote

- Energy efficiency and conservation to lower the demand for electricity.
- The development of sources of electric energy that are sufficient to meet national needs, secure from external threat, reliable in availability and delivery, safe relative to people and the environment, and efficient for use in homes, businesses, industries, and as an alternative vehicular fuel.
- The implementation of aggressive efficiency and conservation programs are implemented.
- Legislation that recognizes the tremendous regional diversity, especially with regard to capacity of the electricity sector

Public Benefits/Environment

NCSL believes that:

- States should maintain the authority to require public benefits programs on a nondiscriminatory basis, including those that support reliable and universal service, energy efficiency, renewable technologies, research and development, and low-income assistance. Additionally, existing federally sponsored public benefits programs should be maintained in a restructured market and electric industry restructuring should be consistent with any federal environmental laws, including the Clean Air Act.
- Implementation of Federal legislation that fails to recognize market mechanisms inevitably penalizes one region or state or another and that mandate programs are counter to the concept of restructuring, which encourages the efficiencies of market competition.
- As states are in the best position to evaluate market force considerations, Congressional legislation should not limit, through the use of mandates or otherwise, state flexibility in addressing market mechanisms in electric restructuring plans.
- Non-traditional energy production should be encouraged and that the federal government must maintain and increase its commitment to cost effective energy conservation and efficiency while maintaining adequate and reliable energy. As such, power providers, equipment and appliance manufacturers, and consumers should be given legislative and regulatory incentives to promote these goals.

Consumer Protection and Education

NCSL believes that:

- The safety, reliability, quality, and sustainability of services should be maintained or improved and that all consumers should have access to adequate, safe, reliable, and efficient energy services at fair and reasonable prices, as a result of competition.
- States should retain the authority, with the assistance of the federal government as needed, to protect consumers from anticompetitive behavior, undue discrimination, poor service, market power abuses, and unfair service practices.
- States should maintain the authority to establish or require comprehensive consumer education and outreach programs to minimize public confusion and provide information so consumers are able to make informed choices and participate effectively in a restructured market.

Regulatory Authority

State regulatory bodies are close to consumers, utilities, industries, and concerned for state environmental and economic well being. State regulatory bodies are in the best position to evaluate consumer needs, and address questions relative to fuel choice, economic development implications, and system reliability.

NCSL strongly supports and urges the continuation of the state legislative oversight for the approval and siting of all major energy conversion facilities, subject to minimum federal standards established only after the fullest consultation with state governments, both executive and legislative branch. State authority over the siting of energy facilities should not be preempted by federal law.

NCSL acknowledges the need for a robust national transmission system that can support new technology and allow for additional power production to be brought onto the grid. NCSL urges Congress to allow provisions included in the 2005 Energy Policy Act relating to state authority of liquefied natural gas terminal siting to be implemented and studied before any attempt is made to expand the preemption to further limit the state role in siting of these energy infrastructure components. NCSL opposes any such expansion of these provision but urges Congress at a minimum to allow for the complete implementation of the new standards before reopening the issue.

Research and Development

NCSL believes that the cornerstone of a national energy policy should include a broad research and development component. Specifically, federal government research and development funds for clean coal, nuclear research, basic science and related efforts ought to be continued. However, these efforts should be supplemented with increased long-term incentives and federal funding for research and development projects emphasizing emerging technologies, including, but not limited to, renewable resources, energy conservation, efficient use of energy, alternative fuels, oil and gas recovery, superconductivity, and fuel cell technology and should be designed to encourage private sector participation with federal and state representatives.

NCSL urges Congress to provide explicit recognition in the Internal Revenue Code that sustainable energy (conservation, efficiency and customer sited renewable) is a private activity serving a public good.

Renewable Energy R&D Market Support

NCSL encourages federal development of alternative technologies that improve renewable energy efficiencies, cut costs, and assist in integrating renewable energy into existing energy systems. The implementation of federal standards for the deployment of these new technologies should not undermine established programs at the state level to integrate these resources into existing energy systems. NCSL also believes in the need for a translation and distribution system for international technical and marketing papers on renewable energy and that the U.S. should strive for excellence in the use, manufacturing and marketing of renewable energy resources and technologies.

Wave Energy and Tidal Energy

NCSL strongly believes that the United States should increasingly encourage all forms of renewable energy, including avenues of renewable energy that are not currently in the forefront; specifically wave energy, wave farms, and tidal energy.

NCSL requests that the federal government demonstrate global leadership and:

- Recognize the importance of wave energy and tidal energy to the future of the United States;
- Support the research and development of advances in wave energy and tidal energy technology, including the ability to tow and set up the equipment in the oceans through loan guarantees, grants and tax incentives;
- Research and create a “Wave Hub,” or similar infrastructure necessary for integrating wave- and tidal-energy production facilities into the national grid; and
- Encourage the demonstration and deployment of wave energy and tidal energy beyond the limited scope of R&D to ensure competitive and equitable access for wave- and tidal-energy projects and provide a fair opportunity to supply the nation with a reliable and renewable energy.

Education and Information

NCSL believes that it is essential that the nation, including its elementary and secondary school-age children, be made fully aware of energy use and costs, production processes, alternative energy resources, the importance of energy efficiency and conservation and the impact energy usage has on our environment. NCSL recommends that public and private sector education efforts be initiated, expanded and appropriately funded.

