

ONE HUNDRED FIFTEENTH CONGRESS  
**Congress of the United States**  
**House of Representatives**  
COMMITTEE ON ENERGY AND COMMERCE  
2125 RAYBURN HOUSE OFFICE BUILDING  
WASHINGTON, DC 20515-6115

Majority (202) 225-2927  
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**MEMORANDUM**

**February 3, 2018**

**To: Subcommittee on Energy Democratic Members and Staff**

**Fr: Committee on Energy and Commerce Democratic Staff**

**Re: Hearing on “DOE Modernization: Advancing the Economic and National Security Benefits of America’s Nuclear Infrastructure”**

On **Tuesday, February 6, 2018, at 10:00 a.m. in room 2123 of the Rayburn House Office Building**, the Subcommittee on Energy will hold a hearing entitled “DOE Modernization: Advancing the Economic and National Security Benefits of America’s Nuclear Infrastructure.”

**I. BACKGROUND**

The U.S. Department of Energy (DOE) covers three separate and distinct areas: energy policy, research and development, and nuclear weapons programs.<sup>1</sup> For additional information about DOE’s mission and structure, please refer to our [memorandum](#) regarding the Subcommittee’s DOE modernization hearing held on January 9, 2018.

DOE’s mission includes a number of programs and offices that manage nuclear research and development, nuclear facility decontamination and decommissioning, the nuclear weapons stockpile, and nuclear nonproliferation. The Office of Nuclear Energy (NE) is responsible for research, development, and the advancement of nuclear technologies, which contribute to the nation’s energy, environmental, and security needs.<sup>2</sup> Since 1989, the Office of Environmental Management (EM) has managed cleanup of radioactive sites resulting from radioactive waste,

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<sup>1</sup> U.S. Department of Energy, About Us ([energy.gov/about-us](http://energy.gov/about-us)) (accessed Jan. 31, 2018).

<sup>2</sup> U.S. Department of Energy Office of Nuclear Energy, About Us ([www.energy.gov/ne/about-us](http://www.energy.gov/ne/about-us)) (accessed Jan. 31, 2018)

spent nuclear fuel, and excess plutonium and uranium.<sup>3</sup> EM is responsible for the safe cleanup of 107 sites throughout the U.S., of which 91 have been completed.<sup>4</sup>

The National Nuclear Security Administration (NNSA) is responsible for managing the nation's nuclear development and security programs. NNSA is a semi-autonomous agency within DOE that maintains the nation's nuclear stockpile, leads international nonproliferation efforts, promotes counter-terrorism and counter-proliferation, and responds to nuclear emergencies.<sup>5</sup>

The semi-autonomous nature of NNSA has engendered criticism, most notably in a 2014 report produced by the Congressional Advisory Panel on the Governance of the Nuclear Security Enterprise co-chaired by Norman R. Augustine and Admiral Richard W. Mies. The report, also known as Augustine-Mies, found that the current NNSA structure has not established an effective operational system.<sup>6</sup> The final report determined that “the relationships among NNSA, the Secretary of Energy, and the DOE headquarters are not properly aligned with mission needs today and are therefore in need of major reform.”<sup>7</sup> It further stated, “the nuclear enterprise would be most effective in performing its missions if it were led by a knowledgeable, engaged Cabinet Secretary and if ownership of the mission were Department-wide.”<sup>8</sup> The Panel thus recommends that Congress amend the NNSA Act and related legislation to reintegrate NNSA into DOE. It suggests creating an Office of Nuclear Security within the Department to perform the missions currently assigned to NNSA. The Government Accountability Office (GAO) has also placed NNSA's contract management on its High Risk List as being at increased risk for fraud, waste, and mismanagement.<sup>9</sup> The “High Risk” designation focuses on NNSA's struggles to stay within cost and schedule estimates for most major projects.

## II. ROLE OF THE NUCLEAR REGULATORY COMMISSION

Congress first established the Atomic Energy Commission (AEC) in the Atomic Energy

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<sup>3</sup> U.S. Department of Energy Office of Environmental Management, About Us ([energy.gov/em/about-us](http://energy.gov/em/about-us)) (accessed Jan. 31, 2018).

<sup>4</sup> U.S. Department of Energy Office of Environmental Management, Cleanup Sites ([www.energy.gov/em/cleanup-sites](http://www.energy.gov/em/cleanup-sites)) (accessed Feb. 1, 2018).

<sup>5</sup> National Nuclear Security Administration, Our Operations ([nnsa.energy.gov/aboutus/ouoperations](http://nnsa.energy.gov/aboutus/ouoperations)) (accessed Jan. 4, 2018).

<sup>6</sup> Congressional Advisory Panel on the Governance of the Nuclear Security Enterprise, *Interim Report* (Mar. 24, 2014) ([docs.house.gov/meetings/AS/AS29/20140326/101946/HHRG-113-AS29-Wstate-AugustineN-20140326.pdf](https://docs.house.gov/meetings/AS/AS29/20140326/101946/HHRG-113-AS29-Wstate-AugustineN-20140326.pdf)).

<sup>7</sup> *Id.*

<sup>8</sup> *Id.*

<sup>9</sup> Government Accountability Office, *High-Risk Series: An Update* (Feb. 2015) (GAO-15-290).

