State Nuclear Safety Inspector Office
Maine CDC – DHHS

February 2012 Monthly Report to the Legislature

Executive Summary

As part of the State's long standing oversight of Maine Yankee's nuclear activities, legislation was enacted in the second regular session of the 123rd and signed by Governor John Baldacci requiring that the State Nuclear Safety Inspector prepare a monthly report on the oversight activities performed at the Maine Yankee Independent Spent Fuel Storage Installation facility located in Wiscasset, Maine.

The report covers activities at the storage facility, including the State's on-going environmental radiation surveillance and the national debate over the licensing and construction of a geologic repository for the disposal of spent nuclear fuel at Yucca Mountain in Nevada. The report's highlights assist readers to focus on the significant activities that took place during the month, both locally and nationally.

LOCAL:

- The State Nuclear Safety Inspector submitted his annual accounting report to the Commissioner's Office for their review prior to its forwarding to the Joint Standing Committee on Energy, Utilities, and Technology. The report presented the fees received from Maine Yankee, the expenditures for maintaining an oversight role as well as what funds were disbursed to the other state agencies providing oversight such as the Departments of Environmental Protection and Public Safety. According to the report the Interim Spent Fuel Storage Facility Oversight Fund has an available balance of $50,886.
- The Manager of the Radiation Control Program submitted for senior management review his 2011 Report of the Oversight Activities and Funding of The Interim Spent Fuel Storage Facility Oversight Fund. The report was prepared for the Joint Standing Committee on Energy, Utilities and Technology. The Report summarized the past year's activities of the State's Radiation Control Program, the State Nuclear Safety Inspector, the Department of Environmental Protection, the Department of Public Safety, and Maine Yankee.

The national highlights primarily focused on varied activities as noted below and included:

National:

- The Co-Chairs of the Blue Ribbon Commission on America's Future testified before House and Senate Committees on their eight recommendations to the President and Secretary of Energy on how best to manage the nation's nuclear waste. Some Representatives and Senators probed why Yucca Mountain, the only federally mandated geologic site in the country, was not considered in the report. Other Committee members were intent on absorbing the recommendations and how to implement them in meaningful legislation.
- The State of Nevada, the Nuclear Regulatory Commission (NRC), and the petitioners from the states of South Carolina and Washington, Nye County in Nevada, Aiken County in South Carolina, the National Association of Regulatory Utility Commissioners, and the three business leaders from the Tri-City area

near Hanford, Washington filed their final briefs and addenda with the U.S. Court of Appeals for the D.C. Circuit in preparation for their May oral arguments on the lawsuit filed by the petitioners against the NRC and its Chairman for unreasonably delaying the Yucca Mountain license proceedings.

- The Administration submitted its proposed Fiscal Year 2013 Budget to Congress. The Budget proposed $60 million for the Department of Energy's Used Nuclear Fuel Disposition Program. The Program will support development of technologies for storing, transporting, and disposing of used nuclear fuel as part of the near term recommendations of the Blue Ribbon Commission. It will also investigate fuel types and waste management approaches that would reduce the quantity of long-lived radioactive elements in the used fuel requiring disposal. The Administration's FY 2013 Budget also increased the Nuclear Regulatory Commission (NRC) spent fuel storage and transportation program by $3.8 million over the enacted FY 2012 budget. The bulk of the increase is for research to support the NRC's Waste Confidence Rule for extended storage out to 300 years.
- The Decommissioning Plant Coalition (DPC), the National Association of Regulatory Utility Commissioners (NARUC), the Nuclear Energy Institute (NEI), the Nuclear Waste Strategy Coalition (NWSC), the Sustainable Fuel Cycle Task Force Science Panel (SFCTF), and the State of Nevada submitted comments to the Nuclear Regulatory Commission (NRC) on the NRC's preliminary draft of an environmental impact statement to support its waste confidence rule. The DPC, NARUC, NEI, and NWSC expressed concerns that the NRC's environmental impact statement work was premature and could detract from the Blue Ribbon Commission's recent recommendations. The SFCTF urged the NRC to implement a more aggressive schedule while Nevada identified other topics such as terrorism, sabotage, human error, and transportation that should be included in the NRC's environmental impact study.
- A highlight that was not captured in the previous monthly reports was the Secretary of Energy's determination that there was no basis to propose an adjustment to Congress on the fee that nuclear utilities pay into the Nuclear Waste Fund for the Department of Energy's obligation to manage and dispose of spent nuclear fuel and high level waste. The conclusion was drawn despite:
    - Congress not appropriating any funds for the Department of Energy's and the Nuclear Regulatory Commission's nuclear waste management programs for Fiscal Year 2012.
    - Both the Department of Energy and the Nuclear Regulatory Commission terminating their Yucca Mountain programs.
    - Nuclear utilities currently paying $750 million annually in fees to the Nuclear Waste Fund.
    - The Nuclear Waste Fund presently accruing $1.2 billion in interest annually.
    - The Nuclear Waste Fund account having an existing balance of nearly $27 billion.

State Nuclear Safety Inspector Office

February 2012 Monthly Report to the Legislature

Introduction

As part of the Department of Health and Human Services' responsibility under Title 22, Maine Revised Statutes Annotated (MRSA) §666 (2), as enacted under Public Law, Chapter 539 in the second regular session of the 123rd Legislature, the foregoing is the monthly report from the State Nuclear Safety Inspector.

The State Inspector's individual activities for the past month are highlighted under certain broad categories, as illustrated below. Since some activities are periodic and on-going, there may be some months when very little will be reported under that category. It is recommended for reviewers to examine previous reports to ensure connectivity with the information presented as it would be cumbersome to continuously repeat prior information in every report. Past reports are available from the Radiation Control Program's web site at the following link: www.maineradiationcontrol.org and by clicking on the nuclear safety link in the left hand margin.

Commencing with the January 2010 report the glossary and the historical perspective addendum are no longer included in the report. Instead, this information is available at the Radiation Control Program's website noted above. In some situations the footnotes may include some basic information and may redirect the reviewer to the website.

Independent Spent Fuel Storage Installation (ISFSI)

During February the general status of the ISFSI was normal, with no instances of spurious alarms due to environmental conditions.

There were no fire–related or security-related impairments for the month. However, there were twenty-one security events that were logged and they were all traced to transient environmental conditions.

There were ten condition reports[1] (CR) for the month of February and they are described below.

1st-3rd CRs: Were written to track items associated with the January reportable event on inadequate compensatory measures during a snowstorm.
4th CRs: Was written to document an inappropriately labeled alarm description.
5th CR: Was issued to track open items from a preventative maintenance audit.
6th CR: Documented a vendor not performing appropriate cold testing on repaired components.
7th CR: Documented an issue with a security log sheet.
8th CR: Was issued to track open items from a surveillance of shift briefing activities.
9th CR: Documented the missed opportunity to update a form when the procedure was updated.
10th CR: Documented open items from a review of the implementation of the Emergency Plan.

[1] A condition report is a report that promptly alerts management to potential conditions that may be adverse to quality or safety. For more information, refer to the glossary on the Radiation Program's website.

Other ISFSI Related Activities

1. On February 2nd Maine Yankee submitted its input to the Radiation Control Program's annual report of oversight activities and funding to the Joint Standing Committee on Energy, Utilities and Technology. Their report summarized their involvement in the 2011 deliberations of the Blue Ribbon Commission on America's Nuclear Future, their working relationship with the State of Maine, the status of the Yucca Mountain license application, the Nuclear Regulatory Commission's investigation into extended storage of spent nuclear fuel, the status of Maine Yankee's lawsuit, and their projection of increased storage costs in the future due to "security or other regulatory changes".

2. On February 3rd the State Nuclear Safety Inspector submitted his annual accounting report to the Commissioner's Office for their review prior to its forwarding to the Joint Standing Committee on Energy, Utilities, and Technology. The report presented the fees received, the expenditures for maintaining an oversight role as well as what funds were disbursed to the other state agencies providing oversight such as the Departments of Environmental Protection and Public Safety. According to the report the Interim Spent Fuel Storage Facility Oversight Fund has an available balance of $50,886.

3. On February 13th the Manager of the Radiation Control Program submitted for senior management review his 2011 Report of the Oversight Activities and Funding of The Interim Spent Fuel Storage Facility Oversight Fund. The report was prepared for the Joint Standing Committee on Energy, Utilities and Technology. The Report summarized the past year's activities of the State's Radiation Control Program, the State Nuclear Safety Inspector, the Department of Environmental Protection, the Department of Public Safety, and Maine Yankee.

Environmental

Since the State's radiation monitoring of the ISFSI reports its results on a quarterly basis and the fourth quarter results were published in last month's report, there is nothing new to report this month.

Groundwater Monitoring Program

With all the tasks associated with the post decommissioning groundwater radiation monitoring Agreement between the State and Maine Yankee completed in January of this year, this section of the report will be discontinued.

Other Newsworthy Items

1. On February 1st the House Subcommittee on Energy and Environment held a hearing to review the Blue Ribbon Commission's recommendations to solve the nation's growing stockpile of nuclear waste. The witnesses before the Committee included the Co-Chairs of the Blue Ribbon Commission (BRC) on America's Nuclear Future, the Union of Concerned Scientists (UCS), the National Association of Regulatory Utility Commissioners (NARUC), the Citizens Against Government Waste (CAGW), the Lawyer representing Nevada but testifying only on his behalf, and presidents of two consulting firms. Both Co-Chairs expressed their concern over the ever growing costly consequences of inaction. NARUC expressed their frustration over ratepayers and ultimately taxpayers paying twice for disposal of spent nuclear fuel with no geologic repository available for decades. The UCS supported most of the recommendations from the BRC but was not persuaded of

the necessity of consolidated storage and preferred instead on-site storage. The representative from CAGW stated that "taxpayers and ratepayers have paid tens of billions of dollars over the last 25 years and will pay tens of billions more in the future for a national nuclear waste repository."

2. On February 1st the Wiscasset Newspaper published an article expressing the three Yankee companies' (Maine Yankee, Connecticut Yankee and Yankee Rowe in Massachusetts) optimism over the Blue Ribbon Commission's (BRC) recommendations. The three Yankees were very pleased with the BRC's recommendations for consolidated storage and for stranded fuel at decommissioned reactor sites to be first in line to move its spent fuel to a consolidated facility. The three Yankee companies were hopeful that the BRC's recommendations would provide the impetus to enact prompt and meaningful legislation. A copy of the article is attached.

3. On February 2nd the Senate Committee on Energy and Natural Resources held a hearing to review the Blue Ribbon Commission's recommendations on nuclear waste management. The Chairman of the Committee was interested on how Congress could absorb the recommendations, implement appropriate legislation and forge the political consensus to enact it into law. Only the Co-Chairs of the Blue Ribbon Commission on America's Nuclear Future testified.

4. On February 8th the National Association of Regulatory Utility Commissioners issued a resolution regarding the Blue Ribbon Commission's (BRC) recommendations. The resolution commended the BRC for their work, for NARUC to review the report and vow to work with all affected parties, to change how the fees are paid into the Nuclear Waste Fund, and to encourage the Administration and Congress to dedicate the fees solely for nuclear waste management instead of its current use to balance the budget. A copy of the resolution is attached.

5. On February 8th the House Committee on Science, Space, and Technology held a hearing to review the Blue Ribbon Commission's (BRC) Report to the Secretary of Energy and assess the "broader science and technology issues associated with spent nuclear fuel management". The hearing charter provided a historical perspective on nuclear waste management, a summary of the BRC final report along with the key recommendations from each of its three subcommittees, an overview of current Department of Energy (DOE) nuclear research and development, the BRC perspective on nuclear research and development, and key issues for the Committee to consider. The four key issues highlighted for the Committee were what near term steps could be pursued by DOE, how can DOE factor in the BRC's recommendations, how a "single-purpose organization" will function, and how would a "consent-based siting process work in practice". A copy of the charter is attached.

6. On February 8th the U.S. Nuclear Waste Technical Review Board issued a news release of their upcoming March meeting which will focus on the Department of Energy's work on geologic disposal of nuclear waste. The presentations will also include discussions on deep borehole disposal and technical site-selection criteria. A copy of the release is attached.

7. On February 10th the State of Nevada filed with the U.S. Circuit Court of Appeals for the District of Columbia its final brief as intervenor in the lawsuit against the Nuclear Regulatory Commission (NRC) and its Chairman. Nevada maintained that the NRC and its Chairman acted responsibly and did not unreasonably delay its consideration of the Yucca Mountain license application. On the same day Nevada also filed with the Appeals Court its joint appendix as intervenor in the lawsuit against the Nuclear Regulatory Commission (NRC) and its Chairman. The Appendix included six documents for the Court's consideration on their position supporting the Nuclear Regulatory Commission's conclusion that they did not unreasonably delay the Yucca Mountain license proceedings.

8. On February 10th the State of Nevada filed an unopposed motion to supplement its appendix with the U.S. Circuit Court of Appeals for the District of Columbia. The supplement is part of Nevada's response to the lawsuit filed by the states of Washington and South Carolina, Nye County in Nevada, Aiken County in South Carolina, the Tri-City business leaders near the Hanford reservation in Washington, and the National Association of Regulatory Utility Commissioners against the Nuclear Regulatory Commission and its Chairman for its decision to cease the Yucca Mountain license proceedings.

9. On February 13th the Nuclear Regulatory Commission (NRC) responded to the lawsuit against it and its Chairman with the U.S. Court of Appeals for the DC Circuit. The NRC Counsel contended that the plaintiffs failed to demonstrate actual or imminent injury from the NRC's inaction or delay in the Yucca Mountain license proceedings. Therefore, the Court should reject the petitioner's lawsuit.

10. On February 13th the petitioners (states of Washington and South Carolina, Nye County in Nevada, Aiken County in South Carolina, the Tri-City business leaders near the Hanford reservation in Washington, and the National Association of Regulatory Utility Commissioners) filed their brief with the with the U.S. Circuit Court of Appeals for the District of Columbia maintaining that the Nuclear Regulatory Commission unreasonably delayed the Yucca Mountain license proceedings.

11. On February 13th the petitioners filed their reply brief on the Nuclear Regulatory Commission's (NRC) and Nevada's responses to their lawsuit with the U.S. Circuit Court of Appeals. The petitioners maintained that they have a right to the stepwise process as mandated by the Nuclear Waste Policy Act and that the injury is traceable to the Nuclear Regulatory Commission. For the foregoing reasons the petitioners requested that the Court order the NRC to comply with the Nuclear Waste Policy Act and resume the Yucca Mountain license proceedings. On the same day the petitioners also filed an addendum to their brief with the Court. The addendum listed the applicable statutes that support their contentions against the Nuclear Regulatory Commission and its Chairman.

12. On February 13th, the Administration proposed in its Fiscal Year (FY) 2013 Budget to Congress nearly $60 million for the Department of Energy's Used Nuclear Fuel Disposition Program. The Program will support development of technologies for storing, transporting, and disposing of used nuclear fuel as part of the near term recommendations of the Blue Ribbon Commission. It will also investigate fuel forms, reactors, and fuel/waste management approaches that would reduce the quantity of long-lived radioactive elements in the used fuel requiring disposal. The Administration's FY 2013 Budget also increased the Nuclear Regulatory Commission (NRC) spent fuel storage and transportation program by $3.8 million over FY 2012 enacted budget. The bulk of the increase is for research to support the NRC's waste confidence rule for extended storage out to 200 years.

13. On February 13th the U.S. Court of Appeals for the District of Columbia Circuit issued an order allowing Nevada to supplement the record. Nevada is an intervenor in the lawsuit against the Nuclear Regulatory Commission (NRC) that was filed by the petitioners (Aiken County in South Carolina, Nye County in Nevada, the states of South Carolina and Washington, the business leaders near the Hanford site in Washington, and the National Association of Regulatory Utility Commissioners) who alleged the NRC unreasonably delayed the Yucca Mountain licensing proceedings. A copy of the order is attached.

14. On February 16th the Decommissioning Plant Coalition (DPC) sent a letter to the Nuclear Regulatory Commission (NRC) commenting on its draft Environmental Impact Statement (EIS) on the Waste Confidence Rule extending storage of spent nuclear fuel out to 300 years. The DPC recommended that the NRC place its draft EIS on hold to ensure that the federal government does not abdicate its responsibility to dispose of the used nuclear fuel. Otherwise, it will appear that the NRC endorsed

indefinite on-site storage. The DPC is comprised of the decommissioned reactor sites of Maine Yankee, Connecticut Yankee, Yankee Rowe in Massachusetts, Big Rock Point in Michigan, Lacrosse in Wisconsin and Rancho Seco in California. A copy of the letter without the specific comments is attached.

15. On February 16th the National Association of Regulatory Utility Commissioners (NARUC) sent a letter to the Nuclear Regulatory Commission (NRC) commenting on their draft Environmental Impact Statement (EIS). NARUC took issue with the draft EIS as being in conflict with the intent of the Nuclear Waste Policy Act. NARUC suggested the NRC would benefit from a pause to allow the Department of Energy time to develop a strategy for implementing the Blue Ribbon Commission's recommendations. A copy of the letter is attached.

16. On February 16th the Nuclear Energy Institute (NEI) forwarded a letter to the Nuclear Regulatory Commission (NRC) expressing their concern that the NRC should wait until their technical evaluation of long-term storage is completed so as to better inform their draft Environmental Impact Statement. Even though research on extended storage is underway, considerable research and validation will be required to fully comprehend all the technical aspects. Therefore, NEI recommended the draft EIS be deferred. A copy of the letter without the attachments is attached.

17. On February 17th the Nuclear Waste Strategy Coalition (NWSC) sent a letter to the Nuclear Regulatory Commission's (NRC) commenting on the preliminary environmental impact statement (EIS) for the NRC's Waste Confidence Rule. The NWSC believed that the draft EIS was premature and did not take into consideration Congressional deliberations in response to the Blue Ribbon Commission's recommendations, the Department of Energy development of a national nuclear waste strategy, long term research on extended spent fuel storage up to 300 years, and the lawsuit in the Court of Appeals for the DC Circuit. The letter also expressed concern that the draft EIS will divert attention from solving the nation's nuclear waste dilemma and instead accept storage for centuries. The NWSC is an ad hoc organization of state utility regulators, state attorneys general, consumer advocates, electric utilities and associate members, that includes 40 organizations in more than 30 states. A copy of the letter is attached.

