

Nuclear Power

Background

Nuclear power is the nation's largest source of emissions-free electricity, accounting for 55 percent of domestic emissions-free electricity generation and 20 percent of total electricity generation. There are 98 reactors in 29 states. It is a reliable source of baseload (i.e., available most of the time) energy, operating with an average capacity factor greater than 90 percent. Given these characteristics, nuclear plays a significant part in ensuring reliable, zero-emissions electricity service.

In 2017, public power utilities generated 15.9 percent of their electricity from nuclear power. Public power utilities both own and operate nuclear reactors outright, or partner with other utilities to co-own a facility. In addition, public power utilities receive power from nuclear power plants through bilateral contracts, indirectly through electricity markets, or in the case of those located in the Tennessee Valley, by purchasing power generated by the Tennessee Valley Authority (TVA), which owns and operates several nuclear power plants.

The American Public Power Association (APPA or Association) supports the continued use of nuclear power, a key source of baseload, emissions-free electricity. APPA believes the federal government should make the construction of an interim storage facility for nuclear waste in a willing host community a priority. The Department of Energy (DOE) must also follow its statutory obligations and construct a final repository for nuclear waste, whether at Yucca Mountain, or another location. The Association also believes that federal policies should be enacted to facilitate the construction of new nuclear facilities and further the development of small modular reactors (SMRs).

Spent Nuclear Fuel

The United States has long searched for a solution to address the back end of the nuclear fuel cycle (also referred to as spent nuclear fuel or nuclear waste). In 1982, Congress passed the Nuclear Waste Policy Act (NWPA), which assigned responsibility to DOE to site, construct, and operate a final repository for

spent nuclear fuel. In 1987, Congress amended the NWPA and designated Yucca Mountain as the sole site for DOE to consider, after conducting studies of nine potential sites.

As part of the NWPA, a surcharge of one-tenth of one cent was placed on electricity produced from nuclear power plants to fund the federal government's efforts to construct the final repository. Nuclear energy consumers, through this surcharge, paid a total of \$30 billion into the nuclear waste fund, or more than \$750 million per year. In 2008, DOE began pursuing a license with the Nuclear Regulatory Commission (NRC or Commission) to construct a facility at Yucca Mountain. However, despite spending nearly \$15 billion dollars on the project, in 2009, the Obama Administration eliminated funding for the project, and a year later, DOE moved to withdraw its license.

Due to the federal government's failure to fulfill its obligations under the NWPA to construct a repository, in 2013, the U.S. Court of Appeals for the D.C. Circuit ordered DOE to stop collecting the nuclear waste fee. Separately, on August 13, 2013, the court also ordered the NRC to use already obligated funds to resume its review of DOE's Yucca Mountain license, which the Commission had stopped doing in 2010.

In 2014, NRC staff finished a five-volume safety evaluation report and found Yucca Mountain to be a safe location for the long-term storage of spent nuclear fuel. However, the report recommended against NRC approval of the site until land and water rights are acquired and a supplement to DOE's environmental impact statement (EIS) is completed. While the NRC has been pressed to use its own funds to complete the EIS, it is unlikely that other necessary actions for approval will be completed without DOE cooperation or congressional action.

The Trump Administration included \$116 million in its fiscal year 2020 budget request to restart work on Yucca Mountain and create a temporary storage program. While the Administration's funding request is a positive step, it is unclear whether the site will ever open given the opposition of the Nevada congressional delegation and the time it would take to restart the process at DOE.

Small Modular Reactors

SMRs have the potential to be an important addition to America's energy mix. They are small nuclear reactors that could generate up to 300 megawatts of power and be linked together to provide incremental power as load grows. SMRs could yield significant economic, energy security, and environmental benefits. They are expected to be an attractive option for generating electricity from a non-greenhouse gas emitting energy source and could provide utilities with flexibility through scalability and plant siting. Because of the potential benefits of SMRs, DOE has provided funding for the accelerated development and commercialization of this technology.

