

Written Testimony on Maine H.P. 243: “An Act to Direct the Public Utilities Commission to Seek Informational Bids Regarding Small Modular Nuclear Reactors in the State”

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Thank you, Chair Lawerence and Chair Sachs, and members of the Committee. My name is Dr. Patrick White, and I am the Research Director at the Nuclear Innovation Alliance – an independent non-profit, non-partisan think-and-do-tank focused on creating the conditions for success for advanced nuclear energy as a climate solution. I have an M.S. and PhD. in Nuclear Science and Engineering with a focus on safety, licensing, and design of fission and fusion power plants. I appreciate the opportunity to provide comments on bill H.P. 243 before the Committee today.

At the Nuclear Innovation Alliance, we focus on how nuclear energy can help meet our national and global need for affordable, reliable, and clean energy. As Maine seeks to achieve 80% renewable electricity generation by 2030 and aspires to achieve 100% clean electricity generation by 2040, and new nuclear energy can complement solar energy, wind energy, hydroelectric energy, energy storage, and other clean energy technologies to provide the affordable, reliable, secure, and clean power we need. NIA believes that state level support for advanced nuclear energy will be critical to accelerating the deployment of new nuclear power plants.

Advanced nuclear energy and small modular reactors can play an important role in Maine’s clean energy future by complementing renewable energy sources and providing a source of reliable clean energy. The clean dispatchable energy from new nuclear reactors can help ensure affordable and reliable energy year-round for residential, industrial, and commercial customers. It will be important for Maine to understand how utilities and other energy users, such as data centers and industrial customers, could invest in these new nuclear projects. This bill will enable Mainers to receive more information on new nuclear energy opportunities and evaluate if moving forward on projects is in the best interest of the state.

Across the United States and Canada, companies are deploying advanced nuclear energy to meet a variety of different energy needs:

- In Ontario, Canada, Ontario Power Generation (OPG) is building up to four GEH BWRX-300 reactors at the Darlington site to help provide reliable baseload energy
- In Texas, X-energy is partnering with Dow Chemical to deploy four Xe-100 HTGRs at the Seadrift site in Texas. These reactors will provide clean electricity and process heat for Dow’s existing chemical production facility. X-energy also has received an investment from Amazon to deploy Xe-100 reactors to power data centers with Energy Northwest in Washington State.
- In Wyoming, TerraPower is working with PacifiCorp to deploy their Sodium SFR at a retiring coal power plant in Kemmerer, Wyoming. The Sodium reactor has an integrated thermal energy storage system: the reactor can produce a constant amount of heat to produce 345 MW of electricity, but the heat is transferred to a molten salt thermal battery that can vary electricity output between 100 MW and 500 MW. This will enable the Sodium reactor to vary

its power output to match the varying production from other clean energy sources and changing demand from industry.

- In Idaho, BWXT is leading development of microreactors. BWXT has a contract from the Department of Defense to develop a transportable microreactor to support defense operations on Project Pele. Development work by the Department of Defense on nuclear reactors is creating opportunities to meet national defense energy need with high reliability, clean energy. This project is underway and looks to deploy their first reactors by 2027. BWXT is also working with Shepherd Power and NOV to deploy dozens of their BANR microreactor in the Permian Basin in Texas. These reactors can provide high reliability, clean, off-grid power in remote locations.

There are many different opportunities for nuclear energy to help meet Maine's clean energy needs, and we will see major commercial projects deployed across the United States in the coming decade. Industry experience with these projects will provide important new insights on the performance, cost, and deployment timelines of new nuclear energy. This bill will enable Maine to stay up to date on the different opportunities for nuclear energy and evaluate how it could meet the state's clean energy needs. This bill will not commit Mainers to building new nuclear power plants but will help get the information to make informed decisions about building new nuclear power plants. Nuclear energy can play an important role in helping Maine meet its clean energy needs and this bill will help the state learn more about the opportunities, cost, and deployment timelines for new nuclear energy.