18. On February 17th the Sustainable Fuel Cycle Task Force Science Panel forwarded a letter to the Nuclear Regulatory Commission (NRC) expressing their concerns that the NRC process was too lengthy and recommended an accelerated schedule while still considering all the technical and safety issues with long-term storage. They also recommended addressing societal uncertainties on whether future generations will be better equipped to deal with the nuclear wastes. They also expressed concern over the physical size and higher heat loads of some used fuel potentially challenging some repository settings such as salt formations and clays. A copy of the letter is attached.

19. On February 17th the State of Nevada submitted its response to the Nuclear Regulatory Commission's (NRC) preliminary Environmental Impact Statement (EIS). The State supported the NRC's use of a 200 to 300 year timeframe for the EIS and presumed that technological advances will occur since dry storage technology is less than 30 years old. The State raised concerns over the implications of extended storage and listed five questions the EIS should address. The State also identified human factors and human error, the use of generic and composite sites, terrorism and sabotage, and transportation as major issues the EIS should include in its impact assessment Copies of the letter and comments are attached.

20. On February 20th a cluster of municipalities in southwestern Ontario's rural heartland expressed an interest in hosting Canada's storage of its spent nuclear fuel. The towns of South Bruce, Huron-Kinloss, Brockton and Saugeen Shores have expressed an interest in becoming a host community.

They are conveniently located near the Bruce nuclear generating station, the home of eight CANDU reactors. It will take seven to ten years before the site selection process narrows the field down to one site.

21. On February 21st Radio Prague reported that the Czech Radioactive Waste Depository Authority promised a financial incentive of 600,000 Czech crowns (about $32,000) for each town or city that agreed to geological research for a deep nuclear waste repository within their territories. In addition, 0.03 crowns would be paid for each square meter that became part of the research area. However, municipalities were skeptical about the government's "stance on nuclear power and the changing energy agenda".

22. On February 22nd the Nuclear Waste Strategy Coalition held a conference call to update its membership on upcoming congressional hearings, litigation before the Appeals Court, and activities of the Blue Ribbon Commission and the Nuclear Regulatory Commission (NRC). The congressional hearings were scheduled to hear testimony from the much anticipated Blue Ribbon Commission report which was sent to the Secretary of Energy on January 26th. The NRC discussion focused on its assumptions with its draft environmental impact statement to substantiate its 2010 Waste Confidence Ruling for storage of spent nuclear fuel out to 200 years. The litigation issues involved the lawsuit against the NRC for inaction on the Yucca Mountain proceedings with the second case dealing with the suspension of nuclear waste fund fees until an assessment is performed by the Department of Energy. The Court is expected to hear oral arguments on May 2nd for the Yucca issue and April 13th on the fee case.

23. On February 23rd a subgroup of Japan's Atomic Energy Commission concluded that direct disposal of spent nuclear fuel is less costly than reprocessing the used fuel for reuse. Although the subgroup stated that reprocessing would be an efficient means to use Japan's limited uranium resources, the cost of direct disposal would be half of what would be needed to reprocess all of Japan's spent fuel. The subgroup is in response to last year's Fukushima reactor accidents and Japan's nuclear power future.

24. On February 26th-March 1st a waste symposium was held in Phoenix, Arizona. The international technical symposium is held annually to discuss and seek solutions to waste management and disposition of radioactive waste and radioactive materials. The topics included low-level waste, high-level waste and spent nuclear fuel. The technical agenda included presentations on transmuting (the transformation of one element into another) spent/used nuclear fuel, the storage and retrieval of high-level waste, spent nuclear fuel storage in the next century, the deep disposal of high-level waste and spent/used nuclear fuel, the performance monitoring of geological disposal, and international progress on deep repository programs. The annual conference attracted over 2000 registrants representing government and private organizations from around the world.

25. On February 29th it was reported that sixteen organizations, including several universities in several European Union countries along with Westinghouse Electric Sweden would commence a four year project to recycle spent nuclear fuel. However, the project would be led by Sweden's Royal Institute of Technology and would develop fuels that are uranium or plutonium nitrides and carbides as opposed to oxides. The new compounds could result in fuels that are 80% recyclable with a goal of 95% as compared to the current 1%. By decreasing the long-lived nuclear waste by a factor of nearly ten it potentially could decrease the size of a repository by the same amount.

26. February 29th a resolution was introduced into the Minnesota Senate urging the President and Congress to pass legislation that would:

- allow the construction of one or more consolidated storage facilities for spent nuclear fuel,
- provide incentives to interested host communities,
- ensure access to the corpus of the Nuclear Waste Fund and fees collected, and
- allow one or more Nuclear Regulatory Commission (NRC) licensed private interim storage facilities. (This would include the already licensed NRC facility on the tribal lands of the Goshute Indians in Skull Valley, Utah. The private facility was denied permits by the federal government to construct the facility. The congressional delegation and state leaders placed pressure on the federal government to deny the access and construction permits.)

A copy of the resolution is attached.

27. For informational and illustrative purposes a map of the locations of the Independent Spent Fuel Storage Installations throughout the United States is attached.

Other Related Topics

1. On December 16th Secretary of Energy Chu issued a "Determination of the Adequacy of the Nuclear Waste Fund Fee". The determination is an annual mandate from the Nuclear Waste Policy Act to see if an adjustment to the "Fee" is necessary. The Secretary agreed with his Department of Energy's (DOE) Office of Standard Contract Management conclusion that there was "no basis to propose an adjustment to the fee to Congress" as there was "no reasonable evidentiary basis to conclude that the current fee is generating either insufficient or excess funds to cover the costs of DOE's obligation to manage and dispose of spent nuclear fuel and high level waste". Copies of the Secretary's determination and the Director's memorandum are attached.

Wiscasset Newspaper, BRC Report
February 1, 2012

Yankee Nuclear companies encouraged by Blue Ribbon Commission report

By CHARLOTTE BOYNTON
Staff Report

The Blue Ribbon Commission on America's Nuclear Future (BRC) that was released recently could be good news for Wiscasset's Maine Yankee Independent Spent Fuel Storage Facility and other nuclear plants.

After nearly two years, the BRC has issued its fi nal report recommending the Federal government to immediately begin work developing storage sites and dumps for nuclear waste.

The three Yankee Nuclear plants in New England (Maine Yankee, Connecticut Yankee, and Yankee Atomic in Rowe, Massachusetts) are encouraged with the recommendations made by the BRC Maine Yankee's spent nuclear fuel as well as its Greater than Class C (GTCC) waste (irradiated steel removed from the plant's reactor vessel) is stored in dry cask storage units at Maine Yankee's Independent Spent Fuel Storage Installation (ISFSI). This will remain the case until the "http://www.doe.gov" \t "new" U.S. Department of Energy (DOE) fulfi lls its obligation to dispose of this material or another viable solution for removing the spent fuel from the site

By law the DOE was to have begun removing spent nuclear fuel from Maine Yankee in 1998. To date, DOE has not removed any spent fuel from any nuclear site, and it is uncertain when it will.

In a press release from Senator Olympia Snowe regarding the BRC's report, she said, "I applaud the release of the BRC's report as well as its recommendations to prioritize the removal and consolidation of nuclear waste. I look forward to working with my colleagues to develop a plan and execute a strategy in pursuit of that end and expect the President to provide leadership to continue to proceed with a national repository at Yucca Mountain and the removal of nuclear waste from Maine's coast."

The BRC's fi nal report noted that the United States has more than 65,000 tons of spent nuclear fuel stored at roughly 75 reactor sites at present, with over 2,000 tons being produced each year

The BRC recommends the prompt initiation of programs to coordinate federal, state, and local efforts to plan for the transportation of the nuclear waste to consolidated storage and disposal facilities, the establishment of a "First in line" priority for the movement of spend fuel and other material being stored at permanently shutdown reactor sites, and the prompt establishment of a voluntary, incentive-based siting program that would lead to the licensing of a consolidated interim storage facility.

According to a press release from the Yankee Companies, they are appreciative that the BRC listened to what the Community Advisory Boards and others in New England had said – that it makes no sense to keep maternal at scattered sites around the region. "New England ratepayers met their obligation to pay for the federal government to begin picking this material up in 1998 and it's time the government to fi x the program and put it on footing that will lead to success in that mission," according to the press release.

The Yankee Companies believe that the members of the BRC

have put forward credible and solid recommendations and they
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Wiscasset Newspaper

are hopeful that the President and Congress will carefully, but promptly, review and act to implement the recommendations.
The BRC's fi nal report also calls on Congress to create a new single-purpose organization to implement a focused program for the transportation, storage, and disposal of spent fuel and nuclear waste. The BRC also asked that the budget rules be amended so that this new organization would have assured access to the existing Nuclear Waste Fund and its revenues generated by annual payments to the fund.
Two areas of the report that especially affect Maine Yankee and the other nuclear plants are on pages 12 and 42 of the report.
On page 12 of the BRC report it is written, "The arguments in favor of consolidated storage are strongest for 'stranded' spent fuel from shutdown plant sits. Stranded fuel should be first in line for transfer to a consolidated facility so that those plant sites can be completely decommissioned and put to other beneficial uses."
On page 42 of the BRC's report, it is written, "The magnitude of the cost savings that could be achieved by giving priority consideration to shut down sites appears to be large enough (in the billions of dollars) to warrant DOE exercising its right under the Standard Contract to move this fuel first."
The 15-member BRC and its four sub committees conducted more than two dozen meetings, receiving testimony from hundreds of experts and concerned citizens. Their final report can be found at http://www.brc.gov

EL-2/ERE-1 Resolution Regarding the Recommendations of the Blue Ribbon Commission on America's Nuclear Future

WHEREAS, It has been national policy well before and affirmed by the Nuclear Waste Policy Act (NWPA) that the Federal Government is responsible for the safe, permanent disposal of all government and commercial high-level radioactive nuclear waste—including used or spent nuclear fuel from nuclear power plants; *and*

WHEREAS, The owners of the commercial spent nuclear fuel are obligated to pay for its disposal through contracts with the U.S. Department of Energy (DOE) required by the NWPA, and such payments have been continuously made since 1983 and continue today; *and*

WHEREAS, Fees paid to the Nuclear Waste Fund and interest earned by the Fund today total a reported $26.7 billion in the Fund because funds appropriated for the planned geologic repository—that was supposed to be operational in 1998—have never kept pace with annual fee revenue; *and*

WHEREAS, The present Administration has taken steps to cancel the repository at Yucca Mountain, Nev., that was approved by Congress in 2002 and for which the previous Administration submitted a license application to the Nuclear Regulatory Commission (NRC) in 2008; *and*

WHEREAS, In 2010 the President directed the Secretary of Energy to appoint a Blue Ribbon Commission on America's Nuclear Future (BRC) to recommend a new nuclear waste disposal strategy—excluding Yucca Mountain; *and*

WHEREAS, The distinguished members of the BRC appointed by the Secretary have conducted an extensive review of the troubled history of the repository program in this country, toured domestic and international waste facilities, received testimony and comments from experts and the public on relevant subject matters as well as the reports and recommendations culminating in the Final Report to the Secretary of Energy in January 2012; *and*

WHEREAS, NARUC maintains the view that the 2002 Joint Resolution (P.L. 107-200) approved the Yucca Mountain site subject to the NRC issuing a license, and is challenging the NRC's termination of the license application review since the Atomic Safety Licensing Board denied DOE's motion to withdraw the license; *and*

WHEREAS, Notwithstanding the disagreement on the need to continue the Yucca Mountain repository program, the BRC report contains many other recommendations that NARUC and State commissions would support and which would advance NARUC's interest in getting the U.S. nuclear waste disposal program back on track; *now, therefore be it*

RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners, convened at its 2012 Winter Committee Meetings in Washington, D.C., appreciates the efforts of the Blue Ribbon Commission on America's Nuclear Future in reviewing the policy and technical factors involved with managing and disposing of both government and commercial high-level radioactive waste and proposing a strategy to resolve the waste disposal problems that have too-long been deferred; *and be it further*

RESOLVED, That NARUC review the BRC Final Report and communicate the willingness to work with the Administration, Congress, stakeholder organizations and others in determining a transition

plan that stands the best chance of succeeding while protecting the public and the environment; *and be it further*

RESOLVED, That NARUC take action to encourage the Administration to implement the BRC recommendation to amend the standard contracts to allow standard contract holders to pay into the Nuclear Waste Fund an annual amount matching the appropriations for the waste management program and to place the remainder into an approved third-party trust account from which withdrawals could only be made to fund the waste management program; and *be it further*

RESOLVED, That NARUC take action to encourage the Administration to work with the appropriate congressional authorities to reclassify the fees paid to the Nuclear Waste Fund to prevent the government from diverting the fee for other unrelated uses; *and be it further*

RESOLVED, That NARUC remains vigilant in assuring that the corpus of the Nuclear Waste Fund remains fully available, with appropriate congressional oversight, for the purposes authorized in the NWPA.

Sponsored by the Committees on Electricity and Energy Resources and the Environment
Adopted by the NARUC Board of Directors February 08, 2012

U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

HEARING CHARTER

Assessing America's Nuclear Future – A Review of the Blue Ribbon Commission's Report to the Secretary of Energy

Wednesday, February 8, 2012
10:00 a.m. to 12:00 p.m.
2318 Rayburn House Office Building

Purpose

On Wednesday, February 8, 2012, at 10:00 a.m. in Room 2318 of the Rayburn House Office Building, the Committee on Science, Space, and Technology will hold a hearing entitled *"Assessing America's Nuclear Future – A Review of the Blue Ribbon Commission's Report to the Secretary of Energy."* The purpose of this hearing is to examine the recommendations contained in the Blue Ribbon Commission on America's Nuclear Future (BRC) Report to the Secretary of Energy, as well as broader science and technology issues associated with spent nuclear fuel management.

Witnesses

- **Lieutenant General Brent Scowcroft (Ret.)**, Co-Chairman, Blue Ribbon Commission on America's Nuclear Future
- **The Honorable Richard Meserve**, Commissioner, Blue Ribbon Commission on America's Nuclear Future
- **The Honorable Pete Lyons**, Assistant Secretary of Nuclear Energy, Department of Energy

Nuclear Waste Management Policy Background

All nuclear related activity, whether associated with research, commercial, military or other uses, generates waste byproducts of varying radioactivity. These byproducts range from low-level waste such as tools, equipment, and clothing to high-level waste such as used fuel and reactor components. Under the Low-Level Radioactive Waste Policy Act, first enacted in 1980 and amended in 1985, each state is responsible for low-level radioactive waste generated within its borders.[1] In contrast, the federal government is responsible to take title and dispose of high-level waste (as defined in 42 U.S.C. 10001)[2] under the Nuclear Waste Policy Act of 1982 (NWPA).

[1] P.L. 96-573 and P.L. 99-240.
[2] 42 U.S.C. §10001 Section 12 - The term "high-level radioactive waste" means - (A) the highly radioactive material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations; and (B) other highly radioactive material that the Commission, consistent with existing law, determines by rule requires permanent isolation.

Today, 104 commercial nuclear power reactors supply approximately 20 percent of U.S. electricity. Each reactor uses about 20 metric tons of uranium fuel per year, and collectively the industry creates 2,000 to 2,400 metric tons of spent fuel on an annual basis (one metric ton is about 2,200 pounds).[3] This spent nuclear fuel, considered high-level waste, is currently stored at the generation site in spent fuel pools (to cool the most recently used fuel rods) or in above ground dry casks.

In addition to storage at operating nuclear reactors, spent nuclear fuel is also currently held at nine decommissioned U.S. reactor sites throughout the country.[4] The Department of Energy (DOE) currently manages radioactive material at multiple locations in the United States. The largest site is located in Hanford, Washington followed by the Savannah River Site in South Carolina, and Idaho National Laboratory in Idaho Falls, Idaho.

History of Waste Management Policy[5]

For over fifty years, a deep geological repository has been examined as an option for radioactive waste disposal. The BRC notes "the conclusion that disposal is needed and that deep geologic disposal is the scientifically preferred approach has been reached by every expert panel that has looked at the issue and by every other country that is pursuing a nuclear waste management program."[6]

In the 1970's, the U.S. government began detailed study of specific disposal sites. In 1982, Congress passed the NWPA and provided a statutory framework to govern the disposal of U.S. high-level waste.[7] In 1987, Congress amended the NWPA and designated Yucca Mountain as the sole location for a deep geological repository. In 2002, Congress reaffirmed the selection of Yucca Mountain as a high-level radioactive waste repository.[8] After decades of exhaustive evaluation and study, in 2008, DOE submitted a License Application for a High-Level Waste Geologic Repository at Yucca Mountain (License Application) to the Nuclear Regulatory Commission (NRC).

In February 2010, the Department of Energy (DOE) announced its intention to withdraw the License Application for Yucca Mountain. Concurrently, the Administration moved to close the Office of Civilian Radioactive Waste Management, the office directed by the NWPA to execute DOE's nuclear waste management programs. The NRC's Atomic Safety and Licensing Board (ASLB) rejected DOE's Motion to Withdraw on June 29, 2010, stating DOE did not have the authority under the NWPA to withdraw the License Application. The ASLB decision was appealed to the full Commission. In September 2011, the Commission issued a decision stating

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[3] *"Blue Ribbon Commission on America's Nuclear Future Report to the Secretary of Energy,"* p. 14, January 2012. Accessible at: http://brc.gov/sites/default/files/documents/brc_finalreport_jan2012.pdf

[4] A list of decommissioned sites and quantities of stranded fuel can be found in the BRC Report, p. 36.

[5] For further information, see *"Review of the Blue Ribbon Commission on America's Nuclear Future Draft Recommendations"* Joint Subcommittee Hearing Charter at http://science.house.gov/sites/republicans.science.house.gov/files/documents/hearings/102711_charter.pdf

[6] BRC Report p. 27

[7] P.L. 97-425.

[8] P.L. 107-200.

that the Commission was evenly divided on the appeal and directed the ASLB to complete all necessary and appropriate case management activities.

Until further regulatory or legal action is taken to permit the License Application to move forward or be withdrawn, it remains pending before the Commission. As a result, no long-term nuclear waste management program is currently in place. The Administration stated its intention to wait for the BRC's recommendations prior to developing a new nuclear waste management policy.

The Fiscal Year (FY) 2012 Consolidated Appropriations bill directed the Department of Energy to develop a strategy for the management of spent nuclear fuel within six months of the issuance of BRC's final report.[9]

Background on the Blue Ribbon Commission's Final Report

On January 29, 2010, President Obama issued an Executive Order directing the Secretary of Energy to establish a Blue Ribbon Commission on America's Nuclear Future to "conduct a comprehensive review of policies for managing the back of the nuclear fuel cycle, including all alternatives for the storage, processing, and disposal of civilian and defense used nuclear fuel and nuclear waste."[10] The BRC states Secretary Chu "directed that the Commission was not to serve as a siting body" and the BRC did not evaluate "Yucca Mountain or any other location as a potential site for the storage of spent nuclear fuel or disposal of high level waste."[11] The BRC also did not take a position on the Administration's request to withdraw the License Application.

