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Constellation Energy
House Committee on Science, Space, and Technology
Subcommittee on Energy
June 12, 2025

Chairman Weber, Ranking Member Ross, members of the subcommittee.

Thank you for the opportunity to appear before you today to discuss the role of nuclear energy in powering America's artificial intelligence infrastructure.

Constellation is the largest owner and operator of commercial nuclear plants in the United States, with 21 reactors in Illinois, Maryland, New York, and Pennsylvania, and a partial ownership interest in four additional reactors in New Jersey and Texas. In addition, Constellation owns and operates natural gas, hydropower, solar, and wind generation in 20 states. We are also a leading supplier of energy products and services including sustainable energy solutions to millions of homes, institutional customers, the public sector, community aggregations and businesses, including three quarters of Fortune 100 companies. Finally, Constellation is in the process of acquiring Calpine Corporation, the nation's largest natural gas and geothermal generator, further bolstering our ability to provide our customers with reliable, affordable, and clean power.

America Must Win the Race for AI Supremacy

As President Trump and bipartisan leaders in our national security and intelligence communities have noted, the global race to secure AI dominance is one that we as a nation cannot afford to lose. The importance of this race has also been recognized by some of America's most prominent competitors globally. The Department of Defense has warned that "China is a global leader in AI technology and aims to overtake the West in AI R&D by 2025 to become the world leader in AI by 2030." Russian President Vladimir Putin has put the stakes of winning the AI race more bluntly, declaring that the nation that leads in AI "will be the ruler of the world" for the next century.

Recognizing the imperative of winning this race, Federal policymakers must urgently focus their attention on how to achieve and maintain AI supremacy. Hyperscalers and chip manufacturers have identified energy supply as the critical limiter in data center and AI expansion in the years ahead. The AI community is looking for large quantities of highly reliable, 24/7 generation that is also affordable and clean. Nuclear power is uniquely suited to meet that need, both today and in the years ahead.

Nuclear energy is the nation's most reliable source of power, providing nearly 20 percent of our power needs. America's 94 nuclear reactors had a capacity factor of over 93 percent in 2024. These plants run 24/7, rain or shine, providing the power quality that data centers require. Nuclear plants run continuously between refueling outages, which occur every 18 to 24 months. Because these plants run around-the-clock, a 1,000 megawatt nuclear reactor provides as much energy as 2,800 megawatts of wind or 7,300 megawatts of solar, and it delivers that power every minute of the day.

Estimates vary, but it is clear that power demand to meet data center and other large load needs will be sizeable. While meeting that demand will be a significant challenge, it is a surmountable one that we simply must meet. Nuclear power, both existing reactors and advanced plants, are essential to winning the AI race.

Existing Nuclear Power Plants Provide Reliable Power Needed for AI

I want to focus my remarks today on the work that we at Constellation are doing to meet data center demand. There are four ways our existing nuclear fleet can meet the near-term need for reliable generation to meet this load: (1) extending the life of our existing reactors, (2) "uprating" existing reactors through upgrades that permanently increase power output, (3) restarting retired reactors, and (4) adding new reactors at the site of existing plants. Restarts and uprates provide a relatively quick, relatively inexpensive way to bring new capacity online. But the biggest impact we can make is to relicense the existing fleet for an additional 20 years, which is the lowest cost and quickest way to add capacity to the grid.

Constellation has made two announcements in the last year related to serving data center load. In September 2024, Constellation announced that we will restart Unit One of the shuttered Three Mile Island site as the Crane Clean Energy Center as part of a 20-year power purchase agreement with Microsoft. This reactor had been closed before the end of its licensed life in 2019 due to economic factors caused in part by flawed policy decisions. When the plant is returned to service in 2027 or 2028, it will provide 835 megawatts of power to the PJM grid for use at Microsoft facilities across the PJM region. Of course, it would have been better for the community, our employees and the planet if the plant had never retired, but it is a testament to Microsoft that it is coming back online and will run for an additional 20 years.

Earlier this month, Constellation announced a 20-year power purchase agreement with Meta for the output from the 1,100 megawatt Clinton Clean Energy Center in central Illinois. Under the agreement, Meta will use the output from the plant for its facilities in the Midwest Independent System Operator footprint beginning in 2027. This agreement will

allow us to relicense the Clinton Clean Energy Center to operate it through at least 2047 and calls for us to uprate the plant to produce an additional 30 megawatts of power.

Constellation earlier announced $800 million in investments to uprate our Braidwood and Byron Clean Energy Centers in Northern Illinois by 135 megawatts, enough energy to power 100,000 average homes. Additional output at the plants is expected to begin next year and the uprates will be fully completed by 2029. We believe that we can add an additional 1,000 megawatts – the equivalent of a new large-scale reactor – of uprates to our system in the next five to six years.

It is important to understand that we were having a much different conversation about the future of nuclear power just four years ago. Companies in the United States had shuttered 13 reactors before the end of their licensed lives, primarily for economic reasons due to energy policy that valued only new renewable energy, not all clean energy. Constellation had closed Three Mile Island in Pennsylvania and the Oyster Creek reactor in New Jersey, and we were just weeks away from closing four additional reactors in Illinois before legislators in Illinois stepped in. At that time, S&P estimated that half of the nuclear plants in the country were at risk of closing early.