On February 19, 2016, DOE announced an agreement to support possible siting of an innovative SMR project at its Idaho National Laboratory (INL). The Site Use Permit allows APPA member Utah Associated Municipal Power Systems (UAMPS) to access the INL site to analyze environmental, safety, and siting conditions to identify potential locations suitable for building its Carbon Free Power Project. On January 12, 2017, NuScale Power, working in conjunction with UAMPS, submitted its design application to the NRC to approve its SMR commercial power plant design. This is the first-ever SMR design certification application (DCA) to be submitted to the NRC. In April 2018, Nuscale's SMR design completed the first phase of review for its DCA. Completion of the certification process is expected 40 months from the date of submission. If approved, this project will be a 12-module power plant built on the site of the INL near Idaho Falls, Idaho. Additionally, TVA submitted an early site permit for two or more SMR modules at the Clinch River Nuclear site on May 12, 2016. In April 2019, the NRC completed its environmental impact evaluation and found nothing that would "prevent...[TVA] from locating its proposed Clinch River Nuclear Site near Oak Ridge, Tennessee." A hearing on the permit will occur later this year.

Congressional Action

Several bills were introduced in the House of Representatives and Senate on nuclear matters in the 115th Congress, two of which became law. S. 97, the Nuclear Energy Innovation Capabilities Act, sponsored by Senators Mike Crapo (R-ID) and Sheldon Whitehouse (D-RI), was signed into law in September 2018. The bill establishes an advanced nuclear energy licensing cost-share grant program to help accelerate the deployment of SMR and other advanced reactor technologies by lowering the

cost associated with navigating the Commission's licensing process. Another Senate bill, S. 512, the Nuclear Energy Innovation and Modernization Act, became law in January 2019. Sponsored by Senate Environment & Public Works (EPW) Committee Chairman John Barrasso (R-WY), the bill establishes new transparency and accountability measures for NRC's budget and fee programs. In addition, it directs the Commission to implement a licensing framework for advanced reactors.

Nuclear energy and nuclear waste policy remain an important topic in the 116th Congress. On April 30, 2019, Senate Energy & Natural Resources Committee Chairman Lisa Murkowski (R-AK), Senator Cory Booker (D-NJ), and thirteen other senators introduced S. 903, the Nuclear Energy Leadership Act. The bill seeks to promote the development of advanced nuclear reactors by extending the maximum length of a federal power purchase agreement from 10 to 40 years. In addition, it would require DOE to enter into at least one power purchase agreement with a commercial reactor by 2023. The bill was approved by the committee on July 16. A companion bill (H.R. 3306) was introduced in the House in June 2019 by Representatives Elaine Luria (D-VA), Denver Riggleman (R-VA), Connor Lamb (D-PA), and Rob Wittman (R-VA).

On April 30, 2019, Senator Murkowski also introduced S. 1234, the Nuclear Waste Administration Act, along with Senators Lamar Alexander (R-TN) and Dianne Feinstein (D-CA). The bill would establish an independent agency to manage the country's nuclear waste program, implement a consent-based process for consolidated storage facilities and a new long-term repository, and authorize the siting of a pilot storage facility for priority waste. A legislative hearing was held on the bill on June 27 at which Chairman Murkowski lamented the stalemate on Yucca Mountain and suggested policymakers need to consider next steps on the disposition of nuclear waste.

In addition, the Senate EPW Committee held a hearing in May on a draft bill, the Nuclear Waste Policy Amendments Act of 2019, that is aimed at advancing the development of permanent and temporary nuclear waste disposal sites. Sponsored by Committee Chairman John Barrasso (R-WY), the legislation would advance the licensing of Yucca Mountain as a permanent repository for nuclear waste, as well as promote the development of interim storage. The bill is similar to legislation introduced by Representatives Jerry McNerney (D-CA) and John Shimkus (R-IL) in May 2019 (H.R. 2699). APPA supports the bill.

American Public Power Association Position

APPA supports the construction of a consolidated interim storage facility in a willing host community in the next 10 years. The Association also supports the creation of a congressionally chartered federal corporation dedicated to implementing the waste management program and construction of a final repository for nuclear waste, including, but not limited to, Yucca Mountain. In addition, APPA supports federal efforts to further the development of SMRs, including the licensing and commercialization of such technologies for use by electric utilities in the U.S.

American Public Power Association Contact

Desmarie Waterhouse, Vice President, Government Relations,
& Counsel, 202-467-2930 / dwaterhouse@publicpower.org

The American Public Power Association is the voice of not-for-profit, community-owned utilities that power 2,000 towns and cities nationwide. We represent public power before the federal government to protect the interests of the more than 49 million people that public power utilities serve, and the 93,000 people they employ. Our association advocates and advises on electricity policy, technology, trends, training, and operations. Our members strengthen their communities by providing superior service, engaging citizens, and instilling pride in community-owned power.