



Department of Energy

Washington, DC 20585

March 27, 2014

The Honorable John Shimkus
Chairman
Subcommittee on Environment and the Economy
Committee on Energy and Commerce
U. S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

On July 31, 2013, Secretary Ernest Moniz testified regarding "Oversight of DOE's Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste."

Enclosed are the answers to 25 questions that were submitted by Representatives Bilirakis, Dingell, and you to complete the hearing record.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Lillian Owen, at (202) 586-2031.

Sincerely,

A handwritten signature in blue ink, appearing to read "Christopher E. Davis".

Christopher E. Davis
Principal Deputy Assistant Secretary
for Congressional Affairs
Congressional and Intergovernmental Affairs

Enclosures

cc: The Honorable Paul Tonko, Ranking Member



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The Honorable John Shimkus

- Q1. In your response to my June 28th letter, you attached a table that listed the laws under which you believe each used fuel activity is justified. Some were listed as authorized under the NWPA and others under the Atomic Energy Act of 1954 (AEA). It is clear that, in the NWPA amendments enacted in 1987, Congress directed DOE not to conduct further repository research on sites other than Yucca Mountain.

In its decision on *United States v. Estate of Romani*, the U.S. Supreme Court stated:

“...a specific policy embodied in a later statute should control our construction of the [earlier] statute, even though it ha[s] not been expressly amended.”

- a. Please explain why DOE believes it has the authority to follow some sections of the NWPA and ignore others.

A1a. DOE does not believe that it has the authority to follow some sections of the NWPA and ignore others. None of the activities listed in the response to your June 28th letter (the “July 22nd Response”) involve site-specific research on potential repository sites and, therefore, none are prohibited by section 160(a) of the NWPA.

- b. Please explain how DOE’s reliance on the AEA is consistent with the Supreme Court’s decision in *United States v. Estate of Romani*.

A1b: The NWPA does not repeal DOE’s authority under the AEA to conduct research and development related to the disposal of used fuel and high-level radioactive waste. Rather, the NWPA creates a framework that limits the extent to and manner in which DOE can exercise this authority in certain situations. For example, section 160(a) prohibits DOE from conducting site-specific activities, including research and development, at a repository site other than Yucca Mountain. But there is no provision in the NWPA that prohibits DOE from conducting generic activities, including research and development that would

relate to different media rather than specific sites. Therefore, reliance on the AEA as a source of authority is not inconsistent with the Supreme Court decision in Romani or contrary to the framework established by the NWP.

Q2. In your response to my June 28, 2013 letter you provided a table citing the Nuclear Waste Policy Act (NWPA) as providing the authority for DOE's interim storage activities. However, DOE's 2008 "Report to Congress on the Demonstration of the Interim Storage of Spent Nuclear Fuel from Decommissioned Nuclear Power Reactor Sites" states that:

"...Section 141 of the NWPA... authorized the Department to site, construction, and operate a monitored retrievable storage (MRS) facility but restricted the ability of the Department to pursue this option by linking any activity under this section to milestones tied to progress in the development of the Yucca Mountain repository."

a. Given that DOE has shut down the Yucca Mountain program, please explain how you can justify DOE's interim storage activities as authorized under the NWPA.

A2a: The 2008 Report to Congress on the Demonstration of the Interim Storage of Spent Nuclear Fuel From Decommissioned Nuclear Power Reactor Sites ("2008 Report") correctly notes the linkages in the NWPA between an MRS and a repository at Yucca Mountain. The authority provided by section 142(b)¹ to site, construct, and operate an MRS is subject to the conditions in sections 143 through 149, which include milestones on the development of a repository. The activities identified in the July 22nd Response are preliminary activities that would be useful in considering sites for an MRS in the future. As such, these activities would occur prior to the activities related to an MRS that are linked to repository milestones. All of the activities identified in the July 22nd Response are consistent with the 2008 Report and the framework of the MRS provisions of the NWPA.

¹ The 2008 Report should have referenced section 142(b), not section 141 of the NWPA. Section 142(b) of the NWPA authorizes DOE to site, construct, and operate an MRS facility subject to the restrictions set forth in sections 143-149.

b. Please explain the rationale for revising DOE's interpretation of this authority under the NWPA.

A2b. As explained in A2a above, the activities DOE is currently undertaking are consistent with the interpretation it provided in the 2008 Report. Nothing in the 2008 Report related to DOE's ability to undertake preliminary activities that were not constrained by the repository milestones set forth in the NWPA.

c. Please list the sizes of the facilities DOE is currently evaluating for both the pilot plant and the "larger" facility.

A2c. DOE is considering a capacity of 10,000 metric tons of heavy metal (MTHM) for a pilot facility based on the current and projected number of shutdown reactors between now and 2021. It is anticipated that there will be as much as 7,000 MTHM stored at shutdown reactors by 2021.

The Administration's *Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste* (Administration's *Strategy*) also proposes a larger interim storage facility to be available by 2025.

d. Please list the limits on the size of an MRS as stated in the NWPA.

A2d. A Monitored Retrievable Storage facility is limited to 10,000 metric tons of heavy metal (MTHM) until the beginning of operations of the geologic repository, and is limited to 15,000 MTHM thereafter.

Q3. Does DOE need to expend any money to support the NRC's issuance of the complete Safety Evaluation Report?

A3. DOE will evaluate and respond to any requests by the Nuclear Regulatory Commission as the NRC works to complete the Safety Evaluation Report.