The 15 member Commission[12] operated under the authority outlined in the Advisory Committee Charter. The BRC held numerous open meetings and site visits in an effort to operate the BRC in an "open and inclusive manner."[13] The BRC and its subcommittees conducted 32 public events[14] to inform its report. The BRC released a draft report on July 29, 2011 for a three month public comment period. Following the release of the draft report, the BRC held five regional public meetings to solicit feedback and public comment on its report and received over 2000 public comments from a wide variety of stakeholders and interested parties on all aspects considered under the BRC's charter.[15] Additionally, the BRC sought outside legal opinions and commissioned 25 papers to inform its final report.[16]

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[9] Conference Report accompanying H.R. 2055, p. 25. Accessible at: http://rules.house.gov/Media/file/PDF_112_1/legislativetext/HR2055crSOM/psConference%20Div%20B%20-%20SOMI%20OCR.pdf

[10] The White House, *"Memorandum for the Secretary of Energy: Blue Ribbon Commission on America's Nuclear Future,"* January 29. 2010. Accessible at: http://brc.gov/index.php?q=page/executive-order

[11] Letter from BRC to the Honorable Steven Chu, January 26, 2012.

[12] Complete Membership listed in Appendix A.

[13] Blue Ribbon Commission on America's Nuclear Future, *"About the Commission."* Accessible at: http://brc.gov/index.php?q=page/about-commission

[14] The full list of meetings and events can be found at: http://brc.gov/index.php?q=calendar/

[15] Public Comments can be found at: http://brc.gov/index.php?q=comments

[16] A Full list of BRC Commissioned Papers is found in BRC Report Appendix D.

In addition to its explicit charge, the Commission identified a number of issues associated with nuclear waste management warranting closer consideration. For example, in November, 2011 the BRC established an Ad Hoc Subcommittee on Co-Mingling of Defense and Commercial Waste to reexamine President Reagan's decision that high level defense waste could be disposed in a repository for commercial waste as required by the NWPA. The BRC also requested legal analyses of near-term actions that could be accomplished under current statutory authority[17] and issues associated with modifying the contract governing the legal relationship between DOE and utilities generating nuclear power.[18]

Blue Ribbon Commission Subcommittee Structure and Recommendations

The BRC was divided into three subcommittees: Reactor and Fuel Cycle Technology (RFCT), Transportation & Storage (TS), and Disposal.

The Reactor and Fuel Cycle Technology Subcommittee was formed to consider issues relating to the "evaluation of existing fuel cycle technologies and R&D programs."[19] The Subcommittee specifically evaluated the options using criteria to include "cost, safety, resource utilization and sustainability, and the promotion of nuclear nonproliferation and counter-terrorism goals."[20] The RFCT Subcommittee submitted its draft report on June 20, 2011, centering on four key recommendations:

> (1) "provide stable, long-term [Research, Development, and Demonstration] RD&D support for advanced reactor and fuel cycle technologies," to achieve both near-term safety improvements and performance of existing light-water reactor technology and longer-term efforts to identify potential "game-changing" nuclear technologies and systems;
> (2) coordination of energy policies and programs across the federal government and more federal support for energy-related research, development, demonstration, and deployment;
> (3) additional RD&D funding for the NRC to "accelerate a regulatory framework and supporting anticipatory research for novel components of advanced nuclear energy systems;" and
> (4) continued international leadership to address global non-proliferation concerns and improve safety and security of nuclear facilities and materials worldwide.[21]

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[17] Van Ness Feldman, PC, *"Legal Analysis of Commission Recommendations for Near-Term Actions,"* July 29, 2011. Accessible at: http://brc.gov/sites/default/files/documents/vnf_legal_authorities_memo_legal_authorities_memo_revised_20111011_final_clean_1.pdf

[18] Van Ness Feldman, PC, *"Legal Background and Questions Concerning the Federal Government's Contractual Obligations Under the 'Standard Contracts' with 'Utilities,'"* December 20, 2010. Accessible at: http://brc.gov/sites/default/files/documents/20101220_standard_contract_memo_revised_final_2.pdf

[19] Blue Ribbon Commission on America's Nuclear Future Advisory Committee Charter. Accessible at: http://brc.gov/index.php?q=page/charter

[20] Ibid.

[21] Blue Ribbon Commission on America's Nuclear Future, *"Reactor and Fuel Cycle Technology Subcommittee Report to the Full Commission,"* June 20, 2011. Accessible at: http://brc.gov/sites/default/files/documents/rfct_fullreport_rev20june11.pdf

The Transportation and Storage Subcommittee addressed the question, "[s]hould the United States change the way in which it is storing used nuclear fuel and high level waste while one or more final disposal locations are established?"[22] The TS Subcommittee issued its report on May 31, 2011, focusing on seven key recommendations:

> (1) expeditiously establishing consolidated interim storage facilities;
> (2) continued research on current storage technologies;
> (3) removal of spent fuel stored at decommissioned reactor sites;
> (4) establishment of a new quasi-governmental waste management organization;
> (5) a "science-based, consent-based, transparent, phased, and adaptive" approach to "develop and implement all aspects of the spent fuel and waste management system;"
> (6) continued coordination for the transport of spent fuel and high-level waste; and
> (7) restructuring the manner in which the Nuclear Waste Fund (NWF) is accessible.[23]

The Disposal Subcommittee addressed five issues contained in the BRC Charter:

- Options for permanent disposal of used fuel and/or high-level nuclear waste, including deep geological disposal;
- Options to make legal and commercial arrangements for the management of used nuclear fuel and nuclear waste in a manner that takes the current and potential full fuel cycles into account;
- Options for decision-making processes for management and disposal that are flexible, adaptive, and responsive; options to ensure that decisions on management of used nuclear fuel and nuclear waste are open and transparent, with broad participation; and
- The possible need for additional legislation or amendments to existing laws, including the Nuclear Waste Policy Act of 1982, as amended.[24]

The Disposal Subcommittee also made seven recommendations to the BRC:

> (1) moving forward with the development of one or more permanent deep geological facilities for permanent disposal of high-level nuclear waste;
> (2) establishment of a new single-purpose organization to handle the transportation, storage, and disposal of nuclear waste;
> (3) access of that organization to the balance of the NWF;

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[22] Blue Ribbon Commission on America's Nuclear Future "Transportation & Storage." Accessible at: http://brc.gov/index.php?q=subcommittee/transportation-storage

[23] Blue Ribbon Commission on America's Nuclear Future, *"Transportation and Storage Subcommittee Report to the Full Commission,"* May 31, 2011. Accessible at: http://brc.gov/sites/default/files/documents/draft_ts_report_6-1-11.pdf

[24] Blue Ribbon Commission on America's Nuclear Future, *"Disposal Subcommittee Report to the Full Commission Draft,"* June 1, 2011. Accessible at http://brc.gov/sites/default/files/documents/draft_disposal_report_06-01-11.pdf

(4) a new approach to site and develop nuclear waste management and disposal facilities in the United States that is consent-based, transparent, phased, adaptive, and standards- and science-based;
(5) joint coordination of regulatory responsibilities and safety standards between the U.S. Nuclear Regulatory Commission and the U.S. Environmental Protection Agency;
(6) involvement of key stakeholders, including all affected levels of government, and providing the respective stakeholders direct authority over aspects of regulation, permitting, and operations in order to protect interests and generate confidence; and
(7) retaining the Nuclear Waste Technical Review Board for independent technical advice and review.[25]

The full BRC incorporated the Subcommittee recommendations into eight high-level strategic 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 continued U.S. innovation in nuclear energy technology and for workforce development.
8.) Active U.S. leadership in international efforts to address safety, waste management, non-proliferation, and security concerns.[26]

Nuclear Energy Research and Development Activities and Issues

Current DOE Nuclear Energy R&D Portfolio
The primary mission of the Office of Nuclear Energy (NE) is to "advance nuclear power as a resource capable of meeting the Nation's energy, environmental, and national security needs by resolving technical, cost, safety, proliferation resistance, and security barriers through research, development, and demonstration as appropriate."[27] All of NE's R&D programs could ultimately impact long-term nuclear waste management decisions. Differing technologies will produce different forms of nuclear waste, which affect disposal options.

The FY 2012 Consolidated Appropriations bill provided NE $769 million, a $32 million (4.3 percent) increase above FY 2011 levels. Within the NE R&D portfolio, the primary program

[25] BRC Disposal Subcommittee report.
[26] BRC Report, p. vii.
[27] Department of Energy, Nuclear Energy "Our Mission." Accessible at: http://nuclear.energy.gov/neMission.html

areas are fuel cycle ($187 million) and reactor concepts ($115 million). Additionally, the President's FY 2012 budget requested included a new NE research program for "Nuclear Energy Enabling Technologies" (NEET), which received $75 million in FY 2012. A new Small Modular (SMR) Licensing Technical Support Program received $67 million to partner with industry to accelerate development and licensing of SMRs necessary for commercial development.

Table 1 – Department of Energy Nuclear Energy Funding Levels (In Millions)

Major Programs	FY 2011 Enacted	FY 2012 Enacted
Reactor Concepts RD&D	169.0	115.5
Fuel Cycle R&D	359.0	187.4
LWR SMR Licensing Technical Support	0.0	67.0
Nuclear Energy Enabling Technologies	0.0	74.9
NE TOTAL*	**737.1**	**768.7**

* Total numbers do not add due to the exclusion of non-R&D activities such as facilities operations and security.

The Fuel Cycle R&D program conducts research on three basic fuel cycle technologies: once-through, modified-open, and full recycle. The Reactor Concepts program advances new reactor technologies such as high temperature gas-cooled reactors and reactors that "burn" a higher percentage of fuel. The NEET program intends to develop crosscutting technologies and transformative breakthroughs applicable to multiple reactor concepts and fuel cycle technologies. NEET also supports the Consortium for Advanced Simulation of Light Water Reactors (CASL) Energy Innovation Hub. Funded at $24 million in FY12, the CASL Hub seeks to create a "virtual" reactor by applying supercomputing technologies to develop advanced capabilities to simulate nuclear reactors.

BRC R&D Examination

Currently all operating nuclear reactors employ the same general technology, a "once-through" light water reactor that uses nuclear fuel just once before leaving significant volumes to be placed in a pool of water to cool. Secretary Chu directed the BRC to "look at all the science and technology and all the other things that would influence how we deal with the back end of the fuel cycle." The BRC notes, "the integrated and flexible strategy that [they] propose for nuclear waste management puts a premium on creating and preserving options that could be employed

by future generations to respond to the particular circumstances they face. [Research, development, and demonstration] is a key to maximizing those options."[28]

However, the BRC also found that "no currently available or reasonably foreseeable reactor and fuel cycle technology developments – including advances in reprocessing and recycling technologies – have the potential to fundamentally alter the waste management challenge this nation confronts over at least the next several decades if not longer."[29] The Commission did not find consensus on a particular technology pathway. Specifically, the report states:

> "As a group we concluded that it is premature at this point for the United States to commit irreversibly to any particular fuel cycle as a matter of government policy given the large uncertainties that exist about the merits and commercial viability of different fuel cycles and technology options. Rather, in the face of an uncertain future, there is a benefit to preserving and developing options so that the nuclear waste management program and the larger nuclear energy system can adapt effectively to changing conditions."[30]

The report compares four different nuclear technology options in the context of safety, cost, sustainability, non-proliferation and counter-terrorism, and waste management. For more information, see Appendix B.

Key Issues for Committee Consideration

Three decades have passed since the NWPA was signed into law, but the Federal Government is no closer to accepting commercial spent nuclear fuel than it was in 1982. As spent fuel remains stored around the country at each reactor site, the financial liability of the Federal Government continues to steadily increase, and is estimated by DOE to be over $20 billion if the Federal Government begins accepting waste in 2020. The BRC suggests a renewed effort to site a permanent repository could take another twenty years. The massive 2011earthquake and tsunami that devastated Japan and led to a crisis at the Fukushima nuclear plant serve as a stark reminder of the consequences of the government's failure to meet its obligations.

Some components of BRC's recommended strategy can be accomplished immediately without the necessity of amending the NWPA. However, key recommendations, such as the creation of a new sole-purpose organization for managing waste and selection of a new site for a permanent repository, will require legislative action. Key questions include:

- What near-term steps should be pursued to put DOE on a path to fulfill its statutory requirement to accept and dispose of commercial spent nuclear fuel?
- How can DOE's current research, development, and demonstration activities influence future waste management options? How can DOE better prioritize its NE RD&D programs in light of the BRC's review?

[28] BRC Report, p. 99
[29] BRC Report, p. 100.
[30] BRC report, p. 101.

- How can a new single-purpose organization be structured and have the necessary resources to find a solution for nuclear waste? What would that organization's responsibilities include?
- How would a new "consent-based siting process" work in practice?

Appendix A

List of Blue Ribbon Commission Members and Subcommittee Structure[31]

- **Lee Hamilton** - Co-Chair
- **Brent Scowcroft** - Co-Chair
- **Mark Ayers** - President, Building & Construction Trades Department, AFL-CIO
- **Vicky A. Bailey** - Principal, Anderson Stratton Enterprises, LLC
- **Albert Carnesale** - Chancellor Emeritus and Professor, UCLA
- **Pete V. Domenici** - Senior Fellow, Bipartisan Policy Center; former U.S. Senator (R-NM)
- **Susan Eisenhower** - President, Eisenhower Group, Inc.
- **Sen. Chuck Hagel** - Distinguished Professor, Georgetown University; Former U.S. Senator (R-NE)
- **Jonathan Lash** – President, World Resources Institute
- **Allison Macfarlane** - Associate Professor of Environmental Science and Policy, George Mason University
- **Richard A. Meserve** - President, Carnegie Institution for Science and Senior Of Counsel, Covington & Burling LLP; former Chairman, U.S. Nuclear Regulatory Commission
- **Ernie Moniz** - Professor of Physics and Cecil & Ida Green Distinguished Professor, Massachusetts Institute of Technology
- **Per Peterson** - Professor and Chair, Department of Nuclear Engineering, University of California - Berkeley
- **John Rowe** - Chairman and Chief Executive Officer, Exelon Corporation
- **Phil Sharp** - President, Resources for the Future

Reactor and Fuel Cycle Technology

Co-Chair(s):	Ex Officio(s):
Per Peterson	Brent Scowcroft
Pete V. Domenici	Lee Hamilton

Albert Carnesale
Susan Eisenhower
Allison Macfarlane
Richard A. Meserve
Ernie Moniz
Phil Sharp

Transportation and Storage

[31] For full biographies see: http://brc.gov/index.php?q=commission-members

Co-Chair(s):
Phil Sharp
Richard A. Meserve

Mark Ayers
Vicky A. Bailey
Albert Carnesale
Pete V. Domenici
Ernie Moniz
John Rowe

Ex Officio(s):
Brent Scowcroft
Lee Hamilton

Disposal

Co—Chair(s:)
Chuck Hagel
Jonathan Lash

Mark Ayers
Vicky A. Bailey
Susan Eisenhower
Allison Macfarlane
Per Peterson
John Rowe

Ex officio(s):
Brent Scowcroft
Lee Hamilton

Appendix B

TABLE 4.X COMPARISON OF THE EXISTING ONCE-THROUGH CONVENTIONAL LIGHT-WATER REACTOR FUEL CYCLE WITH REPRESENTATIVE ADVANCED NUCLEAR ENERGY SYSTEMS IN THE LONG TERM

Criterion	Once-Through LWR	Once-Through with High-Temperature Reactor
Nuclear Energy Description	Clad uranium oxide fuels irradiated in LWRs with evolutionary improvement	High-temperature reactors (such as those using graphite-based fuels) capable of temperatures over 600°C operating on a once-through fuel cycle. Being pursued in DOE's Next Generation Nuclear Plant project
		SAFETY
Reactor and fuel cycle safety[77]	Baseline, with potential for further improvement	Potential for improvement; all must meet similar regulatory requirements
		COST
Capital and operating costs	Baseline	Test reactors have operated well, but demo (Fort St. Vrain) was unreliable. Fuel costs are uncertain and may be high. RD&D is needed on to provide a basis for design, licensing, and evaluating long-term economic viability.
		SUSTAINABILITY
Uranium utilization[78]	Baseline	Similar uranium requirements although can vary by design
Climate change impacts	Baseline	Potential for major reduction in carbon dioxide by using nuclear process heat in fossil-energy-intensive industries and to produce hydrogen for non-carbon-based transportation fuels
Energy security	Baseline	Potentially large benefit in reducing petroleum imports now used to fuel non-electricity sectors
		NON-PROLIFERATION AND COUNTER-TERRORISM
Non-proliferation	Baseline	Reference designs require similar enrichment capacity capable of producing 8%–20% uranium enrichment. Fuel is more difficult to reprocess than LWR fuel.
Counter-terrorism	Baseline	Similar to baseline
		WASTE MANAGEMENT
Disposal safety: toxicity and longevity of waste	Baseline	Repository: Similar to baseline Fuel Cycle: Similar public and occupational risk from mining and milling
Volume of waste[79]	Baseline	~10X increase in SNF volume going to repository. About the same non-mill tailings LLW as baseline.
Repository space requirements	Baseline	~25% reduction due to higher reactor efficiency.

