



## Micro-Reactor Pilot | FAQs | *\*Last Updated March 2025*

### GENERAL PILOT INFORMATION

#### **Q: What is a micro-reactor?**

A: Micro-reactors are advanced nuclear energy systems, which typically produce between 1-20 megawatts (MW) of electrical and/or thermal energy. Micro-reactors can safely produce both electrical and thermal energy for long intervals between refueling and can operate independently from the grid.

#### **Q: Why is the Department of the Air Force leading the pilot?**

A: The DAF strives to stay on the forefront of energy innovation and seeks state-of-the-art technologies that increase energy resilience and reliability to reduce the potential loss of critical mission capabilities due to power disruptions. The 2019 National Defense Authorization Act Section 327 requires DOD to report on a pilot program to provide resilience for critical national security infrastructure at its facilities and operate at least one licensed micro-reactor. To meet the intent of the NDAA requirement, the Department of the Air Force, in partnership with the Defense Logistics Agency-Energy Office released a Request for Proposal to contract with a commercial entity to site, construct, and operate a micro-reactor by December 31, 2027, and help provide resilient energy to national security infrastructure at DoD facilities.

#### **Q: Where will the pilot project be located?**

A: Eielson Air Force Base in Alaska is the preferred location for the pilot due to the existing infrastructure, Arctic and geostrategic location, critical mission resilience needs, and national security importance. The micro-reactor will augment the base's year-round energy needs for power and heat to increase energy resilience and reliability.

The Department of the Air Force is partnered with the Defense Logistics Agency's energy office to execute a 30-year power purchase agreement with a third-party developer who will license, own, construct, operate, maintain, and decommission the micro-reactor, delivering electricity and steam to Eielson Air Force Base property in exchange for Department of the Air Force's long-term purchase of the energy it generates. The micro-reactor will augment the electricity produced by Eielson Air Force Base's combined heat and power plant by producing up to 5 megawatts (MW) of electrical energy and provide variable amounts of steam heating.

#### **Q: What is the status of the micro-reactor pilot project?**

A: The procurement process is currently paused to allow for additional proposal review. Unanticipated milestone shifts have not halted our efforts, and the Department remains steadfast in our exploration of this innovative technology to assure resilience at mission critical locations and to meet evolving threats and challenges. Further questions about this ongoing and active procurement process should be directed to DLA at [DLAEnergyResilience@dla.mil](mailto:DLAEnergyResilience@dla.mil).

#### **Q: When will the reactor be online?**

A: The micro-reactor pilot was initiated in response to the Fiscal Year 2019 National Defense Authorization Act requirement to identify potential locations to site, construct, and operate a micro-reactor by the end of 2027. Ultimately, the timeline is dependent on the selection of a vendor, and construction will begin only after the selected vendor meets siting, permitting, and licensing requirements from the U.S. Nuclear Regulatory Commission.

### MICRO-REACTOR SAFETY

#### **Q: What are the key features of micro-reactors?**

A: As opposed to larger and more traditional nuclear energy power plants, micro-reactors are:

1. Factory-fabricated: All components of a micro-reactor can be fully assembled in a factory and shipped to a location. This eliminates complexities associated with large-scale construction and reduces capital costs.
2. Transportable: Smaller unit designs will make it easier to ship reactor systems by truck, shipping vessel, airplane, or railcar.
3. Inherently Safe: Micro-reactors feature inherent safety advantages like passive cooling systems that can function without human intervention or external power and are designed to withstand extreme conditions.

For more information about the Micro-Reactor Pilot and other Department of the Air Force Installation Energy initiatives, visit <https://www.eielson.af.mil/microreactor/> or contact [SAF.IEE.Micro-ReactorPilot@us.af.mil](mailto:SAF.IEE.Micro-ReactorPilot@us.af.mil).



### **Q: Will the pilot be subject to Nuclear Regulatory Commission (NRC) safety standards and inspections?**

A: The pilot will be licensed by the NRC. The Department of the Air Force will cooperate with the NRC to ensure the owner and operator strictly follows all safety standards imposed during the licensing process. The NRC oversees nuclear energy facilities from the time licensing applications are submitted, throughout the operation of the facility, and through the decommissioning process at the facility until termination of the NRC license. In addition to regulating reactor siting and construction, the NRC regulates reactor operations through a combination of regulatory requirements, licensing, and oversight, including inspections. For more details, see [NRC's FAQ](#).

### **Q: Is there a risk to installation staff, occupants, or the community?**

A: The NRC has developed stringent safety and occupational health standards for licensed nuclear facilities. The Department of the Air Force will strictly adhere to these standards, which have kept nuclear plant operators and communities safe in the U.S. for nearly 70 years.

Micro-reactors are designed to cool without the need for offsite power and without fuel damage. This significantly reduces the potential for accidents and risk to the installation or surrounding communities. As with all nuclear energy facilities in the U.S., the micro-reactor owner will be required to develop and test detailed emergency response plans to protect servicemembers and the public, which will be reviewed and approved by the Department of the Air Force and the NRC. Additionally, micro-reactors are much smaller in size than traditional large scale nuclear energy power plants, with smaller footprints, and less than 20MW of thermal output. No other existing small generating system can match micro-reactor reliability and operational flexibility, to include additional automatic safety features.