Act of 1946.<sup>10</sup> Congress enabled the development of commercial nuclear power with the Atomic Energy Act of 1954 and assigned regulation of the nascent nuclear power industry to the AEC. Throughout the 1960s and early 1970s, critics charged that the AEC's regulations were not sufficient with regard to radiation protection, reactor safety, plant siting and environmental protection.<sup>11</sup> In 1974, Congress responded to these criticisms by abolishing the AEC and passing the Energy Reorganization Act of 1974 which, among other things, created the Nuclear Regulatory Commission (NRC).<sup>12</sup>

The NRC inherited the responsibility of licensing and regulating the operation of commercial nuclear power plants in the U.S. from the AEC.<sup>13</sup> Nuclear power plants were first licensed under a two-step process which required a construction permit and an operating license.<sup>14</sup> Each stage of this process required adjudicatory proceedings and an environmental impact statement under the National Environmental Policy Act (NEPA).<sup>15</sup> In 1989, NRC created a new process for combined construction permits and operating licenses (COLs). Over the objections of nuclear opponents, Congress provided clear statutory authority for the combined process in the Energy Policy Act of 1992 in response to industry concerns that the two-step process was lengthy and unpredictable.<sup>16</sup> Under the COL process, completed plants can begin to operate without delay if they meet a series of construction requirements called Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC).

The duration of an initial operating license for commercial power reactors is 40 years. These licenses can be renewed for an additional 20 years at a time.<sup>17</sup> Nuclear plant operators can select whether or not to seek renewal at their own discretion.

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<sup>10</sup> Atomic Energy Act of 1946, Pub. L. No. 79-585.

<sup>11</sup> Nuclear Regulatory Commission, About NRC – History ([www.nrc.gov/about-nrc/history.html](http://www.nrc.gov/about-nrc/history.html)) (accessed Jan. 31, 2018).

<sup>12</sup> Energy Reorganization Act of 1974, Pub. L. No. 93-438.

<sup>13</sup> Nuclear Regulatory Commission, *Fact Sheet on Nuclear Power Plant Licensing Process* ([www.nrc.gov/reading-rm/doc-collections/fact-sheets/licensing-process-fs.pdf](http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/licensing-process-fs.pdf)) (accessed Feb. 1, 2018).

<sup>14</sup> 10 C.F.R. § 50.

<sup>15</sup> Congressional Research Service, *Nuclear Energy Policy* (Oct. 15, 2014) ([www.crs.gov/reports/pdf/RL33558](http://www.crs.gov/reports/pdf/RL33558)).

<sup>16</sup> *Id.*

<sup>17</sup> Nuclear Regulatory Commission, *Background on Reactor License Renewal* ([www.nrc.gov/reading-rm/doc-collections/fact-sheets/fs-reactor-license-renewal.html](http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/fs-reactor-license-renewal.html)) (accessed Feb. 1, 2018).

### III. NUCLEAR INNOVATION

Existing nuclear power plants in the U.S. use light water reactor technology, which employs ordinary water to cool the reactor. Nuclear power reactor designers are currently developing a number of advanced non-light water reactor and light-water small modular reactor (SMR) designs. The goal of these designs is to produce nuclear power more efficiently, with less waste than current technologies.<sup>18</sup> DOE defines SMR nuclear reactors as having a generating capacity of not more than 300 megawatts. This allows for smaller designs that can be assembled in factories rather than at the reactor site, reducing the overall capital investment for construction.<sup>19</sup>

The federal government, mostly through NE, provides funding to support the development of advanced nuclear energy technology. On December 7, 2017, DOE announced a \$30 million funding opportunity for projects to “develop innovative, industry-driven reactor designs and accompanying technologies with high potential to advance nuclear power in the U.S.”<sup>20</sup>

On January 23, 2017, the House of Representatives passed H.R. 590, the Advanced Nuclear Technology Development Act of 2017, introduced by Rep. Latta (R-OH) and Rep. McNerney (D-CA). The legislation aims to foster civilian research and development of advanced nuclear energy technologies and enhance the licensing and commercial deployment of such technologies. . For additional information on the legislation see the [memorandum](#) from the Subcommittee on Energy hearing held April 29, 2016.

### IV. WITNESSES

The following witnesses have been invited to testify:

#### **Panel I**

##### **Ed McGinnis**

Principal Deputy Assistant Secretary, Office of Nuclear Energy  
Department of Energy

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<sup>18</sup> Congressional Research Service, *Nuclear Energy: Overview of Congressional Issues* (Nov. 27, 2017) ([www.crs.gov/reports/pdf/R42853](http://www.crs.gov/reports/pdf/R42853)).

<sup>19</sup> Congressional Research Service, *Small Modular Reactors: Status and Issues* (Aug. 24, 2017) ([www.crs.gov/Reports/IN10765?source=search&guid=20621681cf3b44f7bb0dae9557dc643c&index=0](http://www.crs.gov/Reports/IN10765?source=search&guid=20621681cf3b44f7bb0dae9557dc643c&index=0)).

<sup>20</sup> Department of Energy, *Secretary of Energy Rick Perry Announces \$30 Million Investment in Advanced Nuclear Technology* ([energy.gov/articles/secretary-energy-rick-perry-announces-30-million-investment-advanced-nuclear-technology](http://energy.gov/articles/secretary-energy-rick-perry-announces-30-million-investment-advanced-nuclear-technology)) (accessed Jan. 31, 2018).

**Art Atkins**

Associate Deputy Administrator for Global Material Security  
National Nuclear Security Administration

**James Owendoff**

Principal Deputy Assistant Secretary, Office of Environmental Management  
Department of Energy

**Victor McCree**

Executive Director of Operations  
Nuclear Regulatory Commission

**Panel II**

**Bill Ostendorff**

Distinguished Visiting Professor of National Security  
U.S. Naval Academy

**Mark Peters**

Director  
Idaho National Laboratory

**Maria Korsnick**

President and Chief Executive Officer  
Nuclear Energy Institute

**Ashley Finan**

Policy Director  
Nuclear Innovation Alliance

**David Trimble**

Director of Natural Resources and Environment  
Government Accountability Office