COMMITTEE ON
ENERGY & COMMERCE
CHAIRMAN FRANK PALLONE, JR.

MEMORANDUM

June 10, 2019

To: Subcommittee on Environment and Climate Change Members and Staff

Fr: Committee on Energy and Commerce Staff

Re: Legislative Hearing on "Cleaning Up Communities: Options for the Storage and Disposal of Spent Nuclear Fuel"

On **Thursday, June 13, 2019, at 10 am in room 2322 of the Rayburn House Office Building**, the Subcommittee on Environment and Climate Change will hold a legislative hearing entitled, "Cleaning Up Communities: Options for the Storage and Disposal of Spent Nuclear Fuel." The hearing will examine various pieces of legislation focused on addressing the disposition of spent nuclear fuel in the United States.

I. BACKGROUND

Nuclear power reactors in the United States generate an average of 2,200 metric tons of spent nuclear fuel (SNF) every year.[1] According to the Department of Energy (DOE), the United States currently has nearly 70,000 metric tons of SNF,[2] and that figure is expected to double by 2048.[3] Approximately one quarter of nuclear waste storage sites no longer have operating reactors and, accordingly, no longer produce power and revenue.[4]

Most of the current SNF inventory is stored onsite where it was generated.[5] SNF is generally stored in wet pools for five years then transferred to dry casks after it has cooled to a point within the heat limits of the casks.[6] In recent years, however, many sites have exhausted their capacity for storage in wet pools, requiring more fuel to be transferred to dry casks. The

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[1] Congressional Research Service, *Civilian Nuclear Waste Disposal* (Sept. 6, 2018) (RL33461).

[2] U.S. Energy Information Administration, Spent Nuclear Fuel (www.eia.gov/nuclear/spent_fuel/) (Dec. 7, 2015).

[3] Congressional Research Service, *Nuclear Waste Storage Sites in the United States* (May 3, 2019) (IF11201).

[4] *Id*.

[5] Government Accountability Office, *Outreach Needed to Help Gain Public Acceptance for Federal Activities that Address Liability* (Oct. 2014) (GAO-15-141).

[6] *Id*.

Nuclear Regulatory Commission (NRC) regulates the safety of SNF stored in dry storage onsite at nuclear power reactors.[7]

A. The Nuclear Waste Policy Act

In 1982, Congress passed the Nuclear Waste Policy Act (NWPA) directing DOE to remove SNF from commercial nuclear power plants, in exchange for a fee (deposited in an account called the Nuclear Waste Fund) and transport it to a permanent geologic repository beginning no later than January 31, 1998.[8] The law also established an objective, scientifically-based process for selecting two repository sites.

In the years that followed passage of the NWPA, DOE's efforts to identify potential sites met strong local opposition. Congress amended the NWPA in 1987 and designated Yucca Mountain, Nevada as the sole site to be considered for a permanent geologic repository.[9] A variety of factors – including funding shortfalls and local opposition – have prevented DOE from completing a nuclear waste repository at Yucca Mountain.

The NWPA established a process for providing a number of benefits to states and tribes that might host a nuclear waste storage facility or, in the case of Nevada, a repository. For example, section 116 of the NWPA requires DOE to provide grants to the State of Nevada and affected units of local government to fund impact studies, monitoring, and other activities relating to the Yucca Mountain site. That section also requires DOE to provide payments in lieu of the taxes that would otherwise be collected for development and activities at the site. Sections 170-175 of the NWPA provide further benefits, including in section 171, a schedule of specific monetary amounts to be paid annually to those states and tribes that host a storage facility or repository.

B. Recommendations of the Blue Ribbon Commission

In 2010, President Barack Obama established the Blue Ribbon Commission on America's Nuclear Future (BRC) to conduct a comprehensive review of policies for managing the back end of the nuclear fuel cycle, including all alternatives for the storage, processing, and disposal of civilian and defense SNF and high-level waste. In January 2013, DOE released a document titled *Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste*, which included a response to the BRC's recommendations and a framework for meeting the government's obligation to dispose of nuclear waste.[10] DOE agreed with the BRC that a consent-based siting process would be critical to the successful implementation of the

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[7] *Id*.

[8] 42 U.S.C. § 10101, *et seq*.

[9] Public Law 100-203 (1987).