- Q4. On June 22, 2012, DOE told the Court in *In re Aiken County* that it has approximately \$17 million in unobligated nuclear waste disposal carryover funds, as well as approximately \$8 million in obligated carryover funds, that it could use for the Yucca Mountain licensing proceeding, if the proceeding were ordered resumed. Is that money still available? If not, please detail the purposes for which it was expended.
- A4. The remaining resources available to the Department from Fiscal Year 2010 appropriations as of July 30, 2013 are listed in the table below:

Prior Year Funds

	Unobligated	Obligated Uncosted	Total
Defense Nuclear Waste Disposal	\$ 8,590,655	\$ 14,229,473	\$ 22,820,128
Nuclear Waste Disposal	\$ 7,149,301	\$ 15,547,411	\$ 22,696,712
Total, Prior Year	\$ 15,739,956	\$ 29,776,884	\$ 45,516,840

The differences in available funding since June 2012 are due to ongoing expenses include pension payments for retired workers, records retention and maintenance, property security and oversight, and remaining relocation expenses for reassigned workers.

- Q5. In a previous hearing before this Committee, I asked if you were aware of any scientific or technical issues that would prevent Yucca Mountain from being a safe repository. You responded by saying, "This is an NRC decision ultimately to be taken." Do you believe the people of the United States deserve to know what the NRC concluded in its Safety Evaluation Report? If not, please explain how your response conforms to President Obama's memorandums on *Transparency and Open Government*, and *Scientific Integrity*.
- A5. As previously stated during the hearing, this is an issue for the Nuclear Regulatory Commission to decide.
- Q6. Is there any currently applicable appropriations legislation that specifically prohibits DOE from using general funds for purposes of supporting the license review or proceeding?

- A6. DOE is unaware of any currently applicable appropriations legislation that expressly prohibits DOE from using general funds for purposes of supporting the license review or proceeding. However, Congress' decision to appropriate no monies from the Nuclear Waste Fund for Yucca Mountain licensing activities is a specific denial of funding – an appropriation of zero for such activities. In light of Congress' history of funding the Yucca Mountain license proceeding through specific appropriations from the Nuclear Waste Fund, it is evident that zeroing out appropriations to DOE from the Fund in FY 2011, FY 2012, and FY 2013 was no oversight.
- Q7. You indicated in the hearing that DOE staff has met with entities who might be interested in hosting facilities. Please explain the authority under which DOE has engaged in these consent-based activities. Please provide a list of all states, counties, local governments, economic development agencies, or any other organizations that DOE staff has met with to discuss their interest in hosting used fuel facilities.
- A7. Various parties have approached the Department to express their views regarding nuclear waste activities and policies. Some of these parties have expressed a potential interest in hosting a nuclear facility in the future as part of a consent-based siting process. As part of conducting the business of the Federal government, the Department conducts meetings with interested parties, including state and local government representatives, private sector companies, and non-profit entities. The Department has not directly solicited input on this matter, but welcomes the expressions of interest and viewpoints as it considers how to proceed in implementing the Administration's *Strategy*.

Furthermore, as discussed above, the NWPA does not prohibit preliminary activities related to the siting of an MRS such as discussions with representatives of sites that might have an interest in hosting such a facility. The authorities for specific preliminary

activities were identified in the Enclosure to the July 22nd Response under the “Legal Authority” column.

- Q8. DOE has refused to meet with representatives from Nye County, Nevada, in spite of their formal statement notifying DOE of their consent to host a repository. Please explain how DOE’s authority to meet with the entities listed in response to the previous question would not also empower DOE to meet with Nye County representatives.
- A8. Department staff have spoken with representatives from Nye County on numerous occasions at conferences and stakeholder meetings regarding their interest in hosting a repository or interim storage facility and how they might participate in whatever process eventually emerges to site those facilities. As noted in the answer to Question 7, the Department conducts meetings with interested parties, including state and local government representatives, private sector companies, and non-profit entities as part of its normal course of business. If there is a request from representatives from Nye County, Nevada, to meet, we will certainly honor that request.
- Q9. The NWPA authorized the Office of Nuclear Waste Negotiator to pursue consent-based siting. Please describe how your vision of consent-based siting differs from DOE’s practical experience and why it would be more likely to yield a positive result, i.e. a repository site.
- A9. While established in the Nuclear Waste Policy Amendments Act of 1987, the first head of the Office of the Nuclear Waste Negotiator was not confirmed by the Senate until 1990. The Nuclear Waste Policy Act included a sunset date for the Office of Nuclear Waste Negotiator, so authorization and funding for the office expired in late 1994. The short history of this office did not engender confidence on the part of either the nuclear industry or participants in the siting process in the early 1990s.

Any workable solution for meeting our obligation to dispose of used fuel and high-level radioactive waste will need to be both technically sound and have the support of the affected state and communities. Our experience has shown that a site cannot be imposed without public acceptance, as was unsuccessfully attempted with Yucca Mountain. That is why the Blue Ribbon Commission (BRC) report and the Administration's *Strategy* focus on a consent-based siting process.

Q10. Please describe in detail the results of the consent-based siting process in Great Britain. Please also describe in detail your basis for concluding that a consent-based process would yield a positive result in the U.S.

A10. Staff from the United Kingdom's Nuclear Decommissioning Authority would be the best sources of detailed information on their siting process. However, it is understood that the UK has yet to find a volunteer community for a geologic disposal facility.

Whatever circumstances may be in the UK, other countries have successfully selected sites for nuclear waste facilities, notably Sweden and Finland. Further, Canada and France both have programs underway to engage multiple levels of governments on siting that appear very encouraging.

