Statement of

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on

S. 3469, Nuclear Waste Administration Act of 2012

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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.

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[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*").

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 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 (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 hamstrings 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.

Recommendation 3 - A Fundamental Change in Law is Necessary

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

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[2] EPA 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).

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 NWPA 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.

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 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.

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

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 security 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.