DOD Exercises Option on Second Micro Nuclear Reactor Design

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As part of the Strategic Capabilities Office (SCO) initiative Project Pele, the Department of Defense (DOD) has awarded a contract option to X-energy, LLC of Rockville, Maryland in order to develop an enhanced engineering design for a transportable micro nuclear reactor.

In 2022, SCO selected BWX Technologies, Inc. of Lynchburg, Virginia to build a prototype micro reactor. This work is underway and long lead hardware fabrication has begun. By executing this contract option with X-energy, SCO seeks to develop a complementary micro reactor design that builds upon X-energy's developments completed under Project Pele in 2022. This option continues funding for X-energy to develop its design to meet the technical requirements of Project Pele, targeting a reactor design which is ready for licensing by the Nuclear Regulatory Commission (NRC) for both commercial ventures and military resiliency.

"Due to their extraordinary energy density, nuclear reactors have the potential to serve multiple critical functions for meeting resiliency needs in contested logistical environments," said Dr. Jeff Waksman, Project Pele program manager. "By developing two unique designs, we will provide the Services with a broad range of options as they consider potential uses of nuclear power for both Installation and Operational energy applications in the near future."

The DOD uses approximately 30 Terawatt-hours of electricity per year and more than 10 million gallons of fuel per day—levels that are only expected to increase due to anticipated electrification of the vehicle fleet and maturation of future energy-intensive capabilities. A safe, small, transportable nuclear reactor would address this growing demand with a resilient, carbon-free energy source that does not add to the DOD's fuel needs, while supporting mission-critical operations in remote and austere environments.

This contract option for one year of work by X-energy will not result in a completed engineering design, but will allow a thorough analysis of design options, leading to a Preliminary Engineering Design and initiation of a regulatory preapplication process.

"The Strategic Capabilities Office specializes in adapting commercial technology for military purposes," said Jay Dryer, SCO director. "By nurturing and developing multiple micro reactor designs, SCO will not just provide options for the military Services, but will also help jumpstart a truly competitive commercial marketplace for micro reactors."