**Press Release**

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**For Immediate Release:** April 27, 2018

# Secretary of Energy Rick Perry Announces $60 Million for U.S. Industry Awards in Support of Advanced Nuclear Technology Development

**WASHINGTON, D.C.** — Secretary of Energy Rick Perry announced today that the U.S. Department of Energy (DOE) has selected 13 projects to receive approximately $60 million in federal funding for cost-shared research and development for advanced nuclear technologies. These selections are the first under DOE's Office of Nuclear Energy's *U.S. Industry Opportunities for Advanced Nuclear Technology Development* funding opportunity announcement (FOA), and subsequent quarterly application review and selection processes will be conducted over the next five years. DOE intends to apply up to $40 million of additional FY 2018 funding to the next two quarterly award cycles for innovative proposals under this FOA.

"Promoting early-stage investment in advanced nuclear power technology will support a strong, domestic, nuclear energy industry now and into the future," said Secretary Perry. "Making these new investments is an important step to reviving and revitalizing nuclear energy, and ensuring that our nation continues to benefit from this clean, reliable, resilient source of electricity. Supporting existing as well as advanced reactor development will pave the way to a safer, more efficient, and clean baseload energy that supports the U.S. economy and energy independence."

The selected awards underscore the importance of the private-public partnerships engaged in by U.S. companies in order to share expertise needed to successfully develop innovative nuclear technologies. The projects will allow industry-led teams, which include participants from federal agencies, public and private laboratories, institutions of higher education, and other domestic entities, to advance the state of U.S. commercial nuclear capability.

This FOA covers three innovative funding pathways:

1. **First-of-a-Kind (FOAK)** Nuclear Demonstration Readiness Project pathway, intended to address major advanced reactor design development projects or complex technology advancements for existing plants which have significant technical and licensing risk and have the potential to be deployed by the mid-to-late 2020s.
2. **Advanced Reactor Development Projects** pathway, which allows a broad scope of proposed concepts and ideas that are best suited to improving the capabilities and commercialization potential of advanced reactor designs and technologies.
3. **Regulatory Assistance Grants**, which provide direct support for resolving design regulatory issues, regulatory review of licensing topical reports or papers, and other efforts focused on obtaining certification and licensing approvals for advanced reactor designs and capabilities.

As part of DOE's commitment to supporting U.S. industry through private-public technical partnerships for nuclear energy innovation, the Department is also announcing technical voucher

awards to U.S. companies selected under the Department's Gateway for Accelerated Innovation in Nuclear (GAIN) initiative.

The following two projects were selected under the FOAK Nuclear Demonstration Readiness Project Pathway:

- *Design and License Application Development for TRISO-X: A Cross-Cutting, High Assay Low Enriched Uranium Fuel Fabrication Facility* – X Energy, LLC (Greenbelt, MD). This project will develop the design and license application development for a fuel fabrication facility capable of handling high-assay, low-enriched uranium and production of U.S.-developed uranium oxycarbide (UCO) TRistructural ISOtropic (TRISO) particle based fuel elements required for the future fleet of advanced reactors. DOE Funding: $4,494,444; Non-DOE: $4,494,444; Total Value: $8,988,888
- *Phase 1 NuScale Small Modular Reactor FOAK Nuclear Demonstration Readiness Project* – NuScale Power (Corvallis, OR). This project will conduct design finalization activities and ensure supply chain readiness to meet a commercial operation date of 2026 for the first NuScale plant. DOE Funding: $40,000,000; Non-DOE: $40,000,000; Total Value: $80,000,000

The following four projects were selected under the Advanced Reactor Development Projects pathway:

- *Combining Multi-Scale Modeling with Microcapsule Irradiation to Expedite Advanced Fuels Deployment* – General Atomics (San Diego, CA). This work proposed by General Atomics aims to combine advances made in microstructurally-informed fuel performance modeling and simulation tools with a new microcapsule irradiation capability that can substantially reduce the schedule and cost burden associated with qualifying new fuel systems for commercial deployment.
  DOE Funding: $2,210,995; Non-DOE: $552,749; Total: $2,763,744
- *Modeling and Optimization of Flow and Heat Transfer in Reactor Components for Molten Chloride Salt Fast Reactor Application* – Elysium Industries USA (Clifton Park, NY). This project will develop the computational fluid dynamics models needed to simulate and optimize the flows of chloride molten salt fuel in a reactor vessel and heat exchangers for their Molten Chloride Salt Fast Reactor design.
  DOE Funding: $2,560,000; Non-DOE: $640,000; Total Value: $3,200,000
- *Establishment of an integrated advanced manufacturing and data science driven paradigm for advanced reactor systems* – BWXT Nuclear Energy, Inc. (Lynchburg, VA). This project will develop the ability to implement Additive Materials Manufacturing to the fabrication process for nuclear components and sub-components that will yield acceptable material structure and strength that can be accepted by the national code organizations and the regulator.
  DOE Funding: $5,400,000; Non-DOE: $4,415,000; Total Value: $9,815,000
- *Dynamic Natural Convection - Passive Cooling for the LWR Fleet* - NuVision Engineering Inc. (Pittsburgh, PA). This project proposes an engineered solution to mitigate the effects of loss of power to light water-based nuclear reactors and to remove decay heat from the reactor core, mitigating losses due to random equipment failures and severe accidents.
  DOE Funding: $ 2,999,657; Non-DOE: $749,914; Total Value: $3,749,571

The following two projects were selected under the Regulatory Assistance Grant pathway:

- *Resolving the Regulatory Issues with Implementation of Online Monitoring Technologies to Extend the Calibration Intervals of Process Instruments in Nuclear Power Plants* - Analysis and Measurement Services (AMS) Corporation (Knoxville, TN). This project will work with nuclear industry stakeholders and the regulator to develop guidelines for extending calibration intervals of transmitters using online monitoring technology.
  DOE Funding: $499,906; Non-DOE: $125,000; Total Value: $624,906
- *Pre-Application License Review of Silicon Carbide Composite Clad Uranium Carbide Fuel for Long-Life Gas-Cooled Fast Reactor Cores* – General Atomics (San Diego, CA). This project will engage the regulator to execute a pre-licensing review of a silicon carbide composite-clad uranium carbide fuel system for use in a gas-cooled fast reactor long-life core.
  DOE Funding: $380,655; Non-DOE: $95,164; Total Value: $475,819

DOE has selected five U.S. companies to receive GAIN technology development vouchers in this first review cycle. The companies selected and the DOE contribution to the cost-shared vouchers are Terrestrial Energy, USA in New York, NY ($500,000); Vega Wave Systems, Inc. in West Chicago, IL ($130,000); Oklo, Inc. in Sunnyvale, CA ($417,000); Urbix Resources, LLC in Mesa, AZ ($320,000); and ThorCon US, Inc. in Stevenson, WA ($400,000)

More information on the GAIN initiative awards can be found HERE. More information on the Office of Nuclear Energy and its programs can be found HERE.

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