Supportive tax policy from the Federal government completely changed this outlook. The Section 45U production tax credit for existing nuclear plants was a carefully crafted policy that established a credit for nuclear plants but also put in place a means test. Reactors in markets with depressed power prices were eligible for tax credits, but those credits phase out if market revenues increase. This balanced approach, reaffirmed by the House in this year's reconciliation legislation, provided reactor owners with the certainty necessary to reinvest in the plants while avoiding windfalls to reactors that received sufficient income to continue operating. Similarly, the Section 45Y and 48E technology-neutral tax credits for new generation will spur nuclear plant restarts and additional power uprates. If they stay in place long enough, they will support advanced reactor construction as well.

Advanced Nuclear

Constellation has announced that we are exploring the possibility of advanced nuclear deployment, but those decisions have a longer timeline. Our Clinton Clean Energy Center has an Early Site Permit for a new reactor at the site, and we are exploring early site permits at two additional sites where we have existing plants.

We believe that the most logical place for new nuclear plants is sites with existing reactors. These sites have been proven to meet regulatory requirements with safety and environmental reviews and have critical existing cooling water, rail and electric infrastructure. The incredible communities that host these plants today—which includes

hundreds of nuclear workers and their families—are supportive of the opportunity to expand nuclear. The sites also have additional land available where loads like data centers can co-locate, minimizing the need to build out additional electrical infrastructure and transmission.

Like existing reactors, advanced reactors offer technology companies the opportunity to procure large quantities of highly reliable, 24/7 power that is emissions free, something that is important to their customers and investors. Each of the hyperscalers has taken steps to support the development of advanced reactors as part of their clean energy procurement strategies. As Meta described it, this is because of "the immense value of nuclear power in providing reliable, firm electricity, and the role nuclear projects can have in supporting local economies and strengthening America's energy leadership."

The Department of Energy's Office of Nuclear Energy has several programs to support research, development, and demonstration activities related to advanced nuclear power. In particular, the Advanced Reactor Demonstration Project is aimed at testing, licensing, and building operational advanced reactors in the near term. The Department is also working to solve technical, operational, and regulatory challenges for a handful of advanced reactor technologies. The Nuclear Regulatory Commission has approved designs for the Westinghouse AP1000 reactor and NuScale's 77-megawatt small modular reactor design, and other reactor designs have been submitted to the Commission for approval.

Commercializing first-of-a-kind technologies introduces complexity for the project timeline, regulatory uncertainty, and supply chain challenges that will require public-private partnerships, something recognized in President Trump's recent Executive Order 14302 on Reinvigorating the Nuclear Industrial Base. The Executive Order directs that "the Department of Energy shall prioritize work with the nuclear energy industry to facilitate 5 gigawatt of power uprates to existing nuclear reactors and have 10 new large reactors with complete designs under construction by 2030." The Order goes on to direct the Loan Programs Office to "prioritize activities that support nuclear energy, including actions to make available resources for restarting closed nuclear power plants, increasing power output of operating nuclear power plants, completing construction of nuclear reactors that was prematurely suspended, constructing new advanced nuclear reactors, and improving all associated aspects of the nuclear fuel supply chain." As described further below, this level of support is critical to advancing new reactors in the United States.

Federal and State Policies Will Determine Whether We Succeed or Fail

Some have suggested that federal and state policymakers require data centers to adopt a "bring your own generation" policy under which technology companies would be required to build new generation before developing their data centers. Every jurisdiction that has considered this policy thus far has rejected it, for good reason. Such a policy would effectively delay AI efforts in the United States by three to five years or more and essentially hand the AI race to China.

Instead, federal agencies should be taking action to remove barriers that are preventing data centers from accessing and using available sources of electricity. The Federal Energy Regulatory Commission has been debating for over a year the rules for data centers to co-locate with power plants. As President Trump recognized in January, co-location – which is when a data center sites at or next to a power plant – enables development "on a very rapid basis." This is because it minimizes the need for new transmission lines to deliver power over long distances, which also lowers costs for both the data center and other customers. Data center projects are being stalled because of a lack of clear RTO rules for co-location, which is solely within FERC's jurisdiction.

Environmental Protection Agency regulations also limit the ability of data centers to use their on-site backup generation in ways that would enable the flexibility that I mentioned earlier. Those rules currently allow backup generation to only be used in grid emergencies or a small number of hours for testing. Allowing those generators to be used to avoid grid emergencies in the first place would unlock the ability of data centers and other large uses of power to help the grid instead of burden it.

Conclusion

Thank you again for the opportunity to appear before you today. Nuclear power is well positioned to play a critical role in meeting the power needs for data centers and other large load customers both now and in the future. Maintaining federal policy support both through Department of Energy programs at the Office of Nuclear Energy and the Loan Programs Office as well as tax credits in Sections 45U, 45Y, and 48E will be essential in maintaining existing reactors and in deploying new advanced reactor designs in the U.S.

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