



Advanced Nuclear Power

"The simple reality is that we cannot meet our commitment to cut carbon emissions without nuclear being part of our energy mix."

*—International President
Lonnie Stephenson*



IBEW POLICY BRIEF

GOVERNMENT AFFAIRS DEPARTMENT LEGISLATIVE ACTIVITY

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The IBEW supports the development of advanced nuclear technologies and extending the lives of current nuclear reactors. As the only baseload (24/7) source of zero-emissions energy production, nuclear generation is critical if the United States is going to continue to reduce carbon emissions and avoid the worst potential impacts of climate change. Nuclear is the only carbon-free source that can ensure around-the-clock generation.

Nuclear power is a key component of the effort to combat climate change. The IBEW supports research and development funding as well as collaboration with industry to nurture next-generation nuclear reactors, balancing economic competitiveness with reasonable regulatory oversight. Advanced nuclear technology is a fundamental component of an all-of-the-above energy strategy.

The nuclear industry supplies high-quality employment, providing family-sustaining careers that pay, on average, one-third more than other jobs in the communities where plants are located. The IBEW is the largest union in the nuclear industry – 15,000 IBEW members are employed full time at 55 nuclear facilities across the United States. Thousands more IBEW members in the construction sector rotate through nuclear plants under contracts for maintenance and refueling. Nuclear generating facilities are among the safest industrial work environments in the world.

Nuclear power has accounted for about 20 percent of annual U.S. electricity generation since the late 1980s. In 2020, it was 19.7 percent. In recent years, the U.S. nuclear power industry has faced economic challenges, particularly for plants located in power markets where natural gas and renewable power generators influence wholesale electricity prices. Twelve U.S. nuclear power reactors have permanently closed since 2012. Seven additional U.S. reactor retirements have been announced through 2025, with a total generating capacity of 7,109 megawatts (equal to roughly 7 percent of U.S. nuclear capacity).

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Recent Developments

Nuclear's Future: Nuclear Energy Provisions in the Bipartisan Infrastructure Law

The Biden administration has identified the nation's current fleet of nuclear power plants as vital for achieving the national goals of a net-zero electricity sector by 2035 and net-zero emissions economy-wide by 2050. The Bipartisan Infrastructure Law (BIL) includes several nuclear energy-related provisions, including support for keeping nuclear power plants online that are facing economic hardship through the Department of Energy (DOE)'s new Advanced Reactor Demonstration Program (ARDP).

The BIL established a \$6 billion civil nuclear credit program designed to preserve the existing nuclear fleet and prevent premature shutdowns of nuclear power plants. This provision is expected to help preserve the U.S. reactor fleet and save thousands of high-paying jobs across the country. The law provides \$6 billion through 2026 (\$1.2 billion per year). Under this program, owners or operators of commercial U.S. reactors can apply for certification to bid on credits to support their continued operations by showing the reactor is projected to close for economic reasons and that closure will lead to a rise in carbon emissions.

The BIL recognizes the contributions of our nation's existing nuclear reactor fleet in providing reliable, clean power to millions of households and supports continued operations of these clean energy sources and the nearly 100,000 U.S. jobs in the nuclear industry.

Reliability for Uncertain Times

While the United States implements more intermittent renewable power, primarily from solar and wind, the need for reliable baseload generation will grow. Several episodes of severe weather in recent years, from polar vortices to triple-digit summer heatwaves, have revealed the need for the zero-emission baseload generation that nuclear power provides.

If all existing nuclear reactors were to run for 80 years instead of 60 years, CO₂ emissions would be reduced by 3.5 billion tons through 2050. Given that electricity demand is expected to rise significantly in the coming decades, the need for such clean and reliable electricity is paramount.

A Permanent Place for Waste

Critical to the future of the nation's nuclear sector is opening a permanent repository for spent nuclear fuel. More than 88,000 metric tons of spent nuclear fuel sitting at 121 temporary sites in 39 states across the country. Going back to the late 1970s, the IBEW has endorsed legislation that ensures central storage, safe transportation and permanent disposal of spent nuclear fuels.

The Department of Energy has announced a search for willing communities to store the nuclear waste after abandoning the decades-long effort to designate Nevada's Yucca Mountain as a repository following local opposition. A permanent geologic repository would help boost support for nuclear generation as a foundational part of our nation's energy portfolio. It is also necessary to ensure public support for the next generation of advanced nuclear reactors that we hope will come online in the near future.

In the interim, the IBEW supports opening a temporary facility to store spent nuclear fuel safely. An interim facility would allow for the redevelopment of shuttered nuclear plants, bringing economic revitalization, tax revenue and jobs to working families and communities that have been hard hit by the closures. Many closed nuclear stations are ideal sites for future development of other forms of electrical generation, including renewables, due to existing electrical transmission infrastructure.

Pending Priorities

Fuel for Advanced Nuclear Reactors

The U.S. government is already playing a pivotal role in the development of new advanced reactors. The Department of Energy’s Advanced Reactor Demonstration Program represents a multi-billion-dollar commitment to developing and deploying new nuclear technologies. Most of these new reactors, however, require a next-generation nuclear fuel called High-Assay, Low-Enriched Uranium (HALEU). Nine of the ten designs selected for DOE’s Advanced Reactor Demonstration Program require HALEU-based fuels. There is no HALEU produced in the United States today for commercial purposes and the only international source currently available is imported from Russia. The IBEW and the nuclear industry have been calling for federal support for domestic HALEU production, but the need for a safe domestic source of HALEU fuel has become more pressing since Russia began its invasion of Ukraine in late February 2022.

The House-passed Build Back Better Act (H.R. 5376) would provide \$500 million for domestic HALEU production through 2026.

Nuclear Power Production Tax Credit

The Build Back Better Act (H.R. 5376) would create a new production tax credit (PTC) for conventional nuclear generation. Modeled after the current production tax credit for wind generation, the nuclear PTC would provide a base credit of 1.8 cents/kilowatt hour for nuclear generation. The credit would be reduced as the sale price of nuclear-generated electricity increases. In order to claim the credit, the nuclear facility would need to pay its construction and maintenance workers prevailing wages and meet an apprenticeship requirement.

The intent of the nuclear PTC, like the Energy Department civil nuclear credit program, is intended to help financially vulnerable nuclear facilities be competitive with natural gas and renewable generation in unregulated energy markets and bring an end to the string of premature nuclear plant retirements that have resulted in lost manhours and jobs for IBEW members.

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