The federal government should promote both energy conservation education and fund research into conservation technologies while federal funding of energy conservation programs, including grants to states, should be enhanced. Such efforts should emphasize that significant economic and environmental benefits can be achieved through increased efficiency and conservation.

NCSL also believes that an essential step in formulating a balanced energy policy is to develop the necessary data and employ analytical methods and models to assess the efficiency, productivity costs and risks of the various energy choices available to the nation. As such, NCSL recommends the development of this analytic base by the Department of Energy, with assistance from the Departments of Defense, Treasury and State, and the Office of Management and Budget, in conjunction with the states.

Transportation

NCSL believes that national transportation strategies must include public policy initiatives directed at broadening the efficient use of our energy resources. As such, policy initiatives should include, but not necessarily be limited to:

- Incentives and adequate funding for mass transit, high speed rail, magnetic levitation and other emerging transportation technologies;
- Fuel economy standards; and other market incentives for improving the energy efficiency of automobiles and light trucks;
- Federal, state, and local procurement policies favoring efficient vehicles;
- The encouragement of public-private partnerships.

WALL STREET JOURNAL ARTICLE SUBMITTED BY HON. RON WYDEN,
U.S. SENATOR FROM OREGON

- U.S. NEWS

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WASTE-PLANT DISPUTE BUILDS
SAFETY AND DESIGN CONCERNS SLOW CONSTRUCTION OF
NUCLEAR-PROCESSING FACILITY

By *ANDREW MORSE*

The U.S. Department of Energy is slowing construction of a facility to process the country's largest accumulation of radioactive waste, amid an increasingly acrimonious dispute about the design and safety of the \$12.2 billion project.

Energy Secretary Steven Chu visited the Hanford site in southeast Washington state last week, which department officials said was part of efforts to assess the safety of the nuclear-waste complex. Mr. Chu was accompanied by an expert panel he assembled following a trip in June to the plant after concerns were raised about the safety culture at the facility.

Department of Energy

An aerial view of the Hanford treatment plant in July.

Mr. Chu and the experts are reviewing the safety of rooms that will hold radioactive waste as it is processed at the vast complex, which will cover 65 acres and house four nuclear facilities, in addition to other components.

For decades, the government used the 586-square-mile Hanford site to produce plutonium for atomic weapons, including the Fat Man bomb dropped on Nagasaki during World War II. The work turned the land into one of the most toxic areas in the U.S., so after the Cold War, the DOE, the Environmental Protection Agency and the state set out to clean it.

Hanford's problems were highlighted last month when a DOE official who oversees engineering at the plant faulted the primary contractor, Bechtel National Inc., for problems, concluding that the company was "not competent" to serve as the facility's chief designer.

Frank Russo, who manages the project for Bechtel National, a unit of Bechtel Corp., said many of the issues raised by the DOE official, Gary Brunson, are old and that the company had worked to fix problems. "All of them had been addressed at one time or another," Mr. Russo said.

Separately, the DOE last month discovered radioactive material between the walls of one of the site's newer double-shelled waste-storage tanks, which are designed to be superior to older single-shell tanks. The threat of leaks has been a concern for decades: In the past, according to a project website, one-third of the 177 underground tanks have experienced leakage of toxic material.

The DOE has enhanced monitoring of the double-shelled tank and has declared that it is stable.

Associated Press

Energy Secretary Steven Chu spoke to Hanford workers during a June visit.

Concerns over key parts of the facility are slowing construction, because the facility is being designed as it is built; as design issues crop up, building has to slow until those issues are addressed.

The issues are raising concerns of a delay in the opening of a project that has attracted the ire of environmentalists, federal lawmakers and even its own workers. The range of concerns include the safety and cost of the plant, as well as risks that radioactive sludge could seep into the nearby Columbia River.

On Aug. 29, Washington Gov. Christine Gregoire, a Democrat, wrote to Mr. Chu asking that he explain why the plant's schedule was at risk. Ms. Gregoire sought a meeting with Mr. Chu while he was at the site, but the two weren't able to coordinate their schedules, her spokeswoman said.

Expected to start full operations in 2022, the plant would separate and process 56 million gallons of radioactive and chemical waste. The waste would then be turned into glass logs—a form that makes it less likely to spread through the environment—that would be stored at the site. The plant is expected to operate for roughly 40 years.

The facility, called the Waste Treatment and Immobilization Plant has been the subject of controversy for years. Managers on the project have raised concerns about the design, as well as the safety culture at the project. Employees have brought lawsuits against Bechtel National.

One issue highlighted by Mr. Chu involves the design of a set of 18 rooms that will hold waste as it is treated for processing. The rooms, called "black cells" because workers won't be able to enter them when the plant is running, were to be built with limited monitoring equipment. The DOE now is considering whether more

instruments should be incorporated to monitor how the waste is settling, and whether openings should be larger so machinery, such as robots, could be sent in.

As a result, the government has slowed work on pretreatment and high-level radioactive waste facilities, said David Huizenga, a senior DOE adviser. Construction of two other buildings, a lab and a low-activity waste facility, are continuing on schedule, he said. The agency isn't fundamentally "changing or questioning the design" of the plant, Mr. Huizenga said.

Tom Carpenter, the executive director of Hanford Challenge, a group that has expressed concerns about the plant's design and that has been skeptical about the progress of construction, says resolving design issues takes on a new urgency following the discovery of the radioactive material last month. "I want this plant to work," Mr. Carpenter said. "We have no Plan B."