With regard to the United States, a top-down approach to executing a national nuclear waste management program has not been successful to date. Any workable solution for meeting our obligation to dispose of used fuel and high-level radioactive waste will need to be both technically sound and have the support of the affected state and communities. Our experience has shown that a site cannot be imposed without public acceptance. That

is why the BRC report and the Administration's *Strategy* focus on a consent-based siting process.

Q11. The Waste Isolation Pilot Project in New Mexico is often cited as a successful example of consent-based siting. Please provide a comprehensive list of all administrative actions, citizen suits, injunction requests or other legal challenges to the development or opening of the facility including those initiated by the State of New Mexico, environmental stakeholders, or other plaintiffs or petitioners. The list should a description of the action, the date the action was commenced, the date it was resolved or concluded, and the outcome.

A11. The Waste Isolation Pilot Plant (WIPP) represents the United States' only mined geologic repository for the permanent disposal of defense-generated transuranic waste. Below is a list of administrative actions, citizen suits, injunction requests, and other legal challenges that involved WIPP prior to its operation.

Summary of Administrative and Legal Actions Involving WIPP Prior to Operation

DATE	TYPE OF ACTION	INITIATED BY	DISCUSSION
1974	Administrative	Atomic Energy Commission	A location 30 miles east of Carlsbad is chosen.
1975	Administrative	Governor of New Mexico	New Mexico Governor Apodaca establishes a Governor's Advisory Committee on WIPP.
1976	Administrative	Energy Research and Development Administration	Energy Research and Development Administration (ERDA) files an application with the U.S. Interior Department's Bureau of Land Management (BLM) for the withdrawal of 17,200 acres of land in Eddy County for the WIPP Project. [Federal Register, Vol. 41, No. 243, p. 54994, December 16, 1976]
1978	Administrative	Department of Energy	On October 13, the U.S. Department of Energy (DOE) files an application with the BLM to continue the segregation of 17,200 acres of land in Eddy County, New Mexico, for the WIPP Project. [Federal Register, Vol. 43, No. 221, p. 53063, November 15, 1978]
1978	Administrative	Department of Energy	The Department of Energy funds the formation of the Environmental Evaluation Group (EEG) is established to provide a full-time, independent technical assessment of the WIPP Project. [Cooperative Agreement No. DE-AC04-79AL10752]
1979	Legislative	New Mexico Legislature	The New Mexico State Legislature establishes the interim legislative Radioactive and Hazardous Materials

DATE	TYPE OF ACTION	INITIATED BY	DISCUSSION
			Committee and the Radioactive Waste Consultation Task Force. [Laws of 1979, Chapter 380; Section 74-4A-2 New Mexico Statutes Annotated 1978]
1979	Regulatory	Department of Energy	The DOE issues its Draft Environmental Impact Statement (DEIS) on WIPP
1979	Legislative	New Mexico Legislature	The U.S. Congress approves the Department of Energy National Security and Military Applications of Nuclear Energy Authorization Act of 1980 (Public Law 96-164). Section 213(a) of the Act authorizes WIPP and mandates a written consultation and cooperation agreement with the State of New Mexico by September 30, 1980.
1980	Administrative	Department of Energy and State of New Mexico	Negotiations on a consultation and cooperation agreement are conducted.
1980	Regulatory	Department of Energy	The DOE issues its Final Environmental Impact Statement (FEIS) on WIPP. [U.S. Department of Energy, Final Environmental Impact Statement, Waste Isolation Pilot Plant, DOE/EIS-0026, October 1980]
1980	Administrative	Department of Energy	The DOE files an application with the BLM for the withdrawal of 8,960 acres of federal land for the purpose of conducting a Site and Preliminary Design Validation (SPDV) program at the WIPP. [Federal Register, Vol. 45, No. 196, p. 75768, November 17, 1980]
1981	Regulatory	Department of Energy	The DOE issues its Record of Decision to proceed with WIPP construction. [Federal Register, Vol. 46, No. 18, p. 9162, January 28, 1981]
1981	Legal	State of New Mexico	New Mexico Attorney General Bingaman files suit in U.S. District Court (Albuquerque) against the DOE and the Interior Department, alleging violations of federal and State law in connection with the continuing development of WIPP. [Civil Action No. 81-0363 JB]
1981	Legal	U. S. District Court	U.S. District Judge Juan G. Burciaga issues a federal court Order, which provides New Mexico a meaningful role in the decision-making process for the WIPP Project. The Order stays all proceedings in the State lawsuit in accordance with a Stipulated Agreement which requires the DOE perform additional geotechnical studies at the WIPP site and then provide the results to the State for review. It also requires DOE and the State to reach a negotiated settlement on certain State "off-site concerns" (e.g., emergency response, highway upgrading, transportation monitoring, and accident liability).
1981	Administrative	Department of Energy and State of New Mexico	The Consultation and Cooperation Agreement is signed by Governor Bruce King and DOE Secretary James Edwards.
1982	Administrative	Department of	The BLM issues Public Land Order 6232, withdrawing