LWR Modified Open Cycle	Fast-Spectrum Reactor with Closed Fuel Cycle
Clad uranium- and mixed-oxide fuels irradiated in LWRs with evolutionary improvements. MOX fuel is irradiated once and then sent to repository.	Fast-spectrum liquid-metal-cooled reactors capable of continuous recycle of actinides
SAFETY	
Potential for improvement; all must meet similar regulatory requirements	Potential for improvement; all must meet similar regulatory requirements
COST	
Capital cost increased because of need to build reprocessing and MOX fuel fabrication plants. Operating costs also increased due to the high cost of fabricating fuels containing Pu. Cost of electricity increased a few to several percent. Technology is relatively mature with evolutionary improvements largely in the hands of industry.	Previously built reactors (mostly prototype/demo) were often unreliable and not economic. Significant capital cost for recycle facilities. RD&D is needed to provide a basis for design, licensing, and evaluating long-term economic viability.[77] Operating costs relative to baseline largely depend on the future price of uranium, fuel fabrication cost, and operational reliability.
SUSTAINABILITY	
~18% reduction in uranium requirements	~95% reduction in uranium requirements
About the same as the baseline	About the same as baseline
About the same as the baseline	Modest benefit from potential for long term reliance on indigenous uranium resources
NON-PROLIFERATION AND COUNTER-TERRORISM	
Involves use of reprocessing, enrichment, and MOX fuel fabrication technology, and deployment of facilities for same. Increased proliferation risk from substantial normalized inventory of Pu or Pu-plus other actinides in reactors and the fuel cycle.	Involves use of reprocessing and plutonium-bearing fuel fabrication technology, and deployment of facilities for same. Enrichment technology needed during transition to fast reactors Increased proliferation risk from substantial normalized inventory of Pu or Pu-plus other actinides in reactors and the fuel cycle.
Involves production and inventory of co-processed nuclear materials (U/Np/Pu) and 5%–10% enriched uranium, and fuels containing same. Increased security risk due to separated materials and additional facilities and transportation.	Involves production and inventory of co-processed nuclear materials (U/Np/Pu) and fuels containing same. Increased security risk due to separated materials and additional facilities and transportation.
WASTE MANAGEMENT	
Repository: Noticeable reduction in the amount of TRU in wastes. Tailored waste form for ~90% of the HLW Fuel Cycle: 15%–20% reduction in fuel cycle public and occupational risk from reduced mining and milling. Although there is an increase in emissions from reprocessing, overall risk is reduced as a result of reduced risks on the front end.	Repository: Tailored waste form for fission products; potential for reduction in long-term repository dose from TRU elements if recycle is sustained for decades to centuries Fuel Cycle: ~85% reduction in fuel cycle public and occupational risk from reduced mining and milling. Increase from emissions from reprocessing
Similar repository waste volume; less SNF/HLW, more secondary waste. ~20% decrease in near-surface wastes, esp. mill tailings and depleted uranium. Besides mill tailings and depleted uranium, about the same amount of LLW as baseline.	~40% increase in repository waste volume; less HLW, more secondary waste. ~95% decrease in near-surface wastes, primarily due to mill tailings and depleted uranium. ~40% decrease in non-mill tailings LLW due to greatly reduced throughput in the front end of the fuel cycle.
Similar to baseline, with some reduction in long-term decay heat generation.	~75% decrease in repository space required when TRU are recovered and recycle is sustained over many decades to a couple of centuries.

UNITED STATES
NUCLEAR WASTE TECHNICAL REVIEW BOARD
2300 Clarendon Boulevard, Suite 1300
Arlington, VA 22201

February 8, 2012
For Immediate Release

Karyn D. Severson
External Affairs

NWTRB March Meeting to Focus on Geologic Disposal of Nuclear Waste

The U.S. Nuclear Waste Technical Review Board will hold a public meeting in Albuquerque, New Mexico, on Wednesday, March 7, 2012. The meeting will focus on Department of Energy (DOE) work related to geologic disposal of spent nuclear fuel and high-level radioactive waste. Following up on presentations at the Board's January meeting in Arlington, Virginia, DOE will discuss technical site-selection criteria for a deep geologic repository. A representative of the U.S. Geological Survey (USGS) will provide a USGS perspective on this subject. The meeting also will include a presentation on the status of DOE's development of performance assessment models for different rock types and its evaluation of technical issues related to deep borehole disposal. A representative of the Blue Ribbon Commission on America's Nuclear Future (BRC) will kick off the meeting with an overview of the BRC's final report and recommendations to the Secretary of Energy.

The meeting will begin at 8:00 a.m. and will adjourn at approximately 5:45 p.m. It will be held at the Sheraton Albuquerque Airport Hotel, 2910 Yale Blvd., S.E., Albuquerque, New Mexico 87106; (Tel) 505-843-7000; (Fax) 505-843-6307. A block of rooms has been reserved at the hotel for meeting attendees. ***To ensure receiving the federal government rate of $81.00 per night, room reservations must be made in the "NWTRB" room block by Friday, February 17, 2012.*** The number to call for reservations is 1-800-227-1117. The electronic reservation link is http://www.starwoodmeeting.com/StarGroupsWeb/res?id=1201240950&key=A0B7A.

A detailed agenda will be available on the Board's Web site at www.nwtrb.gov approximately one week before the meeting. The agenda also may be obtained by telephone request at that time.

The meeting will be open to the public, and an opportunity for public comment will be provided at the end of the day. Those wanting to speak are encouraged to sign the "Public Comment Register" at the check-in table. A time limit may need to be set for individual remarks, but written comments of any length may be submitted for the record.

A transcript of the meeting will be available on the Board's Web site, by e-mail, on computer disk, or in paper form on a library-loan basis from Davonya Barnes of the Board's staff after March 30, 2012.

The Board was established as an independent federal agency to provide ongoing objective expert advice to Congress and the Secretary of Energy on technical issues related to nuclear waste management and to review the technical validity of DOE activities related to implementing the Nuclear Waste Policy Act. Board members are experts in their fields and are appointed to the Board by the President from a list of candidates submitted by the National Academy of Sciences. The Board is required to report to Congress and the Secretary no fewer than two times each year. Board reports, correspondence, congressional testimony, and meeting transcripts and materials are posted on the Board's Web site.

For information on the meeting agenda, contact Karyn Severson. For information on lodging or logistics, contact Linda Coultry. They can be reached at 2300 Clarendon Boulevard, Suite 1300; Arlington, VA 22201-3367; (tel) 703-235-4473; (fax) 703-235-4495.

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United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 11-1271 **September Term 2011**

NRC-NWPA

Filed On: February 13, 2012 [1358137]

In re: Aiken County, et al.,

Petitioners

State of Nevada,
Intervenor

ORDER

Upon consideration of intervenor's unopposed motion to supplement the record, and the lodged supplement, it is

ORDERED that the motion be granted. The Clerk is directed to file the lodged document.

FOR THE COURT:
Mark J. Langer, Clerk

BY: /s/
Michael C. McGrail
Deputy Clerk

712 North Carolina Avenue, SE
Washington, DC 20003

Decommissioning DPC Plant Coalition

Phone: 202.546.4258
Email: dpc@govstrat.com

February 16, 2012

Ms. Christine Pineda, Project Manager
Mailstop EBB-2B2
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Ms. Pineda;

The Decommissioning Plant Coalition (DPC)[1] appreciates the opportunity to provide comments on the "Draft Report for Comment -- Background and Preliminary Assumptions for an Environmental Impact Statement -- Long-Term Waste Confidence Update" (hereinafter "Draft Report"). Ours are divided into two sections: this cover letter, which provides our general comments about the policy implications and timeliness of the agency's effort, and an appendix that provides our detailed comments on specific sections of the Draft Report.

First, we commend the NRC staff for its hard work on this effort and appreciate the fact that the Commission initially tasked it to develop a long-term update of its most recent Waste Confidence decision, addressing the impacts of storage beyond a 120-year timeframe. We also would emphasize our commitment that the material that remains stored on our sites is and will be safe and secure.

Nonetheless, the DPC believes the effort to finalize the Draft Report and move into a more formal process on the timeframes set forth therein is premature and the work on it should pause.

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[1] The Decommissioning Plant Coalition was established in 2001 to highlight issues unique to nuclear power plants undergoing decommissioning. The DPC is focused on addressing the needs of single-unit sites that are undergoing or have completed decommissioning activities. Members of the Decommissioning Plant Coalition include the Big Rock, Connecticut Yankee, LaCrosse, Maine Yankee, Rancho Seco, and Yankee Rowe facilities.

We certainly would agree with the Commission that spent fuel is being stored longer than originally intended because of (we believe the statutory and contractual breaches and the resulting) uncertainties in the national strategy for disposing of that material. Indeed, it is our view that the Commission has already recognized this fact and accounted for it in its last Waste Confidence decision. And, while we further agree with the brief discussion by staff of the "National Context" provided in section 2 of the Draft Report, what we feel is missing from the discussion is adequate recognition and emphasis that one of the fundamental principles behind Waste Confidence – and the nation's civilian spent fuel management effort - is that the federal government, currently acting through the Department of Energy (DOE), is responsible for the development of all necessary infrastructure for long-term spent fuel and Greater-Than-Class-C (GTCC) waste management, not the individual NRC licensee/DOE contract holder.

In our view, Waste Confidence has always had two critical components – one, a finding that our generation has the capability of creating technologies that could minimize exposures to humans and the environment from the harmful effects of spent fuel and second, that our society has the will to establish a long-lasting institutional framework and infrastructure to deploy that technological capability for the benefit and protection of future generations. Our concern, simply stated, is that the draft report can be viewed as the beginning of an effort to shift more of the institutional responsibilities onto private parties and absolve the federal government of the need to make progress implementing what has been a uniquely governmental responsibility.

Clearly, the federal responsibility has been the basis of federal policy under the Nuclear Waste Policy Act and the basis for the policy analysis applied to the current "National Context" by the Blue Ribbon Commission on America's Nuclear Future (BRC). Certainly the BRC final report, while suggesting the creation of a new entity to conduct the execution of our national strategy, maintains the position that it is a unique responsibility of the federal government to foster the development of institutional arrangements leading to the centralized management and ultimate disposal of spent fuel and other identified waste streams. We believe the Commission and the staff would be well served to allow some time to pass, wherein the Executive and Congressional branches of government have an adequate opportunity to digest and act upon the BRC final report, before making decisions about and spending resources on future waste management scenarios.

This belief holds true especially, and unfortunately in our view, because the Draft Report contains assumptions that disregard the established bases for Waste Confidence and suggest the necessity for action by licensees of permanently shut down facilities that create a number of conflicts with previous regulatory decisions.

The first conflict arises from regulatory decisions authorizing the sites to be entirely decommissioned, including the removal of the spent fuel pool, and findings that the material could be stored in dry casks on ISFSIs since the Department would soon remove the material for management and disposal. However, the Draft Report notes that in an extended onsite storage scenario, one of the future actions to be

considered may be a requirement for the construction of repackaging facilities at permanently shut down facilities where the NRC has approved the removal of such facilities. The reason why some new facilities would be needed is the Department of Energy's failure to meet its statutory and contractual obligations.

There are other such conflicts, including future security considerations, whose impacts will be traced to the Department's failure to meet its statutory and contractual obligations to remove fuel and GTCC from our sites.

We would note that the DPC previously commented to the NRC on February 6, 2009[2] with regard to the NRC's proposed rule change to 10 CFR Part 51 and related waste confidence decision update that the Commission should make clear to the DOE its expectation that the DOE should start to show progress towards a solution in accordance with its obligations under the NWPA, "[O]therwise the Commission's intent to not support on-site storage for spent fuel for 'an indefinitely long period of time' will be increasingly unenforceable and its meaning diminished with respect to these permanently shut-down sites." The DPC believes the Commission should not undertake any effort to update the Waste Confidence EIS and the assumptions on which it is based until it re-examines its policies and regulatory footing regarding spent fuel management at permanently shutdown sites, especially absent consideration of the policy discussions that the BRC recommendations are intended to foster.

The DPC would also point to the Commission's statements in its Waste Confidence proceedings that indicate that the Commission's intent is that the Waste Confidence rule should not be interpreted as a Commission endorsement for indefinite on-site storage. We believe that the assumptions document should list the specific measures that the NRC staff and/or the Commission has taken/are taking to re-enforce that statement of intent, and how this effort is consistent with that intent. It would also seem wise for the Commission and the NRC staff to hear from the BRC, and to determine what changes to national policy evolve, and how Commission actions may be affected. Absent such a list and an exploration, this effort stands out as an activity that would undermine that intent.

The DPC recognizes that addressing the current predicament on spent fuel management has executive and legislative branch implications. We believe that a re-examination and articulation of your expectations on how to prevent storage from becoming unacceptably long-term at this time can only result in enhancing any executive and legislative actions that may arise in the near-term.

As a final thought, we ask the NRC staff and the Commission to take note of the work of the Blue Ribbon Commission in emphasizing its recommendation on the need for

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[2] Letter from Michael S. Callahan on behalf of the DPC to Ms. Annette Vietti-Cook dated February 6, 2009: Decommissioning Plant Coalition Comments on U.S. Nuclear Regulatory Commission Proposed Rule 10 CFR 51 *Consideration of Environmental Impacts of Temporary Storage of Spent Fuel After Cessation of Reactor Operations* (73 Fed. Reg. 59547) and related *Waste Confidence Decision Update* (73 Fed. Reg. 59551), each dated October 9, 2009.

a consensus based approach for the successful siting of spent fuel storage and disposal facilities. As the staff and Commission delve into the assumptions necessary to support on site storage for the 100 – 300 year period, please recognize that you do so without taking that recommendation into any account. State and local governments never had a chance to agree to be the location of an interim storage facility for the period since 1998, and have no chance to be part of a consensus based process to site de facto intermediate and long-term storage facilities in the work that is underway here, and others that are underway elsewhere in the staff.

We appreciate the opportunity to provide comments on this draft and would like to suggest that a full discussion of our and others comments soon take place in public forum and that the Commission be updated on comments generally prior to the publication of any final report. April 2012 is optimistic for publishing a final report under the circumstances.

We would be pleased to answer any questions and participate in public discussions of our comments.

Sincerely,

Michael S. Callahan

On behalf of the Decommissioning Plant Coalition

N A R U C
National Association of Regulatory Utility Commissioners

February 16, 2012

Ms. Christine Pineda
Mailstop EBB-2B2
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Re: Comments on Environmental Study of Storage of Spent Nuclear Fuel

The National Association of Regulatory Utility Commissioners (NARUC) appreciates continuing to be kept informed of the activities of the NRC to analyze the effects of long-term storage of spent nuclear fuel from commercial power reactors, such as the "Draft Report for Comment—Background and Preliminary Assumptions for Environmental Impact Statement—Long-Term Waste Confidence Update." We reserve the right to provide additional comments during the subsequent EIS stages.

The several storage scenarios listed in the report are not all equally likely alternatives under present applicable law, namely the Nuclear Waste Policy Act (NWPA) which states that it is national policy that the federal government is responsible for permanent disposal of commercial spent nuclear fuel in a geologic repository, beginning in 1998. Thus, the alternative of spent fuel continuing to be stored at nuclear power plants is in conflict with the law in a growing number of cases. The President and the Secretary of Energy, while maintaining that the site at Yucca Mountain is "not a workable option," continue to declare the intent to fulfill the obligations of both NWPA and the contracts between the Department of Energy (DOE) and nuclear power plant owners to remove spent fuel.

We understand the reasoning behind developing "generic, composite sites" for each scenario, but in our view that methodology has limitations in terms of not only the physical environmental impacts but especially with the socio-economic impacts. Likewise, we expect the scenario of status quo reactor-site storage will be identified as the "no action alternative" for which a generic impact assessment will be compiled. We would recommend selecting—perhaps with community input—a handful of diverse settings to serve as 'surrogates.' In that way some

sampling of the reactions in the community to the possibility that instead of removal from the site "as we were promised," the spent fuel may remain where it is for as much as 200 years.

We request that special attention—perhaps a scenario of its own—be given to the ten sites where the reactors have been shutdown or decommissioned. The broad consensus among those who addressed the Blue Ribbon Commission and in the BRC Final Report is that the spent fuel at those sites should be consolidated at a storage site. In this regard, we are impressed with the comments on the Draft Report sent to you by the Decommissioning Plant Coalition. The Coalition cites some valid considerations for a "pause" in the EIS development process. Perhaps the development by DOE of a "strategy" for implementing the Blue Ribbon Commission report directed by Congress will allow the various government agencies and stakeholders time to consider the interrelationships of the scenarios, recommendations and studies.

Thank you for the opportunity to comment.

Brian O'Connell, PE
Director, Nuclear Waste Program Office

NUCLEAR ENERGY INSTITUTE

Rodney McCullum
DIRECTOR
USED FUEL PROGRAMS
NUCLEAR GENERATION DIVISION

February 16, 2012

Ms. Christine L. Pineda
Project Manager
Division of Spent Fuel Alternative Strategies
Office of Nuclear Material Safety and Safeguards
Mailstop EBB-2B2
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Nuclear Energy Institute comments on U.S. Nuclear Regulatory Commission Draft Report for Comment, *Background and Preliminary Assumptions for an Environmental Impact Statement – Long-Term Waste Confidence Update*, December 2011 (Adams Accession Number ML11340A141)

Project Number: 689

Dear Ms. Pineda:

The Nuclear Energy Institute (NEI),[1] on behalf of the nuclear energy industry, commends the U.S. Nuclear Regulatory Commission (NRC) for proactively addressing the topic of long-term waste confidence as reflected by staff's efforts to seek public comment on the subject draft report. Given current uncertainties in the U.S. repository program, it is appropriate for the NRC staff to supplement the Commission's generic waste confidence finding which concludes "if necessary, spent fuel generated at any reactor can be stored safely and without significant environmental impact for at least 60 years beyond the licensed life for operation."[2]

The staff's efforts to address these longer timeframes are consistent with the direction received from the Commission[3] to "begin a longer-term rulemaking effort" and to prepare an Environmental Impact Statement (EIS) "to support this longer-term waste confidence update." However, we do not

[1] NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabricators, nuclear material licensees, and other organizations and individuals involved in the nuclear energy industry.

[2] 75 *Federal Register* 81032, December 23, 2010.

[3] SECY 09-9090, Final Update of the Commission's Waste Confidence Decision, September 15, 2010.

agree with the sequence in which the staff is proposing to conduct its activities as described in the draft report.

More specifically, although we encourage the NRC to continue exploring safe and effective long-term used fuel storage, NEI recommends that the NRC reconsider its current plan to move forward with an Environmental Impact Statement (EIS) in the near term. Rather, the technical evaluation of long-term storage should proceed forward, and should become the basis for a future decision on a proposed action (e.g., a rulemaking revising the current waste confidence rule or findings). This technical evaluation could support, or be structured as, an Environmental Assessment (EA) that would, in turn, inform the NRC's ultimate decision on whether preparation of an EIS is necessary or prudent. This approach is consistent with the Commission's historical approach to waste confidence and offers practical advantages over the current approach.

In order for the proposed action to be properly defined, substantial additional research and development on the technical aspects of extended storage will be required. This research is well underway, under the auspices of the U.S. Department of Energy, the Electric Power Research Institute, and others. These efforts will gather and analyze data, refine our understanding of long-term storage, develop and validate models, and make predictions of long-term storage performance. However, this research will not be completed for a number of years. Until these results are available to guide the NRC's analysis, any EIS will necessarily be highly speculative, of limited value, and potentially in need of substantial future revision. We recommend that, instead of beginning a speculative EIS scoping process now, the NRC undertake a regulatory gap analysis (similar to what is currently underway for the proposed reprocessing rulemaking—10 CFR 7X) to better define this rulemaking.

