

November 30, 2018

Rep Dick Stein—Sponsor Testimony HB 771

Chairman Cupp, Vice Chair Carfagna, Ranking Member Ashford, and members of the House Public Utilities Committee, it gives me great pleasure to introduce new legislation allowing Ohio to pursue the research and development of advanced nuclear reactor designs. The need for this legislation comes on the heels of nearly fifty years of regulatory inaction by the Nuclear Regulatory Commission that has forced American companies to develop these technologies elsewhere; most notably China.

History shows that periods of rapid economic development quickly follow the discovery of a cheaper, more efficient energy source. Few things provide more hope for a brighter future, for a higher standard of living, than an abundance of clean, safe, and affordable energy. America's industrial revolution was in large part due to harnessing the steam engine to expedite trade via ship and rail. Nuclear science has enabled the United States to advance into the modern era; its byproducts have led us through an arms race and a race to the moon, are used in the most cutting edge medical procedures, and provide reliable carbon-free power to millions. Simply put, energy is the building block of modern civilization.

Nuclear science has come a long way since the Manhattan Project and harnessing the nuclear-chain-reaction, at Oak Ridge Laboratory in Tennessee. The first US full-scale power producing reactor went online 61 years across the border in Beaver County, Pennsylvania. These commercial light water reactors account for 75% of the world's aging fleet, many past their designed useful life. As the world hungers for carbon-free power, join me in letting Ohio tap into the potential

of nuclear, to support the advancement of a technology that already provides the vast majority of Ohio's carbon-free power.

The 1954 Atomic Energy Act encourages the Nuclear Regulatory Commission to, "Promote an orderly pattern between the Commission and State governments with respect to nuclear development...and [foster] research and development in order to encourage the maximum scientific and industrial progress." Ohio is uniquely suited for the research and development of these nuclear reactor technologies. Ohio boasts an advanced manufacturing capacity and a specialized faculty at The Ohio State University in nuclear engineering. Our state ranks number two in the nation for providing nuclear components and services to the military and industry.

Nuclear research and development has deep roots in Ohio, touching all corners of the state. Experiments at the Mound Laboratory in Miamisburg pioneered the field of utilizing isotopes for the benefit of man. Testing performed on reactors by Battelle in West Jefferson, at Wright Patterson Air Force Base, and at NASA's Plum Brook Station in Sandusky led to breakthrough discoveries in nuclear power submarines. During the 1960s, the Atomic Energy Commission operated a hydrocarbon cooled reactor in Piqua, OH that provided 40% of the city's electricity. Ohio State University operates one of only thirty-one domestic research reactors. And of course, we have two commercial scale reactors; Davis-Besse Nuclear Power Plant and Perry Nuclear Power Plant. This legislation follows the intent of House Concurrent Resolution 9 enrolled by the 131st General Assembly, to establish a sustainable energy abundance plan; and carries out the specifics included in House Resolution 518 introduced this year with 50 co-sponsors.

With your help we can lead the nation and the world by creating an environment to allow American companies to develop their new reactor designs here in Ohio. In our most recent visit to Oak Ridge Laboratory this past October, I had the opportunity to speak with U.S. companies working on these problems. Ironically is in not the lack of concepts for advanced reactor designs that is the biggest hurdle for these companies but the economic and regulatory certainly necessary for private investment to make these reactors a reality. These research reactors will be able to produce and provide lifesaving medical isotopes and allow specialized research in advanced nuclear medicine. In addition, several reactor designs will have the ability to use our current U.S spent nuclear fuel as a power source. At a recent meeting we held with a group of nuclear physicists here in Ohio it was explained that our nuclear waste has 90-95% of its original energy potential, that the current technology cannot extract, and that this spent fuel along with our decommissioned military assets has the potential to power the United States for the next 700 plus years. This alone could solve the issue of how to deal with our legacy fuel storage waste issues and could be implemented around the world providing abundant carbon free power to the world for generations. The United States has, as of the end of fiscal year 2017, set aside \$44.5 billion dollars for nuclear waste management. Ohio could lead the world in better, more productive ways to use this nuclear waste material.

The Ohio medical isotope economic development consortium authority act would allow advanced reactor technologies to be developed in Ohio under federal authority. The bill establishes a state regulatory **Authority**, and a private for-profit member-supported **Consortium**. The Ohio Nuclear Authority would consist of nine appointed members representing various stakeholder groups within the nuclear engineering and manufacturing industry and shall act under its delegated

authority by the Nuclear Regulatory Commission, United States Department of Energy, and branches of the military. The entities created do not ask for an appropriation nor rely on public funding to carry out their function. The activities of the Authority shall be paid for by fees collected on its performance of duties. It is likely that developing an advanced prototype reactor will be very expensive. To tackle this barrier, HB771 authorizes the formation of a public-benefit Nuclear Consortium. Its function will primarily be to generate private investment and in-kind technical support from firms and institutions in the nuclear supply chain; to crowdfund rulemaking for prototype reactors.

As a closing argument for why now and why Ohio consider the fact that our state population continues to shrink and with that the ability to create the needed revenue to efficiently manage and operate Ohio's government is diminished. We have gone from 25 congressional seats to currently 16 and it appears that after our next census this number will continue to decline. We need to grow our economy and stop the brain drain of our youngest and brightest leaving Ohio for better opportunities in other states. Advanced nuclear research science will provide high paying rewarding lifelong careers right here in Ohio. Not only will many of our children and grandchildren want to build their careers here in Ohio but others from around the county and around the world will select Ohio as the place where their future is bright. With your help we can make Ohio a shining beacon for the world by ushering in the next great technological era, for our state our county and the world.

Please join me in supporting House Bill 771 and bring an entire new industry into Ohio.