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		Interior	8,960 acres of federal land (and 1,280 acres of State trust land, if acquired by the federal government) for the purpose of conducting the SPDV program at WIPP. [Federal Register, Vol. 47, No. 61, p. 13340, March 30, 1982]
1982	Administrative	Department of Energy and State of New Mexico	The DOE and New Mexico enter into the Supplemental Stipulated Agreement Resolving Certain State Off-site Concerns over WIPP.
1983	Administrative	Department of Energy	The DOE files an application with the BLM for the withdrawal of 8,960 of federal land (and 1,280 acres of State land, if acquired by the federal government) for the purpose of constructing WIPP. [Federal Register, Vol. 48, No. 19, p. 3878, January 27, 1983]
1983	Administrative	Department of Interior	The BLM issues Public Land Order 6403, withdrawing 8,960 acres of federal land (and 1,280 acres of State trust land, if acquired by the federal government) for the construction of full facilities at the WIPP site. [Federal Register, Vol. 48, No. 130, p. 31038, July 6, 1983]
1983	Administrative	Department of Energy	The DOE announces its decision to proceed with full facility construction of the WIPP. [Federal Register, Vol. 48, No. 128, p. 30427, July 1, 1983]
1984	Administrative	Department of Energy and State of New Mexico	New Mexico and the DOE execute the "First Modification to the 1981 Consultation and Cooperation Agreement."
1984	Regulatory	Environmental Protection Agency	In September, the U.S. Environmental Protection Agency (EPA) promulgates its "Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes." [Federal Register, Vol. 50, No. 182, p. 38066, September 19, 1985]
1986	Regulatory	Environmental Protection Agency	In July, the EPA clarifies that the hazardous constituents of radioactive mixed wastes are subject to regulation under Subtitle C of the Resource Conservation and Recovery Act of 1976 (RCRA). [Federal Register, Vol. 51, No. 128, p. 24504, July 3, 1986]
1987	Administrative	Department of Energy	In early May, the DOE confirms and further clarifies EPA's July 3, 1986, interpretive notice, stating "...all DOE radioactive waste which is hazardous under RCRA will be subject to regulation under both RCRA and the AEA (Atomic Energy Act of 1954)." [Federal Register, Vol. 52, No. 84, p. 15937, May 1, 1987]
1987	Legal	U. S. Court of Appeals	The U.S. Court of Appeals for the First District (Boston) vacates and remands to the EPA for reconsideration Subpart B of its "Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level, and Transuranic Radioactive Waste," 40 CFR Part 191.

DATE	TYPE OF ACTION	INITIATED BY	DISCUSSION
1987	Administrative	Department of Energy and State of New Mexico	New Mexico and the DOE execute the "Second Modification to the Consultation and Cooperation Agreement."
1987	Administrative	Department of Energy and State of New Mexico	A separate agreement, which amends the 1982 Supplemental Stipulated Agreement and relates to funding for WIPP by-passes and relief routes in New Mexico, is also executed by New Mexico and the DOE.
1988	Administrative	Department of Interior	The BLM issues to the State of New Mexico a land exchange conveyance document. The document conveys to New Mexico 2,519.43 acres of federal land in Eddy County (both surface and mineral estate) in exchange for 1,280 acres of State trust lands (both surface and mineral estate) located within the WIPP withdrawal area. [Federal Register, Vol. 53, No. 115, p. 22391, June 15, 1988]
1988	Administrative	Department of Energy and State of New Mexico	The DOE and New Mexico execute a Cooperative Agreement, No. DE-FC04-88AL53813, entitled "WIPP Enhancement of the State of New Mexico's Emergency Response Capability."
1988	Legislative	Congress	The National Defense Authorization Act for Fiscal Year 1989 (Public Law 100-456) was signed into law. Section 1433 of the Act assigns the Environmental Evaluation Group (EEG) to the New Mexico Institute of Mining and Technology and provides for continued funding from DOE through Cooperative Agreement No. DE-AC04-89AL58309.
1989	Administrative	Department of Energy	The DOE files an application with BLM for the withdrawal of 10,240 acres of federal land. The application is noticed in the Federal Register of April 19, 1989.
1989	Regulatory	Department of Energy	The DOE submits to the U.S. Environmental Protection Agency (EPA) a "No-Migration Variance Petition."
1989	Regulatory	Department of Energy	The DOE issues its Draft Supplement Environmental Impact Statement (DSEIS) on WIPP. [Federal Register, Vol. 54, No. 76, p. 16350, April 21, 1989]
1989	Regulatory	Nuclear Regulatory Commission	On August 29, the U.S. Nuclear Regulatory Commission (NRC) issues a "Certificate of Compliance" for the TRUPACT-II.
1990	Regulatory	Department of Energy	In late January, the DOE issues its Final Supplement Environmental Impact Statement (FSEIS) on WIPP. [U.S. Department of Energy, Final Supplement Environmental Impact Statement, Waste Isolation Pilot Plant, DOE/EIS-0026-FS, January 1990]
1990	Regulatory	Department of Energy	The DOE announces Secretary Watkins' approval of a "Record of Decision" (ROD) on the WIPP Final Supplement Environmental Impact Statement. [Federal Register, Vol. 55, No. 121, p. 25689, June 22, 1990]
1990	Regulatory	Environmental Protection	The New Mexico Environment Department (NMED) is authorized by EPA to regulate radioactive mixed wastes in