Additionally, during the time that the NRC is conducting the necessary regulatory and technical analysis, progress may be made on the national policy front with respect to implementing the recommendations of the President's Blue Ribbon Commission on America's Nuclear Future. Deferring final decisions on whether development of a full EIS is appropriate until after these recommendations have been addressed also will facilitate the development of a more well-defined proposed action.

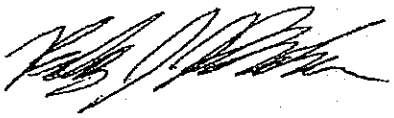
We recognize that the NRC has highlighted, in the assumptions and scenarios described in the draft report, a number of issues that will need to be addressed in considering storage of used nuclear fuel over long timeframes. In anticipation that the NRC will more appropriately address these same issues in forthcoming technical and regulatory analysis, we are offering a number of specific comments on the draft report in Attachment 2 to this letter. Many of these comments highlight areas that could be addressed in a regulatory gap analysis. Attachment 3 to this letter provides a more detailed explanation of one of our specific comments—that the draft report's Assumption 9, "The Waste Confidence EIS will consider the impacts of terrorism," unnecessarily departs from Commission precedent.

Finally, we understand that the NRC has also received comments from the Decommissioning Plant Coalition (DPC).[4] We recognize and respect that the DPC has a position that differs somewhat from that of the Industry as a whole—in that they have no interest in extended waste confidence to support the licensing of new and operating nuclear plants given that they are already no longer operating. However, both NEI and the DPC are united in the view that work on the proposed EIS should be deferred. Placing the EIS on hold will allow the NRC to conduct sufficient technical and regulatory analysis to not only better define the proposed action, but also to consider the full range of actions necessary to address the differing needs of operating and shutdown plants.

In summary, while we believe that significant restructuring of the NRC's efforts to address long-term waste confidence is needed, we greatly appreciate that staff is being proactive in undertaking these efforts. We look forward to continuing to work with staff on this effort. We would be pleased to meet with the NRC staff at your earliest convenience to further discuss our comments on the draft report.

If you have any questions, please do not hesitate to contact me.

Sincerely,



Rodney McCullum

Attachments

c: Ms. Catherine Haney, NMSS, NRC
Mr. Aby S. Mohseni, NMSS/SFAS, NRC

[4] Letter, Callahan to Pineda, February 16, 2012.

NWSC
Nuclear Waste Strategy Coalition

February 17, 2012

Ms. Christine Pineda, Project Manager
Mailstop EBB-2B2
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Ms. Pineda:

The Nuclear Waste Strategy Coalition (NWSC), an ad hoc group of state utility regulators, state attorneys general, state consumer advocates, nuclear-generating electric utilities and associate members, appreciates the opportunity to offer comments on the December 2011 draft report, *Background and Preliminary Assumptions For an Environmental Impact Statement – Long-Term Waste Confidence Update.*

The NWSC believes it is premature for the NRC to be developing an EIS for a potential long-term Waste Confidence update. There is no reasonable justification for the NRC to deviate from reviewing Waste Confidence every 5 to 10 years, particularly with a number of relevant initiatives underway but incomplete. At a minimum, the Waste Confidence process should be put on hold pending the outcomes of:

- Congressional deliberations on the recommendations of the Blue Ribbon Commission on America's Nuclear Future (BRC) report;
- the Department of Energy's (DOE) development of a nuclear waste management strategy;
- technical evaluation of the effects of extended long-term storage on spent nuclear fuel (SNF) and storage and transportation systems; and
- the U.S. Court of Appeals case regarding the NRC's review of the Yucca Mountain License Application.

Additionally, we are concerned that the development of an EIS will indirectly reduce pressure on the DOE to remove SNF from commercial nuclear power plant sites as required by the Nuclear

Waste Policy Act (NWPA), thus making the prospect of indefinite on-site storage all the greater. The NRC in its 2010 Waste Confidence update made clear its ruling on the safety of extended storage should not be interpreted as an endorsement to leave SNF stranded indefinitely in 35 states.[1] However, in our view the current discussion of SNF storage for nearly 300 years diverts attention from the real objective: DOE must fulfill its obligations under the law of the land to remove SNF and high-level waste from commercial nuclear power plant sites. This was to have begun in 1998. The NWSC repeats its call for the federal government to carry out its NWPA obligations by disposing of SNF, thereby obviating the need for extended long-term storage, the related Waste Confidence activities at issue, and the significant costs of both to the public.

In its January 2012 report, the BRC highlights the need for the United States to establish a geologic repository for SNF. Other countries are doing just that – Finland and Sweden have selected sites and are moving forward toward that goal. The situation here is absurd; small countries with limited repository options are proceeding responsibly to manage their used fuel, while the United States, with its vast land mass, varied host environments for a repository, and close to a $30 billion balance in its Nuclear Waste Fund, does nothing. Despite the billions previously paid into this fund and continuing payments that total approximately $750 million each year by electric consumers who have met their obligation to pay for the disposal of this material, the DOE is now 14 years behind schedule.

Unfortunately, the proposed EIS process has the effect of subtly shifting the focus away from *expecting compliance* with the law and toward *accepting failure* of the federal government to remove SNF from both shutdown and operating plants as required. It sends exactly the wrong signal, even if not so intended by the NRC, and reinforces a widely held perception that this material will remain where it is indefinitely. While framed as a proactive regulatory action, we are concerned that the proposed action may be used tactically to delay the federal government's legal obligation to accept SNF and dispose of it in a national repository. Rather than developing the EIS and trying to justify inaction for another 200 years or more, the government should focus on doing what needs to be done. Specifically, the NRC should make clear to the DOE its expectations that the DOE will demonstrate near-term progress toward fulfilling its obligations and that the status quo is unacceptable.

Not only is the initiation of an EIS process procedurally premature based on the normal 5 to 10 year review cycle, but it also leapfrogs a number of important and directly relevant endeavors. Developing an EIS on long-term Waste Confidence at the same time the Administration and Congress are considering the BRC Report recommendations and associated far-reaching changes to the nation's SNF management program, while the Yucca Mountain license application remains unsettled, and in advance of completion of extended storage research, is not a wise use of agency resources and presupposes outcomes.

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[1] See NRC's 2011–2012 Information Digest: "Protecting People and the Environment," page 76 (http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1350/v23/sr1350v23-sec-5.pdf).

BRC Report Storage & Disposal Recommendations

Among other recommendations, the BRC calls both for prompt efforts to develop one or more deep geologic facilities for the disposal of SNF and high-level waste and prompt efforts to develop one or more consolidated interim storage (CIS) facilities, with SNF from the 9 decommissioned reactor sites "first in line" for transfer. Both the storage and disposal recommendations call for a process that results in one or more volunteer host communities that would receive incentives for hosting these facilities. The report recommends storage and disposal efforts proceed in parallel to, in part, give confidence to a potential volunteer host community for CIS that the facility will not become a de facto permanent storage site.

If these and the other BRC recommendations, such as making the Nuclear Waste Fund available for its intended purpose, are implemented by Congress, CIS and the repository could move forward with new energy. In fact, it is conceivable that a CIS site could be established within a decade, and unless officially ruled out by scientific review or a future action of Congress or the courts, Yucca Mountain remains an option for permanent disposal. We were heartened by Commission Co-Chair and General Brent Scowcroft's remarks at the February 8th House Science, Space and Technology Committee hearing on the BRC report when he noted that Yucca Mountain could still be an option as a repository if the State of Nevada were to change its mind and join Nye County, Nevada and communities near Yucca Mountain in support of the Yucca Mountain site. Recall the State of Nevada was for the repository before it was against it,[2] and it is not exempt from the consent-based approach and potential incentives addressed in the BRC report.

Yucca Mountain License Application

Another factor regarding the timing of the proposed EIS process is the status of the Yucca Mountain License Application. The NWSC continues to urge the NRC to resume its review of the license application submitted by DOE. In addition, the U.S. Court of Appeals may rule later this year on whether the NRC *must* continue that review.

Extended Storage Research

Additionally, it makes no sense to perform the EIS on the effects of long-term storage before the results of the technical work are known. The technical program to examine long-term dry storage is just now getting underway, and much research needs to be done to more fully understand the effects of storage up to 300 years on SNF and dry cask storage system components. It will involve a substantial amount of experimental and analytical work. Some of the experiments will take years to conduct. Rather than doing an EIS now, the NRC should gather data, analyze and refine it, develop and validate models, and use those models to make predictions of long-term storage performance. Only at that point will NRC be in a position to assess the environmental impacts.

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[2] In 1975, the Nevada Legislature adopted Assembly Joint Resolution No. 15 (File Number 184), which strongly urged the U.S. Energy Research & Development Administration to choose the Nevada Test Site for the storage and processing of nuclear material provided acceptance of 5 conditions.

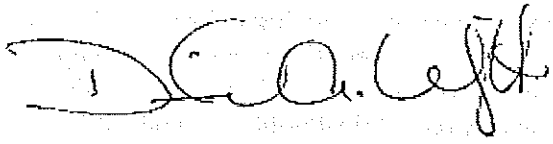
While pleased that NRC, DOE, EPRI and others are embarking on this important research effort, we believe that such research work should proceed separately from an EIS process. The NRC should dispense with the pre-scoping and wait at least 5 years to allow the extended storage technical program to mature, as well as (hopefully) the national policy on SNF. Following the normal course of revisiting Waste Confidence every 5 to 10 years, the NRC should then take the appropriate action, whether it be an EIS or something else, based on the conditions at the time.

* * *

The NRC's recent approval of the first new license for a nuclear power plant since 1978 is worth noting. Consistent with its charge by the Administration to review policies for managing the back end of the nuclear fuel cycle and recommend a new plan, the BRC report offers a number of recommendations that, if implemented, will go a long way toward providing this important and growing industry with needed certainty regarding used fuel management. Instead, the draft report issued by the NRC, which begins an evaluation of on-site storage for hundreds of years, reflects acquiescence to the present situation. Clearly, these initiatives are not in sync, and the NWSC calls for the NRC to rectify this by dispensing with the pre-scoping and continue on its normal course of reviewing Waste Confidence for updates every 5 to 10 years. Furthermore, we ask the NRC to hold DOE accountable for meeting its unambiguous obligations under the law so that extended on-site storage is not needed, we seek NRC's support of the Administration's implementation of the BRC recommendations in a timely manner, and we continue to urge the NRC to resume its review of the Yucca Mountain license application. In short, we ask the NRC to do everything in its power to advance, and at a minimum to not hinder, a sound national used fuel management policy.

Finally, the NWSC respectfully requests that the NRC make a concerted effort to consult with affected stakeholders, including licensees as well as states, tribes, and local communities, *in advance* of undertaking significant shifts in its longstanding Waste Confidence review processes. While finding the matter at hand premature, we thank you for the opportunity to provide our input on behalf of our members and the consumers and citizens that they collectively serve.

Sincerely,



David A. Wright
Chairman, Nuclear Waste Strategy Coalition
Vice-Chairman, South Carolina Public Service Commission

The Nuclear Waste Strategy Coalition is an ad hoc organization representing the collective interests of state utility regulators, state attorneys general, consumer advocates, electric utilities, and associate members, on nuclear waste policy matters. NWSC's primary focus is to protect ratepayer payments into the Nuclear Waste Fund and to support the removal and ultimate disposal of spent nuclear fuel and high-level radioactive waste currently stranded at some 125 commercial, defense, research, and decommissioned sites in 39 states.

Sustainable Fuel Cycle
TASK FORCE
www.sustainablefuelcycle.com

Sustainable Fuel Cycle Task Force Science Panel

February 17, 2012

Ms. Christine Pineda, Project Manager
Mailstop EBB-2B2
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Ms. Pineda,

The Science Panel of the Sustainable Fuel Cycle Task Force appreciates the opportunity to provide comments on the "Draft Report for Comment -- Background and Preliminary Assumptions for an Environmental Impact Statement -- Long-Term Waste Confidence Update" (hereinafter "Draft Report"). We commend the NRC staff for its hard work on this effort and appreciate the fact that the Commission initially tasked it to develop a long-term update of its most recent Waste Confidence decision, addressing the impacts of storage beyond a 120-year timeframe.

As scientists who have worked for many decades to provide a scientifically sound approach for safely managing and disposing of our nation's used nuclear fuel and high level radioactive wastes, we urge the staff to more fully use this process to articulate the importance of this generation developing a geologic repository capability in a timely fashion. We are concerned the draft report does not sufficiently address the significant technical and institutional uncertainties and consequences if this nation continues to defer indefinitely developing a functional disposal capacity for radioactive wastes. This country has been producing high level radioactive wastes from reactors for over fifty years without overcoming the social/political obstacles, such as those that have recently stopped progress on the Yucca Mountain geologic repository. To meet our needs for clean affordable energy, we need continued nuclear electric power. We must act responsibly now to provide a real disposal capacity and not just pass the environmental consequences of inaction on to future generations.

The Blue Ribbon Commission on America's Nuclear Future (BRC) has just issued their report confirming that there is no known alternative to geologic disposal, that current law establishes Yucca Mountain as the site for the first U.S. repository, and that prompt efforts are needed to develop a geologic disposal facility. Although we understand this Administration does not wish to pursue the Yucca Mountain facility on political/policy grounds, this posture toward inaction does not relieve the NRC from evaluating the consequences of inaction and articulating the national need for action.

The NRC has a National Environmental Policy Act (NEPA) responsibility to consider the lasting environmental impacts of its regulatory actions that permit the continued operation and expansion of nuclear energy production. We support the need for this energy source, but we also strongly believe, as the BRC also states, that this generation must produce a disposal solution in parallel. It is immoral and unethical for this generation to reap the benefits of the nuclear electrical energy and just put the used nuclear fuel/ high level radioactive waste in indefinite engineered storage for over a hundred years, leaving the waste disposal problem to our great

grandchildren. In our view, the Nuclear Regulatory Commission's Waste Confidence Rule decision did not sufficiently consider the long term environmental aspects of their decision. However, starting this NEPA Environmental Impact Statement (EIS) process is a good step toward rectifying the need to fully evaluate the societal impacts of the current national policy of inaction.

To appropriately evaluate the environmental impacts of the current situation, we recommend the draft report be strengthened by:

- Accelerating the schedule: which currently has a distant 2019 EIS milestone. This is much too slow to enable the importance of this matter to be understood by those potentially affected and those with decision-making responsibility.
- A more complete articulation of the societal uncertainties of the allocations of future resources to dispose of previous generations' wastes is needed. We believe there are substantial uncertainties in what future generations may do, or will be able to do, to deal appropriately with wastes that were left to them in a non-passive state. To our knowledge, traditional EIS efforts have not depended upon generations far into the future to take active corrective or continued maintenance actions to mitigate potential adverse environmental consequences from wastes that they did not make.

  We realize that it will be a challenge for the NRC staff to address such societal uncertainties in an EIS, but we consider this assessment necessary based on the current Administration's posture toward inaction. What rationale is there that future generations will be better able (and willing) to deal with the technical, security, economic, and political aspects of the existing wastes than we are? As difficult as it may be, this task has to be addressed by the NRC staff in this EIS within a reasonable timeframe.
- The EIS process must realistically consider that nuclear utilities are currently loading large (over 15 MTU of used nuclear fuel) canisters with higher burn-up used nuclear fuel that will have to be received "as is" in whatever disposition (either consolidated interim storage or direct disposal) facility that may be developed. This is because a number of reactors have decommissioned and demolished their used fuel handling buildings. As more power reactors reach the end of their useful lives this number of large loaded canisters will substantially increase. The EIS needs to evaluate that there are meaningful environmental impacts in costs, radiation exposures, and risks to repackage the thousands of these canisters to enable emplacement in possible geologic settings that are not compatible with such large packages.

  The physical size (well over 100 tons) and higher thermal characteristics of these large packages are unlikely to be able to be accommodated in geologic settings that cannot accommodate ramps, e.g. deep salt formations, or withstand higher near field environmental temperatures without adversely impacting geologic retardation, e.g. clays. Although, again, such long term evaluations will be difficult given currently available information, but such aspects clearly must be incorporated into the EIS plans.
- The EIS should fully consider the technical and safety issues associated with long-term dry storage: cladding deterioration, containment seal and boundary integrity, concrete deterioration, the ability to convincingly demonstrate compliance with transportation safety requirements after extended periods of on-site storage. A more complete

development of these and other relevant technical issues is contained in the Nuclear Waste Technical Review Board report, *Evaluation of the Technical Basis for Extended Dry Storage and Transportation of Used Nuclear Fuel,* December 2010.

These are just examples of issues that must be addressed by the NRC staff in this challenging endeavor. We wish that the nation could be moving forward with the Yucca Mountain process as defined by the current law, and such an endeavor would not be necessary. However, this Administration has done what it has done, and thus this EIS needs to move forward to address these difficult issues to provide a NEPA basis in the absence of action to move forward toward a repository at Yucca Mountain. To delay addressing, or in effect to "whitewash", these issues is not a responsible path forward. That is a path that could have serious adverse consequences on our needed nuclear energy production capabilities.

We look forward to assisting the NRC staff in any way we can.

Yours sincerely,

Charles Fairhurst, Ph.D.

D. Warner North Ph.D.

Ruth Weiner, Ph.D.

Isaac Winograd, Ph.D.

Wendell Weart, Ph.D.

Eugene H. Roseboom Jr., Ph.D.

BRIAN SANDOVAL
Governor

STATE OF NEVADA

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Executive Director

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February 17, 2012

Christine Pineda, Project Manager
U.S. Nuclear Regulatory Commission
Office of Nuclear Material Safety and Safeguards
Mailstop EBB-2B2
Washington, DC 20555-0001

Re: Draft Report for Comment: Background and Preliminary Assumptions for an Environmental Impact Statement – Long-Term Waste Confidence Update, December 2011

Dear Ms. Pineda:

The State of Nevada Agency for Nuclear Projects respectfully submits the attached comments and supporting documents in response to the Background and Preliminary Assumptions for an Environmental Impact Statement – Long-Term Waste Confidence Update December 2011.

We appreciate the opportunity to comment on this matter.

