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General Atomics Joins the Nuclear Energy Institute in Support of a Department of Defense Micro-Reactor Program

GA micro-reactor will build on decades of work on small reactors and advanced materials

San Diego, CA – October 4, 2018: General Atomics (GA) expresses its support for the Nuclear Energy Institute (NEI) report, “Roadmap for the Deployment of Micro-Reactors for U.S. Department of Defense (DoD) Domestic Installations,” released earlier today. The report lays out a clear path toward deploying small (<10 MWe) nuclear reactors at DoD installations in potentially as little as five years.

Both Congress and the DoD have identified energy security as a key issue for the U.S. Armed Forces. As the military becomes more reliant on advanced computing and networking for its mission-critical tasks, and moves toward the deployment of advanced weapons with large power demands, it has become critically dependent on resilient sources of electricity.

Yet, almost all DoD installations currently depend on grid power, which can suffer outages at any time. Backup electricity is provided by diesel generators that lack sufficient reliability and are themselves dependent on limited local fuel storage. In part because of these concerns, Congress has directed DoD and the Department of Energy (DOE) to study the possible deployment of small nuclear reactors no later than 2027.

Micro-reactors have the potential to supply clean, resilient, always-on electricity to U.S. military bases, particularly installations in remote areas of the U.S. that are dependent on outside fuel deliveries. Ninety percent of U.S. military installations have electrical loads that could be served by an array of four 10-MWe nuclear plants. These smaller plants could also provide heating, desalination, and other services where necessary.

Very small nuclear reactors can be factory-manufactured and assembled much more rapidly than large commercial nuclear plants. Also unlike larger plants, they can be developed and deployed in much shorter periods of time. As the NEI report explains, the first such system could be deployed domestically by the DoD in as little as five to seven years with sufficient funding and support, especially from DOE and the Nuclear Regulatory Commission.

GA is developing a mobile nuclear power supply that is truck/air shippable and would fit in a standard military shipping container. This modular, autonomous system has a load-following generating capacity of up to 10 MWe and a refueling period greater than 10 years. The design builds on GA’s six decades of experience in nuclear energy: designing and building 65 TRIGA® research reactors, the most successful reactor in history; building the Peach Bottom and Fort St. Vrain gas-cooled reactors in Pennsylvania and Colorado; and developing the EM² helium-cooled fast reactor design.

The compact power supply also leverages GA’s development of high-temperature materials and fuels that enable high performance, a high degree of safety, and protection against potential threats. Its autonomous features derive from GA’s integrated defense systems (e.g., unmanned aircraft missions) and supply of military hardware for power production, communications and mission control. GA will support the micro-reactor program with its decades of experience in successfully partnering with DoD on large defense contracts.

The use of very small nuclear reactors for resilient power in remote locations is an increasingly popular option also being examined by other nations. Both Canada and the U.K. have advanced government programs underway with the goal of deploying small reactors within the next decade.

***About General Atomics:** General Atomics pioneers advanced technologies with world-changing potential. We have been at the cutting edge of energy innovation since the dawn of the atomic age – for more than 60 years. GA’s scientists and engineers are advancing the frontier of scientific discovery across a comprehensive array of key energy technologies, and helping meet growing global demands through safe, sustainable, economical solutions.*

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