[10] U.S. Department of Energy, *Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste* (Jan. 2013) (www.energy.gov/sites/prod/files/Strategy%20for%20the%20Management%20and%20Disposal%20of%20Used%20Nuclear%20Fuel%20and%20High%20Level%20Radioactive%20Waste.pdf).

agency's waste management strategy. On January 12, 2017, DOE released a document outlining a draft consent-based siting process for disposal and storage of nuclear waste.[11]

C. Nuclear Regulatory Commission Review

On January 29, 2015, NRC issued the final volumes of the Safety Evaluation Report, a multi-volume report summarizing the Yucca Mountain application, the technical staff's safety review, and staff findings and recommendations. The report noted that DOE's license application met regulatory requirements, except for certain requirements related to ownership of land and water rights. The report recommended that "the [Nuclear Regulatory] Commission should not authorize construction of the repository because DOE has not met certain land and water rights requirements…and a supplement to DOE's environmental impact statement (EIS) has not yet been completed."[12]

In March 2015, NRC announced that its staff would prepare a supplement to DOE's EIS to address "the impacts of the proposed repository at Yucca Mountain on groundwater as well as the impacts from groundwater discharges to the surface."[13] In May 2016, NRC issued its supplement to the DOE EIS, and found that the estimated radiological doses in the groundwater surrounding the Yucca Mountain site are small because they are a small fraction of the background radiation dose.[14]

II. LEGISLATION

A. H.R. 2699, the Nuclear Waste Policy Amendments Act of 2019

On May 14, 2019, Reps. McNerney (D-CA) and Shimkus (R-IL) introduced H.R. 2699, the "Nuclear Waste Policy Amendments Act of 2019". A previous version of the bill, H.R. 3053, passed the House in the 115th Congress. Like its predecessor, H.R. 2699 amends the NWPA to update DOE's ability to manage nuclear waste.

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[11] U.S. DOE, *Draft Consent-Based Siting Process for Consolidated Storage and Disposal Facilities for Spent Nuclear Fuel and High-Level Radioactive Waste* (Jan. 12, 2017) (energy.gov/sites/prod/files/2017/01/f34/Draft%20Consent-Based%20Siting%20Process%20and%20Siting%20Considerations.pdf).

[12] U.S. Nuclear Regulatory Commission (NRC), *NRC Publishes Final Two Volumes of Yucca Mountain Safety Evaluation* (Jan. 29, 2015) (www.nrc.gov/reading-rm/doc-collections/news/2015/15-005.pdf).

[13] U.S. NRC Chairman Stephen G. Burns, *Prepared Remarks Before United States Energy Association Meeting, National Press Club* (Apr. 30, 2015) (pbadupws.nrc.gov/docs/ML1512/ML15121A048.pdf).

[14] U.S. NRC, *Supplement to the U.S. Department of Energy's Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada* (May 2016) (www.nrc.gov/docs/ML1612/ML16125A032.pdf).

The bill addresses the need for both interim storage and long-term disposal of nuclear waste. In the near term, the bill gives DOE the authority to site, construct, and operate one or more interim storage sites that would consolidate SNF from decommissioned reactors. One interim storage site would proceed notwithstanding NRC's ultimate decision on a permanent repository, and subsequent interim storage sites could be licensed once NRC issues a final repository decision. The program would also prioritize the transfer of spent fuel from seismically active areas.

The bill would permit DOE to undertake "infrastructure activities" intended to enable construction and operation of a repository at Yucca Mountain, including safety upgrades, site preparation, construction of a rail line, and grid connection. That process would also allow the Federal government to enter into agreements to provide financial benefits to state, local, and tribal governments that may be affected by storage and disposal of SNF. H.R. 2699 also establishes ratepayer protections by reforming the finance mechanism of the Nuclear Waste Fund and assures that DOE has adequate funding to construct and operate a repository.

B. H.R. 3136, the Storage and Transportation of Residual and Excess (STORE) Nuclear Fuel Act of 2019

On June 5, 2019, Rep. Matsui (D-CA) introduced H.R. 3136, the "Storage and Transportation of Residual and Excess (STORE) Nuclear Fuel Act of 2019". The bill directs the Secretary of Energy to establish an interim storage program for high-level radioactive waste and SNF. It would allow DOE to contract with private storage facilities capable of storing such material, while requiring the Secretary to prioritize the storage of high-level waste and SNF generated by defense-related activities and decommissioned civil nuclear reactors. The bill gives site preference to facilities that are co-located with a repository. In order to approve a final site, the bill requires the Secretary to enter into a consent agreement with the state where the site would be located as well as local government officials, and any affected Indian tribes.

C. H.R. 2995, the Spent Fuel Prioritization Act of 2019

On May 23, 2019, Rep. Mike Levin (D-CA) introduced H.R. 2995, the "Spent Fuel Prioritization Act of 2019". The bill amends the NWPA to require the Secretary of Energy to prioritize the removal of SNF from decommissioned nuclear sites in areas with large populations and high seismic hazard.

III. WITNESSES

The following witnesses have been invited to testify:

Maria G. Korsnick
President and CEO
Nuclear Energy Institute

Geoffrey H. Fettus
Senior Attorney, Nuclear, Climate, and Clean Energy Program
Natural Resources Defense Council

Robert J. Halstead
Executive Director
State of Nevada, Office of the Governor, Agency for Nuclear Projects

Austin Keyser
Director, Political & Legislative Affairs
International Brotherhood of Electrical Workers

Lake Barrett
Former Acting Director
Office of Civilian Radioactive Waste Management, U.S. Department of Energy