Sincerely,

Robert J. Halstead
Executive Director

RH/sja
cc Marta Adams, Chief Deputy Attorney General
Affected Units of Local Government and Tribes
Western Interstate Energy Board HLW Committee

State of Nevada
Agency for Nuclear Projects
Comments
On
U.S. Nuclear Regulatory Commission
Draft Report for Comment
Background and Preliminary Assumptions
For an Environmental Impact Statement –
Long-Term Waste Confidence Update (December 2011)

February 17, 2012

Appropriateness of 200-year Span for the Environmental Impact Statement (EIS)

NRC staff "plans to develop the EIS to analyze impacts of storage from approximately the middle of this century for a period of 200 years. ...the oldest spent fuel will have been stored for about 100 years by the middle of the century. The staff selected a 200-year span for the EIS because that is approximately when this oldest fuel will approach 300 years in storage. The 300-year period is the timeframe being used by NRC and others in technical analyses to identify spent fuel aging issues." [p.6]

We support the staff decision to adopt a 200-year span for the EIS, and the use of a 300-year timeframe for analyses of spent fuel aging issues. The 200-year span for the EIS is an appropriate bounding period, considering the current programmatic and policy situation. The 300-year period is an appropriate bounding timeframe for technical analyses of stored spent fuel aging issues.

However, we suggest that the EIS also evaluate the radiological and thermal characteristics of spent fuel after 50 years and 100 years of storage. Due to decay of shorter-lived fission products, especially Cs-137 and Sr-90, the thermal output and surface dose rate of spent fuel declines significantly between 50 and 100 years of storage. These are particularly important characteristics of spent fuel for the planning and design of the storage and transportation system. Table 1, from the 1980 Waste Confidence proceeding, illustrates this trend for moderate burn-up fuel, typical of assemblies discharged from U.S. pressurized water reactors (PWRs) during the 1980s.

The annual average burn-up of discharged fuel has steadily increased over past three decades. The EIS should provide data for both moderate and high-burn-up fuel (greater than 50,000 MWDt/MTU for PWR and greater than 40,000 MWDt/MTU for BWR), showing thermal and radiological characteristics for representative assemblies after 50, 100, 200, and 300 years of storage.

Table 1. Thermal and Radiation Characteristics of A Spent Fuel Assembly
(After 33,000 MWDt/MTU burn-up)

Age (yr)	Thermal Power (Watts/assembly)	Activity (curies/assembly)	Surface Dose Rate (rem/hr)
1	4,800	2.5×10^6	234,000
5	930	6.0×10^5	46,800
10	550	4.0×10^5	23,400
50	250	1.0×10^5	8,640
100	130	5.0×10^4	2,150
500	45	2.5×10^3	58
1,000	26	1.7×10^3	9.6
5,000	15	6.0×10^2	2.5
10,000	6.4	4.5×10^2	1.8

Source: DOE-NRC, In the Matter of Proposed Rulemaking on the Storage and Disposal of Nuclear Waste (Waste Confidence Rulemaking) PR-50, 51 (44FR61372) Statement of Position of the United States Department of Energy, DOE/NE-0007 (April 15, 1980) Table II-4, p. II-56.

While Nevada does support the 200-year time span for this EIS, there is ample reason to believe that technology development will determine the actual time frame for any spent fuel storage site, whether regional or centralized or even at reactor. One has only to review the technological advances made in the last 100 years to believe that new advances in the next 50-100 years will play a major role in determining the manner in which spent fuel and high-level waste will be managed. Indeed, the history of geologic disposal as a concept is less than 60 years old, dating from the Princeton Conference in 1955 and the resulting publication by the National Academy of Sciences of The Disposal of Radioactive Waste on Land in 1957. The commercialization of dry storage technology is barely 30 years old. The EIS should make the point that, even though the time frame for this EIS is 200 years, there are strong reasons to believe that new management solutions will evolve before then, and that any interim storage facility will not likely become a de facto repository.

Implications of Extended Storage for Geologic Disposal

The NRC Draft Report for Comment states that the EIS "will include geologic disposal as the end point for all scenarios evaluated. The Waste Confidence EIS will not include an assessment of the impacts of the disposal facility; these impacts will be assessed in an EIS for licensing a disposal facility." [p.9] Nevada agrees that this EIS on extended storage need not assess the impacts of a disposal facility. However, we strongly believe that this EIS must broadly and fully assess the impacts of extended storage on the geologic disposal facility.

The EIS should discuss the advantages and disadvantages of an integrated waste management strategy, based on extended storage, for the design and operation of a geologic repository, relative to transportation, surface facilities, waste package design, thermal loading, and long-term performance, as discussed in the BRC Final Report. Under the alternative scenarios

suggested for the EIS, the same analyses should be performed for a system including one or more interim storage facilities, and/or a reprocessing facility.

The EIS should specifically address the following issues:

a. What would be the advantages and disadvantages of extended storage (from 50 years to 300 years) on the design of a repository? How might this affect the selection of a site for a geologic repository?

b. What would be the advantages and disadvantages of extended storage on the design of a repository waste package, considering a variety of dual purpose canister designs?

c. What would be the advantages and disadvantages of extended storage on worker exposures at the reactor sites, storage facility sites, and at a repository site?

d. What would be the advantages and disadvantages of extended storage on the transportation of spent fuel to and from an interim storage site, to and from a repository, and regarding design of the transportation packages?

e. What would be the advantages and disadvantages of extended storage on public exposures from the transportation, storage, and disposal of such spent fuel?

Human Error and Human Factors Management

The NRC Draft Report for Comment makes only one reference to human error: "The EIS will consider different accident causes, such as human error, mechanical failure, and natural events." [p.13] The EIS should fully discuss and evaluate the effect of human factors with respect to system and component design, fabrication, operations, and response to incidents and accidents. Human error should be considered as a safety factor in routine operations, as well as a causal factor or exacerbating factor in accidents. Considering the extended time period being evaluated for dry storage of spent fuel in welded canisters without repackaging, it is especially important to assess the potential implications of human errors in canister loading and closure; assess the need for NRC inspection of canister loading operations at reactors; and assess the need for long-term monitoring of canister performance in dry storage. The EIS should also specifically consider the implications of human errors in loading and closure at reactors or at interim storage facilities, in the event that canisters are accepted for repository emplacement without repackaging.

Use of "Generic sites" and "Composite sites" for Impact Assessment

The NRC Draft Report for Comment proposes that the EIS use "generic sites" and "composite sites" to estimate impacts of extended storage installations and associated transportation. "A single generic, composite site may be based on information about several actual sites: a generic, composite site on a seacoast may be derived from information about two or three actual coastal sites and, possibly, other sites." [p.7] This approach is problematic in two respects: the impact assessment would not be legally sufficient for NEPA purposes, and the findings would have little or no value to affected stakeholders in any future use of the EIS. From the standpoint of

stakeholder acceptance, evaluating "composite generic sites" based on actual sites is a recipe for disaster. Members of the public will be looking for any indication that "their" area is under consideration without any notification or expression of interest. The statement on page 14 that the "staff will also consider analyzing impacts from one or more actual sites for comparison..." only exacerbates this perception. This methodology would totally negate the "consent-based" approach recommended in the BRC final report. The EIS should evaluate the basic attributes of a generic facility and identify favorable and unfavorable siting conditions for each type of facility on a generic basis. Any detailed evaluation of site-specific impacts should be left for the required NEPA documents at a future time.

Transportation

The EIS should consider the extensive recommendations regarding spent fuel transportation in the Blue Ribbon Commission (BRC) on America's Nuclear Future Final Report issued in January 2012. The NRC Draft Report for Comment acknowledges the BRC Draft Report recommendations regarding geologic disposal and interim storage [p.8], but ignores the BRC recommendations regarding transportation. The BRC Final Report contains a new chapter, [Pp.81-87] written after the NRC Draft Report, which contains major new recommendations regarding transportation safety, security, and logistics, and specifically endorses the risk management measures recommended by the National Academies in their 2006 report, Going the Distance?: The Safe Transport of Spent Nuclear Fuel and High-level Radioactive Waste in the United States.

Both the Blue Ribbon Commission and the National Academies urged the NRC to proceed with its previous plans for full-scale physical testing of spent fuel shipping casks. Full scale cask testing is not a requirement for NRC certification. Of the currently licensed shipping casks, none have been tested full-scale. In place of full-scale testing, the NRC relies on scale model testing and computer simulation. The possibility of storage for 200 years or more prior to off-site transportation, and the possibility of multiple shipments between reactors, storage facilities, reprocessing facilities and repositories, underscores the need for full-scale physical testing of shipping containers.

The EIS should consider the full range of spent fuel transportation impacts addressed in the NRC licensing proceeding for Yucca Mountain and the associated NEPA documents. The Draft Report for Comment states that NRC staff "will use, where appropriate, aspects of transportation impact analyses contained in other recent NEPA documents." [p.10] The Draft Report further states the EIS "will consider transportation accidents previously analyzed in the context of radiation exposure,"[p.12] and "the analysis will seek to provide quantitative information" on "potential impacts of transportation, such as costs and radiation exposure."[p.16]

The EIS for the Long-Term Storage Waste Confidence Update should evaluate the full range of radiological and non-radiological transportation impacts likely be addressed in any future NRC licensing proceeding for interim storage or geologic disposal facilities. The scoping of transportation impacts should be guided by the decision of the NRC Atomic and Safety Licensing Boards (ASLBs) in the Yucca Mountain licensing proceeding:

> ... there can be "no serious dispute" that the NRC's environmental analysis in connection with licensing nuclear facilities should extend to "related offsite construction projects – such as connecting roads and railroad spurs." Likewise, there can be no serious dispute that the NRC's NEPA responsibilities do not end at the boundaries of the proposed repository, but rather extend to the transportation of nuclear waste to the repository. The two are closely interdependent. Without the repository, waste would not be transported to Yucca Mountain. Without transportation of waste to it, construction of the repository would be irrational. Under NEPA, both must be considered. [1]

Based on this determination, the ASLBs admitted 46 NEPA transportation or transportation-related contentions addressing virtually every aspect of repository transportation, including construction and operation of rail access to the proposed repository site.

The EIS for the Long-Term Storage Waste Confidence Update should evaluate the same radiological transportation impacts considered in the Yucca Mountain licensing process. NRC staff reviewed and adopted the DOE Supplemental Environmental Impact Statement (SEIS), including the transportation impact calculations for the mostly rail transportation scenario.[2] The SEIS evaluated transportation radiological impacts in four categories: (1) "incident-free" exposures to members of the public residing near transportation routes, cumulative total up to 2,500 person-rem dose and 1.5 latent cancer fatalities, and in certain special circumstances (for example, 0.016 rem to a person in a traffic jam); [Pp.6-20, 6-21, 8-41] (2) "incident-free" exposures to transportation workers such as escorts, truck drivers, and inspectors, cumulative total up to 13,000 person-rem and 7.6 latent cancer fatalities (by administrative controls, DOE would limit individual doses to 0.5 rem per year; the allowable occupational dose is 5 rem per year); [Pp.6-21, 8-41] (3) release of radioactive material as a result of the maximum reasonably foreseeable transportation accident (probability of about 5 in one million per year), involving a fully engulfing fire, 34 rem dose to the maximally exposed individual, 16,000 person-rem population dose and 9.4 latent cancer fatalities in an urban area, and cleanup-costs of $300,000 to $10 billion; [Pp.6-15, 6-24, G-56] and (4) release of radioactive material following a successful act of sabotage or terrorism, using a high-energy density device, resulting in 27-43 rem dose to the maximally exposed individual, 32,000-47,000 person-rem population dose and 19-28 latent cancer fatalities in an urban area, and cleanup costs similar to a severe transportation accident. [Pp.6-27, CR-467]

The EIS should specify its assumptions about NRC regulation of spent fuel shipments to interim storage and geologic disposal facilities. Under current Federal law, shipments of spent nuclear fuel and high-level radioactive waste to facilities constructed under the Nuclear Waste Policy Act (NWPA) as amended, would not be regulated by NRC, except for use of NRC-certified casks and shipment notification to states, as specifically required by the NWPA. Former NRC Chairman Richard Meserve explained: "If DOE takes custody of the spent fuel at the licensee's site, DOE regulations would control the actual spent fuel shipment. Under such

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[1] NRC, Atomic Safety and Licensing Boards, Memorandum and Order Identifying Participants and Admitted Contentions, Docket N0. 63-001-HLW (May 11, 2009).

[2] NRC, U.S. Nuclear Regulatory Commission Staff's Adoption Determination Report for the U.S. Department of Energy's Environmental Impact Statements for the Proposed Geologic Repository at Yucca Mountain, Pp. 3-13, 3-15, 5-1 (September 5, 2008).

circumstances, the NRC's primary role in transportation of spent fuel to a repository would be certification of the packages used for transport. ... However, if NRC licensees are responsible for shipping the spent fuel not only must the transport container be certified by the NRC, but also the shipment must comply with NRC regulations for the physical security of spent fuel in transit (10 CFR Part 73). NRC licensees are subject to inspection for compliance with the NRC's transportation safety and security regulations. The NRC also issues Quality Assurance (QA) program approvals for radioactive material packages that apply to the design, fabrication, use and maintenance of these packages. Activities conducted under an NRC QA program are also subject to NRC inspection."[3]

The EIS should consider future developments in the transportation environment which could affect the safety and security of spent fuel shipments. The NRC Draft Report for comments states that the EIS "will not speculate about changes in the national transportation infrastructure or transportation modes that may occur decades or centuries from now." [p.10] The extended period of the EIS must consider likely changes to the freight transportation environment. Movements of spent nuclear fuel by mid-century will occur in an environment that is much different than today. The average speed of freight rail has changed little since the 19th century. Railroads recognize that the greatest opportunity for improved service lies in increased speeds. Over the course of the next century, average freight rail speeds will increase, with fewer and shorter stops. Additionally, railroads are working to enhance their intermodal connectivity. This is particularly important given the growing number of nuclear power plants not currently serviced by freight rail. Technological changes will also reduce train crew requirements and will result in increased use of remote controlled trains. The coming years will see increased use of these trains for cross-country shipments in addition to their current widespread use in rail yards. The EIS should consider the changes to the accident environment posed by faster shipments, as well as the possibility of a large increase in smaller intermodal shipments.

Terrorism and Sabotage

The NRC Draft Report for Comment states that NRC staff "plans to consider the environmental impacts of terrorism related to storage and transportation at a generic level." [p.13] Nevada generally agrees with the generic study approach suggested and use of the information resources identified, including recent and ongoing NRC rulemaking activities regarding 10 CFR Part 73. Given the long timeframe covered by the EIS, provisions should be made for periodic updating of the terrorism and sabotage analyses to address: (1) advances in the technology of terrorism and counter-terrorism; (2) changes in population density near storage facilities and shipment routes; and (3) changes in understanding and definition of the design basis events and design basis threats.

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[3] R.A. MESERVE, RESPONSES TO QUESTIONS FROM SENATOR DURBIN (Letter dated March 22, 2002) NRC-Durbin-ML021060662.pdf (May 10, 2002).

KEY: ~~stricken~~ = removed, old language.
underscored = added, new language.

Authors and Status List versions

S.F. No. 2187, as introduced - 87th Legislative Session (2011-2012)

Posted on Feb 29, 2012

A resolution
memorializing the President and Congress to enact legislation and take other federal government action related to interim storage of used nuclear fuel.

WHEREAS, nuclear utility ratepayers in Minnesota and throughout the United States have contributed more than $30,000,000,000 in fees and interest, as mandated under the Nuclear Waste Policy Act of 1982 (NWPA), for the purpose of removing used nuclear fuel from commercial reactor sites and defense-related high-level radioactive waste from defense sites; and

WHEREAS, the federal government failed to satisfy the NWPA's statutory requirement to begin accepting used nuclear fuel in 1998 and has failed to meet the terms of its contracts with United States nuclear plant operators; and

WHEREAS, the 104 operating United States commercial reactors have accumulated some 77,000 metric tons of used nuclear fuel; and

WHEREAS, the current administration has terminated and Congress has ceased funding of all activities related to the license review or further development of a permanent central disposal repository at the Yucca Mountain Project in Nevada, which has been the federal government's only intended destination for used commercial fuel and defense-related waste; and

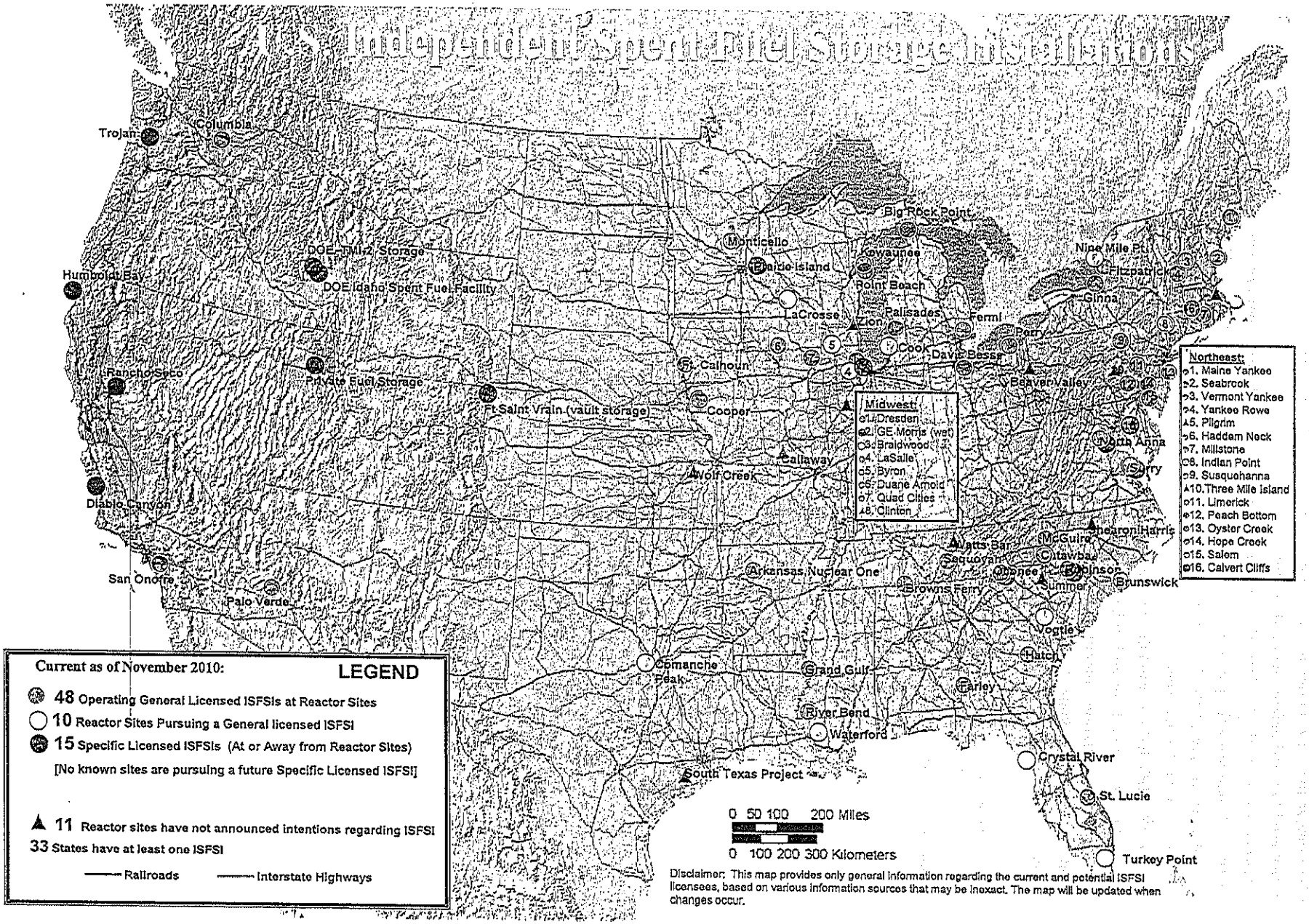
WHEREAS, there are lawsuits attempting to compel the federal government to meet its obligations under the NWPA; and