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		Agency	New Mexico in accordance with its approved program. [Federal Register, Vol. 55, No. 133, p. 28397, July 11, 1990]
1990	Regulatory	Environmental Protection Agency	The EPA issues a conditional no-migration determination for the WIPP facility. [Federal Register, p. 47700, November 14, 1990]
1991	Administrative	Department of Interior	The U.S. Interior Department issues Public Land Order No. 6826, which modifies an earlier WIPP administrative land withdrawal order (Public Land Order No. 6403) [Federal Register, Vol. 56, No. 18, p. 3038, January 28, 1991; and Vol. 56, No. 29, p. 5731, February 12, 1991]
1991	Administrative	New Mexico Highway Commission	The N.M. State Highway Commission designates new WIPP routes in New Mexico after a comprehensive comparative analysis of alternative routes and a series of public hearings.
1991	Administrative	Department of Energy	Secretary Watkins notifies U.S. Interior Secretary Manuel Lujan, Jr., that WIPP is ready to begin the Test Phase. Similarly, the State of New Mexico is notified that the first shipment of waste may reach the WIPP site by October 10. [Federal Register, Vol. 56, No. 196, p. 50923, October 9, 1991]
1991	Legal	New Mexico Attorney General	New Mexico Attorney General Tom Udall files a lawsuit in U.S. District Court for the District of Columbia against DOE and the U.S. Department of the Interior to stop the threatened shipment of wastes to WIPP under the administrative withdrawal. [Civil Action No. 91-2527]
1991	Legal	Environmental Groups	Four environmental groups file a lawsuit in U.S. District Court for the District of Columbia. [Civil Action No. 91-2929]
1991	Injunction	U.S. District Court	U.S. District Court Judge John Garrett Penn issues an Order, along with a corresponding explanatory memorandum, granting the State's motion for a preliminary injunction. [Civil Action 91-2527]
1992	Injunction	U.S. District Court	Judge Penn issues an Order that imposes a permanent injunction prohibiting the transport or disposal of any transuranic (TRU) waste at WIPP; it also grants two separate motions for summary judgment in the consolidated WIPP lawsuits.
1992	Legal	State of New Mexico	In the first of the consolidated suits, State of New Mexico v. Watkins (Civil Action No. 91-2527), Judge Penn granted the plaintiff-intervener's motion for summary judgment.
1992	Legal	Environmental Defense Fund	In Environmental Defense Fund v. Watkins (Civil Action No. 91-2929) Judge Penn granted EDF's motion for summary judgment
1992	Legal	Department of Energy	The DOE appeals Judge Penn's ruling of January 31, 1992.

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1992	Legal	Appeals Court	The U.S. Court of Appeals for the D.C. Circuit reversed the earlier ruling that WIPP was not eligible for interim status under RCRA and upheld the District Court's decision that Interior Secretary Lujan exceeded his authority under Federal Land Policy Management Act in approving WIPP Public Land Order 6826, issued January 22, 1991. [Civil Action Nos. 91-5387 and 92-5044]
1992	Legal	New Mexico Supreme Court	The New Mexico Supreme Court determined that the diminution in value of the remainder of landowners' property due to public fear from the use of part of it to construct bypass for transportation of nuclear waste, whether the fear was well-founded or not, was compensable in condemnation proceeding. [Santa Fe v. Komis, No. 20325, SUPREME COURT OF NEW MEXICO, 114 N.M. 659; 845 P.2d 753; 1992 N.M. LEXIS 246; 31 N.M. St. B. Bull. 945, August 26, 1992, Decided, August 26, 1992, Filed, As Corrected.]
1992	Legislative	U. S. Congress	The WIPP Land Withdrawal Act (Public Law 102-579) was signed into law.
1993	Regulatory	Environmental Protection Agency	The EPA issues a Final Rule that amends its regulations codified at 40 CFR Part 191. [Federal Register, Vol. 58, No. 242, p. 66398, December 20, 1993]
1995	Regulatory	Department of Energy	The DOE submits the Resource Conservation and Recovery Act (RCRA) Part B permit application [DOE/WIPP 91-005, Rev. 6] to the New Mexico Environment Department (NMED).
1996	Regulatory	Environmental Protection Agency	The EPA issues a Final Rule establishing criteria for use in certifying whether WIPP complies with the applicable disposal standards set forth in 40 CFR Part 191. [Federal Register, Vol. 61, No. 28, p. 5224, February 9, 1996]
1996	Legal	New Mexico Attorney General, Environmental Groups	The New Mexico Attorney General files a petition in the U.S. Court of Appeals for the D.C. Circuit for review of EPA's final WIPP Compliance Criteria, 40 CFR Part 194. [Civil Action No. 96-1107] This petition is ultimately consolidated with two other similar petitions filed by: two environmental groups and two individuals [Civil Action No. 96-1108]; and the Texas Attorney General [Civil Action No. 96-1109].
1996	Regulatory	Department of Energy	The DOE submits a final No-Migration Variance Petition to the EPA.
1996	Legislative	U. S. Congress	The National Defense Authorization Act for Fiscal Year 1997 (Public Law 104-201) was signed into law and amended the 1992 WIPP Land Withdrawal Act.
1997	Legal	U.S. Court of Appeals	The U.S. Court of Appeals for the D.C. Circuit denies petitions for review filed by the New Mexico Attorney General and others of EPA's final WIPP Compliance Criteria.