## **COMMUNITY ENGAGEMENT AND IMPACTS**

### **Q: How will the Department of the Air Force communicate program updates to the public?**

A: The Department of the Air Force is committed to frequent, clear, and transparent communication with local stakeholders, and has already engaged with Fairbanks North Star Borough, the Tanana Chiefs Conference, and the University of Alaska, among many other community groups throughout the pilot project. The Department of the Air Force utilizes the following channels to disseminate updated project information:

- [Eielson Micro-reactor Webpage](#): The micro-reactor webpage is the “one-stop-shop” for everything related to the pilot. The Department will regularly release updates and helpful materials on this webpage.
- [Council for the Alaska Micro-reactor Program \(CAMP\) Meetings](#): These meetings allow the Department of the Air Force to interact and strengthen relationships with key community stakeholders. Example stakeholders include local government leaders (Governor’s office, State Legislature, Alaska Department of Environmental Conservation, local Mayors), the Tanana Chiefs Conference, and the University of Alaska, among many other local leaders and community groups.
- [Town Halls](#): In August 2023 and August 2024, the Department of the Air Force, in partnership with the NRC, Department of Energy, Idaho National Laboratory, and Fairbanks North Star Borough held an inaugural Town Hall open to all community members. The Department of the Air Force will hold more opportunities for public engagement in the future.
- [Educational Outreach Videos](#): The Department of the Air Force published educational videos linked to the Eielson Micro-reactor Webpage to inform viewers of key project topics and explain how the micro-reactor pilot will contribute to Department of the Air Force’s energy resilience goals.
- [Newsletter](#): The quarterly newsletter will continue to directly communicate project updates. All newsletters are posted to the webpage as well.
- [Media Engagements](#): The Department of the Air Force plans to identify key media engagements to participate in to reach a wider audience with pilot project information.

### **Q: Have you engaged with industry for this pilot project?**

A: In 2022, the Department of the Air Force released its request for proposal (RFP) for a nuclear micro-reactor and hosted a two-day pre-proposal conference and site visit at Eielson Air Force Base with the help of DLA Energy. Industry representatives were able to ask questions about the RFP and tour relevant sites at the installation. Answers to questions are available as amendments to the RFP, which was closed on 31 January 2023. The Department of the Air Force will continue to engage with industry throughout the pilot project.



**Q: How will this project impact the coal industry?**

A: This project is not designed to disrupt the coal industry in the area. This is a new energy-generation asset, not a replacement asset. Its relatively small scale (5 MW) will also not disrupt coal plant demand. The Department of the Air Force recognizes the importance of the coal industry to the community.

**Q: What will the environmental impacts be of this pilot project?**

A: Thorough siting and environmental assessments will be conducted as part of the pilot evaluation process in compliance with National Environmental Policy Act (NEPA) requirements. The Department of the Air Force is coordinating closely with the Nuclear Regulatory Commission, Department of Energy, Air Force Civil Engineering Center/Environmental Directorate, and the Under Secretary of Defense for Acquisition and Sustainment to ensure environmental impacts are evaluated prior to a decision to proceed with the pilot. The NRC-led NEPA process will involve public meetings and coordination, and the NEPA document will be available for the public to review.

**Q: Will the project have disproportionate negative environmental impacts on Tribal and Indigenous communities?**

A: The Nuclear Regulatory Commission must evaluate the impacts to public health and safety, and the environment, as part of their licensing process, including allowing for clear, transparent, and on-going two-way communication on the pilot's progress with the communities and the Government. The public and Tribal communities will have several opportunities to voice any concerns, ask questions, and provide feedback throughout the process.

### OPERATIONS AND LOGISTICS

**Q: Has the type of reactor been selected yet?**

A: No, the reactor technology has not yet been determined and will depend on the vendor selected. The Department of the Air Force will continue to update the website and host community meetings to share updates, when available.

**Q: Will the reactor be connected to the commercial grid?**

A: No, the reactor will only serve the installation and will not be connected to the grid.

**Q: Who will operate the reactor?**

A: Well-trained, highly capable operators from the micro-reactor owner and licensed by the Nuclear Regulatory Commission will operate the reactor. These operators complete extensive training before being certified and continue training throughout the life of their license. Reactor operators will follow detailed written procedures and ensure safe operation of the reactor.

**Q: Is micro-reactor technology cost-effective?**

A: Alaska has high energy costs, and the Department of the Air Force is looking to change that by looking into all energy avenues that alleviate high costs. Micro-reactors are just one item on the Department's "menu" of energy options, which also includes geothermal, natural gas, battery storage, wind, solar, and others. The Department of the Air Force must first demonstrate the effectiveness of micro-reactor technology through this pilot before it can be scaled to potentially provide lower-cost energy across Alaska. This pilot program is an important pathfinder for regulatory and siting processes; successful completion of the pilot program will create lessons learned and best management practices, paving the way for similar future projects throughout Alaska and beyond.