WHEREAS, the current administration in January, 2010, appointed a Blue Ribbon Commission on America's Nuclear Future comprised of distinguished American scientists and nuclear policymakers to review various alternative options and make recommendations for future safe management of United States commercial used nuclear fuel and defense waste; and

WHEREAS, the Blue Ribbon Commission has recommended an integrated nuclear fuel management program incorporating: (1) development of one or more Nuclear Regulatory Commission-licensed (NRC) private or government-owned centralized interim storage facilities in communities in states that would willingly host such facilities; (2) continued public and private sector research, development, and deployment of used fuel and nuclear waste recycling technologies to close the nuclear fuel cycle in a safe, environmentally responsible, proliferation-resistant, and economically viable process; and (3) assured access by the nuclear waste program to revenues generated by consumers' continued payments and to existing balances in the Nuclear Waste Fund; NOW, THEREFORE,

BE IT RESOLVED by the Senate of the State of Minnesota that the legislature of the state of Minnesota calls on the President Obama Administration and the United States Congress to: (1) adopt legislation enabling the construction of one or more centralized interim fuel storage facilities through directives to the United States Department of Energy and through incentives to interested communities funded through access to the accumulated Nuclear Waste

Fund;
(2) recognize there are willing host communities and states that are ready to voluntarily accept used fuel and defense waste shipments;
(3) assure access by the Nuclear Waste Management program to the revenues generated by consumers' continuing fee payments and to the significant balance in the Nuclear Waste Fund; and
(4) enable one or more NRC-licensed private interim storage facilities to meet this public policy need of the United States.
BE IT FURTHER RESOLVED that the Secretary of the Senate is directed to prepare a copy of this resolution, to be authenticated by his signature and that of the Chair of the Senate Rules and Administration Committee, and transmit it to the President of the United States, the Speaker of the United States House of Representatives, the Majority Leader of the United States Senate, and the Secretary of the United States Department of Energy.


U.S. Independent Spent Fuel Storage Installations
Trojan
Columbia
Humboldt Bay
DOE - INTEC Storage
DOE Idaho Spent Fuel Facility
Rancho Seco
Private Fuel Storage
Ft Saint Vrain (vault storage)
Diablo Canyon
San Onofre
Palo Verde
Comanche Peak
South Texas Project
Arkansas Nuclear One
Wolf Creek
Callaway
Cooper
St. Calhoun
LaCrosse
Monticello
Prairie Island
Big Rock Point
Kewaunee
Point Beach
Zion
Palisades
Cook
Davis Besse
Fermi
Perry
Beaver Valley
Ginna
Nine Mile Pt
Fitzpatrick
North Anna
Surry
Watts Bar
Sequoyah
Browns Ferry
Shearon Harris
McGuire
Catawba
Oconee
Robinson
Summer
Brunswick
Vogtle
Hatch
Farley
Grand Gulf
River Bend
Waterford
Crystal River
St. Lucie
Turkey Point
Midwest:
1. Dresden
2. GE Morris (wet)
3. Braidwood
4. LaSalle
5. Byron
6. Duane Arnold
7. Quad Cities
8. Clinton
Northeast:
1. Maine Yankee
2. Seabrook
3. Vermont Yankee
4. Yankee Rowe
5. Pilgrim
6. Haddam Neck
7. Millstone
8. Indian Point
9. Susquehanna
10. Three Mile Island
11. Limerick
12. Peach Bottom
13. Oyster Creek
14. Hope Creek
15. Salem
16. Calvert Cliffs
Current as of November 2010:
LEGEND
48 Operating General Licensed ISFSIs at Reactor Sites
10 Reactor Sites Pursuing a General licensed ISFSI
15 Specific Licensed ISFSIs (At or Away from Reactor Sites)
[No known sites are pursuing a future Specific Licensed ISFSI]
11 Reactor sites have not announced intentions regarding ISFSI
33 States have at least one ISFSI
Railroads
Interstate Highways
0 50 100 200 Miles
0 100 200 300 Kilometers
Disclaimer: This map provides only general information regarding the current and potential ISFSI licensees, based on various information sources that may be inexact. The map will be updated when changes occur.

Secretarial Determination of the Adequacy of the Nuclear Waste Fund Fee

The Nuclear Waste Policy Act (NWPA) establishes a Nuclear Waste Fund to be used to pay for the disposition of commercial spent nuclear fuel (SNF) and high-level radioactive waste (HLW). Section 302(a)(2) of the NWPA establishes a fee of 1 mill (1/10-cent) per kilowatt-hour of electricity generated and sold that must be paid by nuclear utilities and deposited in the Fund. The NWPA also requires the Secretary to review the adequacy of this fee annually and, upon a determination that either insufficient or excess funds are being collected, to propose an adjustment to the fee to ensure that the full costs of the Federal Government's disposal program will be recovered from generators and owners of high-level radioactive waste or spent nuclear fuel. The Secretary must transmit any proposed fee adjustment to Congress for a review period of 90 days of continuous session, after which time the adjustment becomes effective unless contrary legislation is enacted into law.

I adopt and approve the attached annual determination of the Director, Office of Standard Contract Management, that there is no reasonable basis at this time to conclude that either excess or insufficient funds are being collected and thus will not propose an adjustment to the fee to Congress; the fee will therefore remain at the amount specified in the Nuclear Waste Policy Act pending the next annual review.

Steven Chu

DEC 16 201.

Steven Chu

Date

Attachment

Department of Energy
Washington, DC 20585

December 12, 2011

MEMORANDUM FOR SEAN LEV
ACTING GENERAL COUNSEL

FROM: DAVID K. ZABRANSKY, DIRECTOR
OFFICE OF STANDARD CONTRACT MANAGEMENT

SUBJECT: Annual Determination of the Adequacy of the Nuclear Waste Fund Fee

The Nuclear Waste Policy Act (NWPA) establishes a Nuclear Waste Fund to be used to pay for the disposition of commercial spent nuclear fuel (SNF) and high-level radioactive waste (HLW). Section 302(a)(2) of the NWPA establishes a fee of 1 mill (1/10-cent) per kilowatt-hour of electricity generated and sold. That fee must be paid by nuclear utilities and deposited in the Fund. The NWPA also requires the Secretary to review the adequacy of this fee annually and, upon a determination that either insufficient or excess funds are being collected, to propose an adjustment to the fee to ensure that the full costs of the Federal Government's disposal program will be fully recovered from generators and owners of HLW or SNF. The Secretary must transmit any proposed fee adjustment to Congress for a review period of 90 days of continuous session, after which time the adjustment becomes effective unless contrary legislation is enacted into law. Since the enactment of the NWPA in January 1983, the Secretary has never proposed a fee adjustment. The most recent assessment of the adequacy of the fee, completed in 2010, concluded that there was no reasonable basis at that time to propose any adjustment of the fee to Congress.

The Office of Standard Contract Management (OSCM) has conducted an annual review of the adequacy of the Nuclear Waste Fund fee. A copy of this "Annual Review of the Adequacy of the Nuclear Waste Fund Fee" is attached. In this review, OSCM considered developments that have occurred during the past year, including the recommendations contained in the draft report issued by the Blue Ribbon Commission on America's Nuclear Future. This annual review concludes that there is no reasonable evidentiary basis to conclude that the current fee is generating either insufficient or excess funds to cover the costs of DOE's obligation to manage and dispose of SNF and HLW. Accordingly, I have determined that there is no basis to propose an adjustment to the fee to Congress and, therefore, the fee should remain at the amount specified in the NWPA.

Attachment

Annual Review of the Adequacy of the Nuclear Waste Fund Fee

INTRODUCTION: The Nuclear Waste Policy Act (NWPA) establishes a Nuclear Waste Fund to be used to pay for the disposition of commercial spent nuclear fuel (SNF) and high-level radioactive waste (HLW). Section 302(a)(2) of the NWPA establishes a fee, of 1 mill (1/10-cent) per kilowatt-hour of electricity generated and sold on or after April 7, 1983, that must be paid by nuclear utilities with standard contracts and deposited in the Fund. The NWPA also requires the Secretary to review the adequacy of this fee annually and, upon a determination that either insufficient or excess funds are being collected, to propose an adjustment to the fee to ensure that the full costs of the Federal Government's disposal program will be recovered from generators and owners of HLW or SNF. The Secretary must transmit any proposed fee adjustment to Congress for a review period of 90 days of continuous session, after which time the adjustment becomes effective unless contrary legislation is enacted into law. Since the enactment of the NWPA in January 1983, the Secretary has never proposed a fee adjustment. The most recent assessment of the adequacy of the fee, completed in 2010, concluded that there was no reasonable evidentiary basis to conclude that the current fee of 1 mill per kilowatt-hour was generating either insufficient or excess funds.[1] As a result, the fee remains at the amount specified in the NWPA.

Similarly, this annual review completed in 2011 concludes that there is no reasonable evidentiary basis to conclude that the current fee is generating either insufficient or excess funds. In such circumstances, the statutory framework and legislative intent support maintenance of the fee at the current amount, which is the amount specified in the NWPA.

BACKGROUND: Section 111(b)(4) of the NWPA states that one of the purposes of the NWPA is "to establish a Nuclear Waste Fund, composed of payments made by the generators and owners of [high-level radioactive] waste and spent fuel, that will ensure that the costs of carrying out activities relating to the disposal of such waste and spent fuel will be borne by the persons responsible for generating such waste and spent fuel." The legislative history of the NWPA confirms that Congress intended those who benefit from electricity supplied through nuclear power to pay for the disposal of nuclear waste and spent fuel created during the generation of that electricity.[2]

Section 302(a)(1) of the NWPA authorizes the Secretary of Energy to enter into contracts with generators or owners of HLW or SNF. Section 302(a)(5) requires that these contracts contain a provision under which the Secretary agrees to dispose of SNF and HLW in return for payment of

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[1] DOE, Secretarial Determination of the Adequacy of the Nuclear Waste Fund Fee (November 1, 2010) ("2010 Determination").

[2] *Commonwealth Edison Co. v. U.S. Dept. of Energy*, 877 F.2d 1042, 1047 (D.C. Cir. 1989) ("Congress, in passing the Nuclear Waste Policy Act, expressed its intention that 'the costs of such disposal should be the responsibility of the generators and owners of such waste and spent fuel.'") (citing NWPA, sec. 111(a)(4)); Congressional Record – Senate at S 15655 (December 20, 1982) ("The bill includes several new or modified concepts from the bill passed by the Senate in the last Congress. One of the most noteworthy of those is the proposal for an assured full-cost recovery by the Federal Government from nuclear power-supplied ratepayers for the nuclear waste programs included in the bill. By establishing a 1 mill-per-kilowatt-hour users fee on nuclear generated electricity, this bill for the first time would provide a direct financial linkage between the beneficiaries of nuclear power and the cost for interim management and ultimate disposal for nuclear wastes.").

the fees established by section 302. Thus, payment of the fee is the consideration for the Secretary's contractual obligations related to the disposal of HLW and SNF. Section 302(a)(2) sets the fee at 1.0 mill per kilowatt-hour of electricity generated by a civilian nuclear power reactor and sold on or after April 7, 1983 (this is, the date 90 days after the enactment date of the NWPA (January 7, 1983)). This fee results in the deposit of approximately $750 million of receipts annually into the Waste Fund. The Waste Fund's balance accrues annual interest of approximately $1 billion, producing total annual income into the Waste Fund of approximately $1.750 billion. The current value of the Waste Fund is approximately $26.7 billion.

Section 302(a)(4) of the NWPA provides for the Secretary annually to review the amount of the fee to "evaluate whether collection of the fee will provide sufficient revenues to offset the costs as defined in subsection (d)" of Section 302. Subsection (d) defines such costs in terms of expenditures from the Waste Fund "for purposes of radioactive waste disposal activities under Titles I and II" of the NWPA. Section 302(a)(4) further provides that, if the Secretary "determines that either insufficient or excess revenues are being collected," the Secretary "shall propose an adjustment to the fee to insure full cost recovery." The NWPA provides Congress with 90 days in which to act before the adjustment can take effect.[3]

The Secretary of Energy has determined that a Yucca Mountain Repository is not a workable option for permanent disposal of SNF and HLW. Consistent with that determination, on March 11, 2009, Secretary Chu announced that "the [Fiscal Year (FY) 2010] Budget begins to eliminate funding for Yucca Mountain as a repository for our nation's nuclear waste."[4] The Secretary stated that DOE "will begin a thoughtful dialogue on a better solution for our nuclear waste storage needs."[5] In its May 2009 budget request for FY 2010, DOE requested no funding for development of a Yucca Mountain repository.[6] Congress approved DOE's budget request in October 2009.[7]

In its February 2010 budget request for FY 2011, DOE stated that it "has been evaluating a range of options for bringing the [Yucca Mountain] project to an orderly close. In FY 2010, the Department of Energy will withdraw from consideration by the Nuclear Regulatory Commission the license application for construction of a geologic repository at Yucca Mountain, Nevada, in

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[3] The Eleventh Circuit in *Alabama Power* struck the "unless" clause from the fee adjustment statutory provision as violative of the Supreme Court's decision in *INS v. Chadha*, 462 U.S. 919 (1983). *Alabama Power Co. v. U.S. Dept. of Energy*, 307 F.3d 1300, 1308 (2002). As a result, the statute that remains reads "[t]he adjusted fee proposed by the Secretary shall be effective after a period of 90 days of continuous session have elapsed following the receipt of such transmittal [to Congress]," while the clause "unless during such 90-day period either House of Congress adopts a resolution disapproving the Secretary's proposed adjustment . . ." was invalidated.

[4] Statement of Steven Chu, Secretary of Energy, Before the Comm. on the Budget, United States Senate, at 3, *available at* http://energy.gov/congressional/downloads/microsoft-word-budget-testimony-3-11-09chu-final-4doc.

[5] *Id.*

[6] DOE, FY 2010 Cong. Budget Request, Budget Highlights, at 9, *available at* http://www.cfo.doe.gov/budget/10budget/Content/Highlights/FY2010Highlights.pdf. In addition, the request included minimal funding to continue participation in the NRC license application process for Yucca Mountain. *Id.*

[7] Energy and Water Development and Related Agencies Appropriations Act, 2010, Pub. L. No. 111-85, 123 Stat. 2845, 2864-65 (2009); Energy and Water Development and Related Agencies Appropriations Act, 2010, Conference Report, H.R. Rep. No. 111-278 at 20-21 (2009), reprinted in 2009 U.S.C.C.A.N. 1003.

accordance with applicable regulatory requirements."[8] The Administration's FY 2011 Budget similarly stated that "[i]n 2010 the Department [of Energy] will discontinue its application to the Nuclear Regulatory Commission (NRC) for a license to construct a high-level waste geologic repository at Yucca Mountain, Nevada."[9] It further stated that "all funding for development of the [Yucca Mountain] facility will be eliminated" for FY 2011.[10] Congress approved this budget request by providing no funding in FY 2011 for the development of the Yucca facility.[11]

Consistent with those determinations, on March 3, 2010, the Department filed a motion with the NRC to withdraw the license application for Yucca Mountain.[12] An NRC Board denied that motion on June 29, 2010, but the next day the NRC itself invited briefing as to whether it should review and reverse or affirm that determination.[13] On September 9, 2011, the NRC issued a Memorandum and Order stating that "the Commission finds itself evenly divided on whether to take the affirmative action of overturning or upholding the Board's decision." The Memorandum and Order then noted "budgetary limitations" and "direct[ed] the Board to, by the close of the current fiscal year, complete all necessary and appropriate case management activities, including disposal of all matters currently pending before it and comprehensively documenting the full history of the adjudicatory proceeding." On September 30, 2011, consistent with the NRC's September 9, 2011 Memorandum and Order, the Board suspended the Yucca license application proceeding.[14]

Although, as noted above, the Secretary has determined that a geologic repository at Yucca Mountain is not a workable option, the Secretary has repeatedly affirmed the Department's commitment to meeting its obligation to manage and dispose of the nation's SNF and HLW.[15] To explore options to meet this commitment, the Secretary, acting at the direction of the President, has established the Blue Ribbon Commission on America's Nuclear Future (BRC).[16] The BRC is directed by its charter to consider, among other things, (1) "[o]ptions for safe storage of used nuclear fuel while final disposition pathways are selected and deployed," (2) "fuel cycle technologies and R&D programs," and (3) "[o]ptions for permanent disposal of used fuel and/or high-level nuclear waste, including deep geological disposal."[17] Congress has provided $5

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[8] DOE, FY 2011 Cong. Budget Request, Budget Highlights. at 44, *available at* http://www.mbe.doe.gov/budget/11budget/Content/FY2011Highlights.pdf.

[9] Office of Management and Budget, Terminations, Reductions, and Savings, Budget of the U.S. Government, FY 2011, at 62, a*vailable at* http://www.whitehouse.gov/sites/default/files/omb/budget/fy2011/assets/trs.pdf.

[10] *Id.*

[11] Department of Defense and Full-Year Continuing Appropriations Act, 2011, Pub. L. No. 112-10, 125 Stat 38.

[12] DOE's Motion to Withdraw, In the Matter of U.S. Dep't of Energy, Docket No. 63-001-HLW, ASLBP No. 09 892-HLW-CAB04.

[13] In the Matter of U.S. Dep't of Energy, Docket No. 63-001-HLW, ASLBP No. 09-892-HLW.

