



Nuclear AI Advisory, Research, and Managed Services



RTS | Nuclear Energy + AI Newsletter

The small reactor story is moving from broad theme to specific deals. Three developments in the last several weeks have made the SMR-and-AI convergence more concrete than the broader industry conversation has acknowledged.

NANO Nuclear and Supermicro have signed an MOU to explore how NANO's microreactor designs could power Supermicro's AI server infrastructure. Oklo, Los Alamos National Laboratory, and Nvidia are partnering on plutonium-bearing fuels, with AI accelerating the materials science and characterization work that has historically been one of the longest-lead inputs into advanced reactor licensing. And the University of Utah's TRIGA research reactor will produce electricity for the first time this summer to power what the university describes as a "mini AI data center" on campus.

Three different scales, three different mechanisms, one shared pattern. Small reactor developers and operators are being matched to specific AI workloads, and the pace of announcements is running ahead of the regulatory, licensing, and operational frameworks meant to support those matches.

That gap is where the most interesting work lives right now. We unpack each of the three stories below, then round up the research news and policy signals from the last few weeks. This issue runs long. We've been off the air for a stretch, and the news has not slowed.

RTS Research Team

Ready to talk, let's meet.

Momentum in the Field:

Industry Signals and the RTS Perspective

AI Compute Meets Atomic Power: NANO Nuclear and Supermicro Sign Pre-Deployment MOU

NANO Nuclear has signed a strategic MOU with Supermicro to explore pairing NANO's microreactor designs with Supermicro's AI server infrastructure. NANO's reactors are not yet operational, but the MOU is one of a growing set of pre-deployment agreements pairing microreactor developers with data center customers. AI electricity demand is outpacing what existing grid capacity can support in many regions, and microreactors are being positioned as one part of the answer.

RTS Perspective: Microreactors are entering the data center conversation faster than most operators expected. The deals that move from MOU to operating asset will be the ones where reactor developers, hyperscalers, and regulators align early on siting, licensing, and interconnection. The MOU stage is exploratory by design. The licensing pathway behind it is the harder problem, and it is where most of these announced partnerships will be tested.

[Read the Article](#)

Fuel and Compute: Oklo, Los Alamos, and Nvidia Partner on Plutonium-Bearing Fuels

Oklo has announced a partnership with Los Alamos National Laboratory and Nvidia to pursue AI-enabled research on nuclear fuel and supporting infrastructure. The focus is plutonium-bearing fuels, with science-based AI models supporting materials science, fuel performance modeling, and fabrication R&D. The collaboration brings advanced compute capabilities directly into national-lab fuel work and broadens the technical conversation around fuel forms for advanced reactors.

RTS Perspective: Fuel is one of the longest-lead constraints on advanced reactor deployment. Applying AI to candidate-screening and materials work this early in the cycle matters because it shortens the discovery and modeling timeline without bypassing the experimental, qualification, and licensing steps that still have to follow. The teaming structure is also worth noting. A private developer, a national lab, and a compute partner is the kind of multi-sector arrangement federal programs have been built to support.

[Read the Article](#)

First Watts from the TRIGA: University of Utah to Generate Electricity from a Research Reactor

The University of Utah's TRIGA research reactor will generate electricity for the first time this summer, in partnership with Elemental Nuclear Energy. TRIGA reactors have operated at universities for decades as training and research assets rather than power sources. The output will run what the university describes as a "mini AI data center" on campus. The scale is modest in absolute terms, but the framing is significant. An established research reactor is being modified to demonstrate the AI-power pairing at university scale.

RTS Perspective: University research reactors have always been training and research assets. Adding a small electricity-generation function to one is a meaningful demonstration, not a deployment in the commercial sense. Expect more demonstration projects like this one, and expect them to surface 10 CFR Part 50 licensing questions, especially around possession limits, fuel use, and authorized end-use of generated electricity, that have not been worked through for research-reactor electricity at scale.

[Read the Article](#)

Research News

- **DuctGPT cuts fusion alloy discovery from months to hours.** Ames National Laboratory has released DuctGPT, an AI tool that combines machine learning with physics-based modeling to predict alloys capable of withstanding fusion-reactor conditions. The work is funded under ARPA-E's CHADWICK program.
- **Texas A&M releases AROMA-GPT for advanced reactor monitoring.** The research tool integrates generative AI with a digital twin framework to provide real-time advisory output and decision support, with human operators retained in the control loop. Physics-based modeling and domain knowledge are explicitly part of the architecture. The tool is research-stage, not deployed in any operating reactor.
- **AtkinsRéalis and the Oxford Robotics Institute partner to bring AI-driven robotics into nuclear plants.** Systems will move from the Institute's labs through digital-twin simulation training before AtkinsRéalis integrates them into industrial-grade hardware for facility deployment. Initial use cases are hazardous-task automation, not safety-related control functions.

Other News

- **Argonne convenes inaugural AI STEM Education Summit.** Last fall, Argonne National Laboratory brought more than 180 educators and administrators together to discuss how AI is reshaping STEM industries.
- **PJM reopens interconnection queue with 220 GW filed, including 18 GW of nuclear.** Google's Tapestry AI tooling will support the 1–2 year review.
- **OECD NEA RegLab publishes first-cycle findings on AI use in real-time nuclear plant monitoring.** The regulatory conversation has moved past the theoretical stage.

What This Signals

The pattern across this issue is sharper than usual. Small reactors are no longer purely a long-horizon thesis. They are being specifically matched to a present-day load problem: AI electricity demand is growing faster than the grid can support it.

- Microreactor developers are signing pre-deployment agreements with data center hardware companies (NANO + Supermicro)
- Advanced fuel R&D is being accelerated with AI and HPC capabilities (Oklo, Los Alamos, Nvidia)
- A university research reactor will demonstrate small-scale electricity production for a campus AI workload (University of Utah TRIGA)
- Monitoring, materials, and physical operations are all picking up AI tooling at the research stage
- Regulators are starting to use AI on their own side of the table

The opportunity is large. The complexity is real. The organizations that lead will be the ones treating SMR deployment as a near-term execution challenge and integrating AI within nuclear standards, workforce models, and regulatory expectations from day one.

RTS continues to support this transition through research, advisory, and managed services grounded in nuclear reality. The work ahead is execution work. That is what we do.

— RTS Research Team

Schedule a meeting, today!

Raisun Technology Services, North America Offices, Division, HQ 00000, United States

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