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1997	Regulatory	Department of Energy	The DOE issues its WIPP Disposal Phase Final Supplemental Environmental Impact Statement (DOE/EIS-0026-FS2, September 1997).
1998	Regulatory	Department of Energy	The DOE issues a "Record of Decision" (ROD) to dispose of TRU waste at WIPP. [Federal Register, Vol. 63, No. 15, p. 3624, January 23, 1998]
1998	Regulatory	Environmental Protection Agency	The EPA announces it is certifying that WIPP will comply with the applicable disposal regulations set forth at Subparts B and C of 40 CFR Part 191. [Federal Register, Vol. 63, No. 95, p. 27354, May 18, 1998] Immediately following the EPA announcement, DOE Secretary Federico Pena notifies Congress that WIPP is ready to begin disposal operations. Also on this same date, DOE petitions the U.S. District Court for the District of Columbia to lift its 1992 permanent injunction barring the transport or introduction of any TRU waste at WIPP. Subsequently, oral arguments in the case are scheduled for March 12, 1999.
1998	Administrative	Department of Energy	The DOE Secretary Federico Pena notifies Congress that WIPP is ready to begin disposal operations. Also on this same date, DOE petitions the U.S. District Court for the District of Columbia to lift its 1992 permanent injunction barring the transport or introduction of any TRU waste at WIPP. Subsequently, oral arguments in the case are scheduled for March 12, 1999.
1998	Legal	Department of Energy	The DOE petitions the U.S. District Court for the District of Columbia to lift its 1992 permanent injunction barring the transport or introduction of any TRU waste at WIPP.
1998	Legal	New Mexico Attorney General, Environmental Groups	On July 17, 1998, the New Mexico Attorney General and three environmental groups filed petitions against EPA and Administrator Browner in the U.S. Court of Appeals for the D.C. Circuit, alleging violations of notice and comment rulemaking and substantive technical errors in EPA's certification of WIPP. [Civil Action Nos. 98-1322, -1323, -1324]. Subsequently, on May 5, 1999, the Court granted New Mexico's motion for voluntary dismissal and cancelled oral arguments scheduled for the next day. The Court issued an order on June 28, 1999, denying the remaining petitioners' challenges.
1999	Legal	District Court	Judge Penn denies request for injunction and confirms WIPP Interim Status under RCRA.
1999	Operational	Department of Energy	First shipment arrives from Los Alamos National Laboratory
1999	Regulatory	New Mexico Environment Department	New Mexico issues Hazardous Waste Facility Permit
2000	Operational	Department of Energy	First mixed waste shipment arrives from Rocky flats

Q12. Is DOE using taxpayer money to fund public opinion polling in any of these potential host states or communities? Are public preference studies different from public opinion polling? If so, please explain.

A12. DOE appropriated funds are used to understand technical issues related to public preference studies, which, as explained below, are different from public opinion polling.

The difference between public opinion polling and public preference studies is that the latter seeks to measure more than opinions. Public preference studies seek to understand what people know about the nuclear fuel cycle, what they are concerned about and why they have the preferences they do about nuclear facility siting.

Q13. How long will it take DOE to establish “generic” safety standards for a repository other than Yucca Mountain?

A13. Under the Nuclear Waste Policy Act, the Department of Energy is not responsible for establishing either generic or specific safety standards for repositories. Rather NRC is responsible for establishing safety standards for repositories and the Environmental Protection Agency (EPA) is responsible for establishing radiation protection standards for the general public that are implemented by the Nuclear Regulatory Commission. The President’s Fiscal Year 2014 Budget requests funds for EPA to begin the process of updating the existing regulations.

Q14. Please explain whether you believe that the science done by our national labs in support of the Yucca Mountain license application is sound. Is it possible that a viable safety case for the Yucca Mountain repository was made in the DOE license application? If not, please explain.

A14. In moving to withdraw its Yucca Mountain license application, the Department has not disavowed the technical content set forth in the application. To the contrary, the

Department believes that the license application was complete and accurate in all material respects. Rather, as the Department has made clear, after many years of experience and significant expenditure of funds, Yucca Mountain has not proved a workable option. The Department believes that we can and must do better, and believes that the appropriate basis upon which to do so is a consent-based siting process, as described in the *Administration Strategy*.

Q15. How long would it take to transfer 70,000 metric tons of spent nuclear fuel from a “larger” interim storage facility to a repository?

A15. The time it would take to transfer 70,000 metric tons of used nuclear fuel from an interim storage facility to a geologic repository would depend on a number of factors, including the rate that the repository would accept the fuel. DOE has previously considered acceptance rates of 3,000 metric tons per year. Additional factors would include the mode of transportation and the proximity of the storage facility to the repository.

Q16. Please describe why you believe DOE has the authority to use Nuclear Waste Fund money to fund 180c transportation activities for destinations other than Yucca Mountain.

A16. Section 180(c) of the NWPA requires that the Secretary provide technical assistance and funds to States and Indian Tribes for training of public safety officials through whose jurisdictions the Secretary plans to transport spent nuclear fuel or high-level radioactive waste under subtitle A or subtitle C of the NWPA. The Department is not providing Nuclear Waste Fund money to States and Tribes for technical assistance or training of public safety officials under 180(c). DOE’s activities under 180(c) relate to developing the process and procedures by which technical assistance and funds would be provided to

States and Tribes under 180(c) when the Secretary develops plans for specific transportation activities under the NWPA.

Q17. Given that DOE has resumed the study of granite formations, have you formally considered certain factors as listed in Section 161(d) of the Nuclear Waste Policy Act? Please provide a list of the states where granite formations are located that might be favorable for repository development and whether each state is impacted by the disqualifying factors listed in Section 161(d).

A17. Although DOE is doing research and development on generic granitic bodies, those studies have not progressed to the point of including the factors listed in Section 161(d) of the Nuclear Waste Policy Act. Consideration of those factors would occur in the future as part of any site-specific studies of granite formations.

As recently as 2008, in "Report to the President and the Congress by the Secretary Of Energy on the Need for a Second Repository", granitic bodies believed to be adequate or that could be adequate for investigation for siting a second repository were identified in 25 states (Minnesota, Michigan, New Hampshire, Massachusetts, Pennsylvania, New Jersey, Maryland, North Carolina, Georgia, Wisconsin, Maine, Vermont, Connecticut, New York, Delaware, Virginia, South Carolina, Washington, Idaho, Arizona, Wyoming, Texas, Alabama, South Dakota, and Oklahoma).