[14] Memorandum and Order (Suspending Adjudicatory Proceeding), In the Matter of U.S. Dep't of Energy, Docket No. 63-001-HLW, ASLBP No. 09-892-HLW-CAB04.

[15] See, e.g., DOE, FY 2012 Congressional Budget Request at 139, available at: http://www.cfo.doe.gov/budget/12budget/Content/Volume7.pdf ("The Administration remains committed to fulfilling its obligations under the Nuclear Waste Policy Act."); DOE's Motion to Withdraw at 1, In the Matter of U.S. Dep't of Energy, Docket No. 63-001-HLW, ASLBP No. 09-892-HLW-CAB04 ("DOE reaffirms its obligation to take possession and dispose of the nation's spent nuclear fuel and high-level nuclear waste ... .").

[16] DOE, Secretary Chu Announces Blue Ribbon Commission on America's Nuclear Future (Jan. 29, 2010), *available at* http://www.energy.gov/news/8584.htm.

[17] Charter, Blue Ribbon Commission on America's Nuclear Future (filed March 1, 2010), *available at* http://www.brc.gov/index.php?q=page/charter ("BRC Charter").

million to fund the BRC so that it may consider "alternatives" for disposal of SNF and HLW.[18] The BRC issued a draft report in July 2011 and is required to issue a final report by January 2012.[19] The BRC's final report will inform the Department's policies toward fulfilling its obligation to manage and dispose of SNF and HLW.

DISCUSSION:

The Framework Established by the NWPA and the Standard Contracts

As explained above, Section 302(a)(1) of the NWPA provides that DOE's disposal contracts with generators or owners of HLW or SNF must contain a provision that requires the payment of a fee. Section 302(a)(5) provides that payment of the fee is the consideration for the Secretary's obligation under the contract to take and dispose of HLW and SNF. Nothing in the NWPA, or in the contracts entered into pursuant to Section 302 (standard contracts),[20] ties either of these obligations to progress on the Yucca Mountain repository or the use of the Yucca Mountain repository for the disposal of HLW or SNF. On the contrary, consistent with the statute, the standard contracts provide that "DOE shall accept title to all SNF and/or HLW, of domestic origin, generated by the civilian nuclear power reactor(s) specified in appendix A, provide subsequent transportation for such material to the DOE facility, and dispose of such material in accordance with the terms of this contract" without specifying a particular disposal site or method.[21] Thus, the statutory and contractual language is clear that the obligations to collect and to pay the waste fee are ongoing and tied to DOE's obligation to take and dispose of SNF and HLW, but not to the Yucca Mountain project. Those statutory and contractual obligations remain in place today.

Under the statutory and contractual scheme, payment of the fees continues to provide the consideration for DOE's performance of its obligations to dispose of these materials.[22] DOE, moreover, has clearly stated that termination of the Yucca Mountain project does not affect its commitment to fulfill its contractual obligations to take and dispose of HLW and SNF.[23] Accordingly, that DOE will not pursue the Yucca Mountain repository does not provide a basis to stop the collection and payment of the consideration for DOE's obligation to accept and dispose of HLW and SNF.

DOE's conclusion that its obligation to dispose of these materials – and thus the need to collect a fee to recover the costs of such disposal – is independent of the status of the Yucca Mountain repository, or any other repository, has been affirmed by the courts. As explained by the D.C. Circuit in *Indiana Michigan*:

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[18] Energy and Water Development and Related Agencies Appropriations Act, 2010 Pub. L. No. 111-85, 123 Stat. 2845, 2864-65 (Oct. 2009).
[19] BRC Charter, ¶ 4.
[20] 10 C.F.R. § 961.11 (text of the standard contract).
[21] *Id.*, Art. IV.B.1.
[22] NWPA, sec. 302(a)(5)("Contracts entered into under this section shall provide that ... (B) in return for the payment of fees ... the Secretary ... will dispose of the [HLW] or [SNF] ... .").
[23] *See supra* note 15.

> DOE's duty ... to dispose of the SNF is conditioned on the payment of fees by the owner ... *Nowhere, however, does the statute indicate that the obligation ... is somehow tied to the commencement of repository operations* ... The only limitation placed on the Secretary's duties ... is that that duty is "in return for the payment of fees established by this section."[24]

Similarly, courts have made clear that the waste fee is intended to defray the costs of a wide set of activities relating to permanent disposal. In *State of Nev. ex rel. Loux,* the court concluded that the NWPA requires the Waste Fund to cover the costs of a broad array of activities that relate to the ultimate disposal of waste, including pre-site characterization activities conducted by a state in which a repository may potentially be sited.[25] Significantly, moreover, in *Alabama Power*, which was decided after the Joint Resolution of Congress approving the Yucca Mountain site (i.e., the Yucca Mountain Development Act) became law, the court did not limit Section 302(d) to activities associated with Yucca Mountain; instead, the court noted that Section 302(d) permits expenditures for activities that "entail some sort of advancement or step toward permanent disposal, or else an incidental cost of maintaining a repository."[26] These cases are consistent with Congress's intent that the Waste Fund be used to pay the costs of DOE's entire disposal program, rather than only the costs of a particular repository.[27]

Basis for Any Adjustment to the Fee

The remaining question for decision is whether there is, at this time, a basis for the Secretary to propose to Congress an adjustment of the fee. As stated above, the NWPA prescribes that the fee "shall be equal to 1.0 mil" per kilowatt-hour of electricity generated and sold by nuclear utilities. The fee can be altered under the NWPA only through the adjustment provision of Section 302(a)(4), which requires the Secretary to propose an adjustment to the fee "[i]n the event the Secretary determines that either insufficient or excess revenues are being collected, in order to recover the costs incurred by the Federal Government that are specified in subsection (d)" and further provides Congress an opportunity to either allow the proposal to become law or enact contrary legislation. In other words, the NWPA requires the fee to remain at the

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[24] *Indiana Michigan Power Co. v. Dept. of Energy*, 88 F.3d 1272, 1276 (D. C. Cir. 1996) (quoting NWPA, sec. 302(a)(5)(B)) (emphasis added).

[25] *State of Nev. ex rel. Loux v. Herrington*, 777 F.2d 529, 532 (9th Cir. 1985). The issue in that case was whether Nevada was entitled to access the Waste Fund to pay for its pre-site characterization monitoring and testing activities at Yucca Mountain. Despite the fact that the NWPA – in sections 116(c)(1)(A) and 117(c)(8) – expressly authorizes funding of only *post*-site characterization monitoring and testing activities, the court liberally construed other NWPA provisions as also authorizing funding of *pre*-site characterization monitoring and testing activities. *Id.* at 532-35. The court indicated that a liberal construction of the NWPA's funding provisions is necessary to effectuate the statutory purpose of ensuring that generators and owners of HLW and SNF bear the full costs of the disposal of their HLW and SNF. *Id.* at 532. *See also Indiana Michigan*, 88 F.3d at 1275 (indicating that Congress intended Section 302(d) of the NWPA, which governs Waste Fund expenditures, to be interpreted more liberally than other sections of the NWPA).

[26] *Alabama Power*, 307 F.3d at 1313.

[27] *See* S. Rep. No. 100-517 at 1-2 (1988) ("The Nuclear Waste Policy Act of 1982 (NWPA) establishes a national policy and *program for safely storing, transporting, and disposing of spent nuclear fuel and high-level radioactive waste.* ... The NWPA also establishes a nuclear waste fund, to be composed of payments made by generators of spent fuel and high-level waste, from which the costs of *the program* are paid.") (emphases added).

statutorily-prescribed rate of 1.0 mill unless and until the Secretary determines an adjustment is necessary because excess or insufficient revenues are being collected. If the Secretary makes such a determination, the Secretary must report that determination to Congress, and wait 90 days to see whether Congress acts to disturb that judgment.[28]

The NWPA does not prescribe a methodology for how the Secretary must carry out the fee adequacy review provision of Section 302(a)(4). Rather, the NWPA gives the Secretary discretion in how he administers that provision each year. Congress chose to allow the Secretary to utilize his expertise with respect to nuclear waste disposal and cost issues in determining the manner of conducting the review and whether the fee should be altered.[29] The Secretary's fee review is predictive in nature and, as the Eleventh Circuit has recognized, involves "nebulous calculations that must be made in order to assess the costs of waste storage that will be incurred in the distant future."[30] The Eleventh Circuit opined that, if nuclear utilities were to challenge the merits of the Secretary's review, "[t]hey would face an insurmountable burden of proof."[31]

Over the years, the Secretary has exercised his discretion to implement varying approaches to evaluate the adequacy of the waste fee.[32] These approaches reflected the evolving nature of the disposal program, including changes in the direction of the program and changes in expectations concerning what activities would be undertaken in the future, what costs would be incurred, and what future market conditions would be. None of these annual evaluations has led to a determination by the Secretary that either insufficient or excessive fees were being collected such that an adjustment of the fee of 1.0 mill per kilowatt hour of electricity was necessary to ensure full cost recovery. The fee has, thus, remained unchanged since it was first established in the NWPA.

In this instance, we are aware of no evidence that would provide a reasoned and sound basis for determining that excess or insufficient revenues are being collected for the costs for which DOE is responsible under the NWPA's statutory scheme (and under its contractual obligations entered into pursuant to that scheme). The Department has determined that a repository at Yucca Mountain is not a workable option for meeting these obligations but is committed to meeting them. At the direction of the President and with funding provided by Congress, the Secretary has

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[28] NWPA, sec. 302(a)(4); *Alabama Power*, 307 F.3d at 1308.

[29] *See Alabama Power*, 307 F.3d at 1307 (finding that Congress entrusted the Secretary "full discretion to alter the fee" following his fee review if Congress did not itself timely act to modify it); *General Elec. Uranium Mgt. Corp. v. Dep't of Energy*, 764 F.2d 896, 905 (D.C. Cir. 1985) (applying Chevron deference to DOE interpretation of NWPA provision after finding that "DOE is indubitably entrusted with the administration of the Waste Act").

[30] *Alabama Power*, 307 F.3d at 1309.

[31] *Id.*

[32] For example, in the 1987 assessment, the number of cases (involving different host rock and locations among two repositories) was reduced from 10 to 5, as a result of the President's decision in May 1986 to approve only 3 candidate sites for characterization. In 1989, the number of cases was reduced to 1, as a result of the Nuclear Waste Policy Amendments Act's designation of Yucca Mountain as the only site to be characterized for the first repository. Program changes in other years were similarly reflected in fee adequacy assessments for those years. Notably, all fee adequacy assessments since 1995 have assumed that the NWPA's 70,000 MTHM emplacement limit would be repealed by Congress so that only one repository would be constructed to receive all the SNF produced by existing reactors. *See* Bechtel SAIC Company, LLC, History of Total System Life Cycle Cost and Fee Adequacy Assessments for the Civilian Radioactive Waste Management System, MIS-CRW-SE-000007 REV 00, at 10, 12, and 14-33 (Sep. 2008).

established the Blue Ribbon Commission to analyze alternatives and to provide recommendations for disposal of these materials. Future decisions as to these matters will be informed by the final recommendations of the BRC which are expected to be reported in January 2012. Although the BRC issued a draft report in July 2011, that draft merely "articulates a preliminary set of consensus recommendations for public review and input."[33] Thus no action has been or should be taken in light of the BRC's preliminary recommendations. The Department will carefully consider the final recommendations of the BRC in determining how to proceed to meet its obligations to safely manage and dispose of spent nuclear fuel and high-level radioactive waste. Until these recommendations have been issued and a determination made as to how to proceed, there remains no basis to conclude that the Department's means of meeting its statutory and regulatory obligations will require more or less money than would be collected through continued assessment of the fee at the level it has been set at for several decades and the accumulation of interest on the amounts in the Nuclear Waste Fund. In such a situation, the relevant language of the NWPA requires (or, at the least, permits) the amount of the waste fee to remain at the amount set by the NWPA itself. In particular, because the Secretary cannot make an affirmative "determin[ation]" that "insufficient or excess revenues are being collected," the Secretary cannot propose a change to the fee. Such an approach is consistent with DOE's past annual reviews, which have stated that DOE's policy is to propose a change to the fee only "when there is a compelling case for the change."[34]

Additionally, to the extent that there is information bearing on the total cost of alternative means of disposing of the materials at issue, that information supports retaining the fee at its current level. Over more than two decades, both before and after Yucca Mountain was designated as the site for which an application should be filed, the Secretary's fee reviews have uniformly determined that the fee should remain at the present rate. Before Yucca Mountain was designated as the sole site for characterization by the 1987 amendments, the Secretary consistently decided against proposing a fee adjustment, in part because DOE's disposal program had not yet matured to the point where program costs could be defined with sufficient certainty to justify an adjustment. For example, according to the Secretarial memo accompanying the 1984 annual review, "[s]ince substantial uncertainty surrounds both program cost and revenue projections at this time, it is prudent to delay a decision to adjust the fee structure until the program is more clearly defined."[35] Similarly, in both the 1986 and 1987 annual reviews, DOE concluded that "[f]ee revisions may be recommended within a few years, when more accurate program cost estimates will be developed as the program matures from its present conceptual design phase to the engineering design phase."[36]

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[33] Blue Ribbon Commission on America's Nuclear Future, Draft Report to the Secretary of Energy at ii (July 29, 2011) ("BRC Draft Report"), *available at*: http://brc.gov/sites/default/files/documents/brc_draft_report_29jul2011_0.pdf.

[34] DOE, Nuclear Waste Fund Fee Adequacy: An Assessment, DOE/RW-0291P, at 5 (November 1990); *see also* DOE, Fiscal Year 2007 Civilian Radioactive Waste Management Fee Adequacy Assessment Report, DOE/RW 0593, at 12 (July 2008) ("It is understood that any adjustment to the fee would require compelling evidence that such an adjustment is necessary to ensure future full cost recovery."); DOE, Memorandum for the Secretary, "INFORMATION: The 2008 Determination of the Adequacy of the Nuclear Waste Fund Fee." EXEC-2009 012439, Attachment, at 10 (September 29, 2009) (same).

[35] DOE, Memorandum to the Secretary, "Submittal of Annual Fee Adequacy Evaluation Report for the Office of Civilian Radioactive Waste Management Program." HQZ.870307.8942, at 2 (July 16, 1984).

[36] DOE, Nuclear Waste Fund Fee Adequacy: An Assessment, DOE/RW-0020, at 1-2 (March 1986); DOE, Nuclear Waste Fund Fee Adequacy: An Assessment, HQS.880517.227, at 2 (June 1987).

Even more to the point, as recently as 2009, the analysis done by DOE determined that the fee amount was appropriate to meet the anticipated costs of the proposed Yucca Mountain repository. The 2009 analysis concluded that the fee was adequate based on the most recent life cycle cost estimate of the Yucca Mountain repository of $97 billion in constant 2007 dollars – nearly four times the current Waste Fund balance. One cannot determine with any confidence at this time precisely how much the yet-to-be-selected disposal alternative will cost, but the closest proxy – albeit an imperfect one – is the costs of the proposed Yucca facility. Thus, the fact that the Department in 2009 concluded that the fee should not be varied in order to meet the costs of the Yucca repository provides additional support for the conclusion that the fee should not be altered at this time (and, in particular, should not be lowered).[37]

At the same time, it is important to note that the Department is committed to continuing to review the fee annually. If the Department, informed by the recommendations of the BRC, moves toward a means of disposal that will require a different level of fee than has been charged over the past several decades, and there is compelling evidence that the current revenues are inadequate or excessive, the Department will promptly propose an adjustment of the fee.

In sum, absent a basis for concluding that disposition will not require fees at the current level, the statute does not contemplate – and certainly does not mandate – that the Secretary raise, lower, or suspend the fee. Indeed, if the Secretary were to stop collecting the fee (i.e., by adjusting the fee to zero), that action would contravene the principle of generator responsibility embodied in Section 111(b)(4) and would be inequitable to future ratepayers. Such an adjustment would allow utilities that generate SNF during the time the fee is zero to avoid paying the costs of their SNF disposal, and would effectively shift those costs onto future ratepayers after a disposal solution is identified and the fee is adjusted back to a positive amount.[38] This type of cost-shifting was not what Congress intended when it set up the Nuclear Waste Fund.[39] It is clear from the plain language of the NWPA that Congress intended utilities to pay the full costs of disposing of the SNF they generate.[40]

CONCLUSION: The NWPA provides that the standard contract requires generators or owners of HLW or SNF to pay fees in return for DOE's obligation to accept HLW and SNF and be responsible for its final disposition. DOE has clearly stated that termination of the Yucca

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[37] Additionally, there is nothing in the BRC's draft report that suggests the yet-to-be-selected disposal alternative will cost any less than the costs of a repository at Yucca Mountain. The draft report recommends that the nation's nuclear waste management system should include at least one permanent deep geological facility. BRC Draft Report at xv. Therefore, to the extent the BRC's draft report has any impact on fee adequacy, it further supports the conclusion that the fee should not be altered at this time (and, in particular, should not be lowered).

[38] In such a scenario, attempting to collect the fee from the original generators of SNF would not be an option because neither the NWPA nor the standard contract permits retroactive adjustment of the fee. *See* 10 C.F.R. 961.11, Article VIII.A.4 ("Any adjustment to the ... fee ... shall be prospective.").

[39] *See, e.g. Consolidated Edison Co. of New York, Inc. v. U.S. Dept. of Energy*, 870 F.2d 694, 698 (D.C. Cir. 1989) (recognizing that Congress intended to avoid "unfairly burdening future ratepayers.").

[40] NWPA, sec. 111 ("Findings and Purposes ... (a) FINDINGS–THE Congress finds that ... (4) ... the costs of [HLW and SNF] disposal should be the responsibility of the generators and owners of such waste and spent fuel ... (b) PURPOSES–The purposes of this subtitle are ... (4) to establish a Nuclear Waste Fund ... that will ensure that the costs of carrying out activities relating to the disposal of such waste and spent fuel will be borne by the persons responsible for generating such waste and spent fuel.").

Mountain project will not affect its commitment to fulfill its obligations under the NWPA and the standard contracts. DOE must continue to collect the fees to have sufficient revenues to carry out its obligations to accept and dispose of HLW and SNF. Presently, there is no reasonable basis, and certainly no compelling evidence, that justifies any proposed adjustment of the fee, either upwards or downwards, to achieve full cost recovery. Moreover, the best available proxy (though imperfect) indicates that the fee should be retained at the current level. Additionally, adjustment of the fee to zero would be inequitable to past and future ratepayers who pay utility bills for electricity that reflect payment of the fees. In such circumstances, the NWPA requires the fee to remain at its current amount of 1 mill per kilowatt-hour as established in the NWPA.