Q18. Do you believe deep borehole disposal conforms to the NWPA's retrievability requirement? Please provide a list of states that have geologic formations that might be favorable for the development of boreholes.

A18. Retrievability is likely more complex from deep boreholes than from a mined repository. However, retrievability from deep boreholes is believed to be possible and worthy of further study. Using as a range of depth to crystalline basement of 0 to 2000 meters, every state is potentially suitable for borehole disposal. However, more research and

study is needed on technical considerations, impacts, economics, and other issues related to deep borehole disposal to better understand the viability of this potential option.

Q19. During the hearing you testified that the Administration strongly supports the BRC recommendations. Please explain why the Administration hasn't proposed legislation to implement the recommendations.

A19. The Administration looks forward to working with Congress to develop the legislation necessary to move the country forward on this issue. In its *Strategy*, the Administration has highlighted agreement with many of the principles of the BRC recommendations and has outlined actions that, with legislative authorization by Congress, can lead to a safe and responsible solution to managing the nation's nuclear waste. Action by Congress is necessary for success of the waste management mission.

Q20. Section 302(a)(5)(B) of the NWPA states: "in return for payment of fees established in this section, the Secretary, beginning not later than January 31, 1998, will dispose of the high-level radioactive waste or spent nuclear fuel..."

Section 302(a)(6) continues: "The Secretary shall establish in writing criteria setting forth the terms and conditions under which disposal services shall be made available."

During the hearing you stated that: "Again, the one mil per kilowatt hour is not buy a facility. It's to buy a service. The service as far as the utility is concerned is spent fuel removal."

- a. While a utility's primary concern may be spent fuel removal, please explain how your redefinition of the serve as spent fuel removal, rather than disposal:
 - i. Complies with the NWPA; and
 - ii. Meets your responsibility as Secretary to protect public health and safety by developing a repository for the permanent disposal of spent nuclear fuel and high-level waste.

A20a. The Secretary's responsibility to protect health and safety will be a central consideration as it moves forward with planning and implementing nuclear waste

disposal. The Secretary's statement at the July 31, 2013, hearing did not redefine or somehow limit the Department's responsibility under the NWPA to dispose of contract holders' spent nuclear fuel and high-level waste. In Indiana Michigan v. DOE, the D.C. Circuit explained that the Department is obligated to dispose of spent nuclear fuel, and that obligation is not tied to the commencement of repository operations. The Secretary remains committed to fulfilling that obligation, and his use of the term "remove" was intended to reaffirm this obligation.

Further, the Secretary recognizes that the NWPA obligates the Department to enter into Standard Contracts with all entities that "generate[] or hold[] title to high-level radioactive waste, or spent nuclear fuel, of domestic origin for the acceptance of title, subsequent transportation, and disposal of such waste or spent fuel" The Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Waste sets out the terms and conditions for which those disposal services will be made available to contract holders. For example, Article IV.B.1. of the Standard Contract provides that "DOE shall accept title to all SNF and/or HLW of domestic origin, generated by the civilian nuclear power reactor(s)[,] . . . provide subsequent transportation for such material to the DOE facility, and dispose of such material in accordance with the terms of this contract." Moreover, the Department remains committed to its obligation to accept, manage, and ultimately dispose of spent nuclear fuel and high-level radioactive waste.

- b. Given how this redefinition of the service as spent fuel removal de-emphasizes permanent disposal, please describe why such a redefinition will not further increase

communities concerns that any interim storage site will become a de facto permanent repository.

A20b. As explained above, the Secretary has not redefined the Department's obligation to dispose of high-level radioactive waste and spent nuclear fuel. Nor has this obligation been deemphasized. As outlined in the Administration's *Strategy*, siting and licensing a permanent geologic repository, using a consent-based siting approach, is a key component of the Department's strategic plan.

Pursuing permanent disposal will also ensure that any interim storage options do not become de facto permanent repositories. Interim storage will allow the Department to achieve important goals such as meeting its obligation to remove contract holders' high-level waste and spent nuclear fuel from shutdown reactors.

- c. Will the removal of spent nuclear fuel from an NRC-licensed site to a separate NRC-licensed site provide any increase in the safety or security of the stored spent fuel? If so, please explain.

A20c. Any NRC-licensed site will be safe and secure for storage of spent fuel.

However, there may be other reasons why moving spent fuel in storage at one or more NRC-licensed site(s) to another NRC-licensed site would be advantageous, including, for example, cost and land use considerations.

The Honorable Gus M. Bilirakis

Q1. Mr. Secretary in your testimony you mentioned the considerable cost of the federal government paying utilities for breaching its contract to dispose of used nuclear fuel. The failure of the federal government to fulfill its legal obligations has resulted in dozens of lawsuits and \$2 billion in payments to utilities so far, with the prospect of tens of billions of dollars of payments in the future. In addition, the Department of Justice has spent more than \$188 million through 2011 to litigate these cases. Considering how scarce taxpayer dollars are now, why doesn't the Department enter into fair and reasonable settlements with the utilities to minimize the ongoing costs of litigation?

A1. The Attorney General has the authority to resolve disputes in Federal Court. 28 U.S.C. sec. 516. Thus far the Department of Justice has obtained settlements covering approximately 70 percent of the nation's nuclear reactors. We respectfully suggest that any further inquiries regarding the litigation or its potential resolution should be directed to the Department of Justice.

The Honorable John D. Dingell

- Q1. In 2006, you wrote an article expressing support for Yucca Mountain but in 2011 wrote another article saying that there needs to be an alternative to Yucca Mountain. Do you now believe that Yucca Mountain is no longer an option as a permanent repository? Please provide additional information for the record regarding the viability of Yucca Mountain as a permanent repository.
- A1. This Administration has consistently said that Yucca Mountain is not a workable option. Any workable lasting solution for the final disposition of used fuel and nuclear waste must be based not only on sound science but also on achieving public support in the affected communities and states. When this Administration took office, the timeline for opening Yucca Mountain had already been pushed back by two decades, stalled by public protest and legal opposition. It was clear that the stalemate could continue indefinitely.
- Q2. Among the BRC's recommendations is a consent based approach where localities across the country could volunteer to be the site of a new repository. Under the best case scenario, where all units of government, from local to state to federal, agree and there is a site that meets the needs for a repository of this kind, approximately how long and how much do you believe it would cost to go through this process?
- A2. The Administration's *Strategy* is to have a repository sited through a consent based approach, designed, licensed, constructed and operational by 2048. The Department's 2013 fee adequacy assessment estimated that the cost of pre-selection site evaluation for a repository could be approximately \$3.2 billion and that site characterization and licensing could be approximately \$8.5 billion.
- Q3. The BRC report recommends "access to the funds nuclear utility ratepayers are providing for the purpose of nuclear waste management" and you propose non-legislative as well as legislative changes to achieve this goal. Can access to the funds be gained through non-legislative means?

A3. Reclassifying nuclear waste fees is not a simple technical correction, and achieving a sustainable funding scheme for the nation's nuclear waste management is best accomplished through legislation. Administrative reclassification is unworkable and would not provide the stable funding situation that all parties are seeking to address this problem.

Q4. In the 2011 article I referenced earlier, you noted that you are strong supporter of nuclear energy, developing new nuclear technologies, and investing in other energy technologies. Based on recent appropriations and the recently passed Energy and Water Appropriations from the House, do you believe your Department has the resources to invest in these technologies to prevent, as you put it, America being "less competitive in the global technology market?" Would you please provide information for the record on how you intend to keep our country competitive?

A4. Competing in the new energy economy will require us to harness the expertise of our scientists, engineers, and entrepreneurs. As the President said, the "the world is shifting to an innovation economy, and nobody does innovation better than America. In today's innovation economy, we need a world-class commitment to science and research." The President is committed to making investments in research and development (R&D) that will grow our economy and enable America to remain competitive. This focus on science and innovation will help create the industries and jobs of the future and address the challenges and opportunities of the 21st Century.

With regard to nuclear power, the President's FY 2014 budget request invests \$735 million in the nuclear energy program to help develop the next-generation of nuclear power technologies, including small modular reactors and improved light water reactor systems, and to continue R&D efforts in areas such as improved fuel forms.

The Administration recognizes the Government's role in fostering scientific and technological breakthroughs, and has committed significant resources to ensure America leads the world in the innovations of the future. This includes \$5.2 billion for the Office of Science to support basic research that could lead to new discoveries and help solve our energy challenges. These funds support progress in materials science, basic energy science, advanced computing and more. They also provide America's researchers and industries with state-of-the-art tools to ensure they stay at the cutting edge of science.

The FY 2014 budget request continues to support Energy Frontier Research Centers. The Energy Frontier Research Centers are working to solve specific scientific problems to help unleash new clean energy technology development. So far, the EFRCs have generated some 3,400 peer-reviewed papers, 60 invention disclosures, and 200 patents. In addition, the Centers report numerous instances of technology transfer. In their three-plus years of existence, the EFRCs have achieved scientific breakthroughs in multiple areas, from solar power and batteries to new catalysts for refining petroleum and powering fuel cells. In FY 2014, we are going to hold an open re-competition to select new EFRCs and consider renewal applications for existing EFRCs.

The FY 2014 budget request also supports the five existing Energy Innovation Hubs and proposes a new Hub in electricity systems. Through the Hubs, we are bringing together our nation's top scientists and engineers to achieve game-changing energy goals. The Hubs continue to make progress. For example, the Modeling and Simulation for Nuclear

Reactors Hub has released the first versions of software that, support simulating a virtual model of an operating physical reactor. The Fuels from Sunlight Hub has filed multiple invention disclosures and published scientific papers. And the Energy Efficient Buildings Hub is developing advanced building modeling tools and has built one of the country's first 3-D building design labs.

Additionally, the FY 2014 budget request includes \$379 million for the Advanced Research Projects Agency for Energy, known as ARPA-E, to support high-impact energy technology projects with the potential to transform the energy sector. ARPA-E has invested in roughly 285 high-risk, high-reward research projects that, if successful, could create the foundation for entirely new industries. Seventeen of these projects, which received an initial investment from ARPA-E of approximately \$70 million in total, have attracted over \$450 million in private sector follow-on funding. These companies and research teams have produced a battery that doubled the energy density of any previous design, successfully engineered microbes that use carbon dioxide and hydrogen to make fuel for cars, and developed a 1 megawatt silicon carbide transistor the size of a fingernail.

In FY14, ARPA-E will continue to work on a variety of transportation projects, including alternative and bio-derived fuels, batteries, components for transportation electrification, and advanced vehicle designs and materials. Additionally, ARPA-E will continue work on stationary power systems, including building efficiency, stationary energy storage systems, grid modernization, and stationary energy generation.

Taken together, our research initiatives will help power America's great innovation machine to accelerate energy breakthroughs and create jobs.