



Nuclear AI Advisory, Research, and Managed Services



RTS | Nuclear Energy + AI Newsletter

Three developments in the last few weeks moved the nuclear-and-AI story from theme to specifics. The Department of Energy put real money behind AI on the critical path. The NRC said its own AI tools cut a four-year review to nine months. And a shelved small modular reactor came back, aimed squarely at data-center and campus loads.

Different corners of the industry, one pattern. Funding, regulation, and demand are lining up at the same time, and the pace of announcements is running ahead of the frameworks meant to govern them. That gap is where the interesting work lives right now.

We unpack the three stories below, round up the research and policy signals worth tracking, and close with what it all points to. This issue runs long. The news earned it.

RTS Research Team

Ready to talk, let's meet.

Momentum in the Field: Industry Signals and the RTS Perspective

AI Gets a Budget Line: DOE Backs Project Prometheus with \$60M and 32 Partners

The DOE awarded Project Prometheus a \$60 million Phase II grant over three years, matched by more than \$200 million in industry cost sharing. The 32-partner consortium, announced July 24, is coordinated by Idaho National Laboratory with Oak Ridge, Argonne, and Sandia, and includes X-energy, TerraPower, Oklo, NVIDIA, AWS, Microsoft, GE Vernova, and Westinghouse. The aim is to fold design, licensing, manufacturing, and operations into one continuous digital workflow, targeting a tenfold cut in design and licensing time, threefold faster manufacturing, and 50 percent lower deployment cost. AI agents would automate compliance documentation and safety analyses, manage legacy records with natural language processing, and run physics-informed models that compress analysis from days to hours.

RTS Perspective: This is the clearest sign yet that AI in nuclear is a funded program, not a pilot. Watch the workflow claims, not the headline dollars. A tenfold cut in licensing time only holds if the outputs are traceable and defensible to a regulator, and that is where these efforts are won or lost. The physics-informed models are real and already in use at the labs. The harder problem is the audit trail that has to travel with every result. Consortia this large move at the speed of their integration plan, not their fastest partner. We are watching how the digital record gets structured, because that decides whether the time savings survive contact with the NRC.

[Read the Article](#)

The Regulator Picks Up the Tool: NRC Says AI Cut a Four-Year Review to Nine Months

NRC Chief Data Officer Basia Sall told the ATARC Mission AI Summit on June 25 that a licensing review that once took four years was completed in nine months, well inside the 18-month target set by the May 2025 executive order on NRC reform. The agency built an internal tool, SimplifAI, on Azure OpenAI to draft regulatory documents and check them against precedent, then upgraded to version 2.0 after the first model was deprecated. NRC is also testing Anthropic's Claude, Azure OpenAI, and Google Gemini for limited use cases on public data, and is letting industry curate NRC public data for its own applications. Sall said that produces stronger submissions with fewer follow-up questions during review.

RTS Perspective: The regulator adopting AI matters more than any single developer doing so. When the NRC drafts against its own precedent with a tool, the bar for applicants rises. Well-structured, traceable submissions clear faster, and weak ones stand out more than before. The practical takeaway is that industry can curate NRC public data for its own models. Applicants who build submissions to match how the agency reasons spend less time answering follow-up questions. This is the audit-first posture we have argued for from day one. The nine-month number is striking, but the durable advantage goes to the organizations that treat the regulator's AI as a known reviewer and prepare accordingly.

[Read the Article](#)

A Shelved SMR Comes Back: Applied Atomics Revives BWXT's mPower for Campuses and Data Centers

Applied Atomics secured exclusive land-based rights to BWXT's mPower small modular reactor on June 17 and will re-engage the NRC to resume design certification. The mPower is a Generation III+ integral pressurized water reactor rated at 195 MWe and 575 MWth, with an integrated steam generator that removes primary coolant piping and the associated loss-of-coolant risk. It runs on standard low-enriched uranium with a refueling cycle of at least two years. Applied Atomics is targeting behind-the-meter and campus-scale deployments, citing projected U.S. demand growth of more than 300 GW by 2035 driven partly by data center construction. BWXT keeps the IP, manufacturing rights, and royalties.

RTS Perspective: Reviving a design with years of NRC interaction behind it is a different bet than starting clean. The mPower has a documentation history, and the value of this deal depends on how much of that record is usable today. Integral PWRs with no external coolant loops are a mature, defensible safety story, which helps in licensing. The behind-the-meter and campus framing is the right read of where near-term demand actually sits. The open question is schedule. Resuming certification is not the same as holding one, and the distance from an exclusive license to a construction permit is measured in years, not quarters. A proven light-water design pointed at data-center loads is a pragmatic path while newer chemistries mature.

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Research News

- **INL and NVIDIA target the Genesis Mission's Prometheus challenge.** The lab is applying generative AI, digital twins, and autonomous workflows, validated on its NRAD and MARVEL research reactors, to cut reactor deployment schedules by at least half.
- **LANL uses AI to decode nuclear forces from neutron-star data.** Los Alamos researchers applied machine learning to explosive neutron-star observations to sharpen models of the strong nuclear force, feeding better physics back into simulation.
- **Argonne details how AI makes reactors safer and smarter.** The lab published an overview of AI across anomaly detection, predictive maintenance, and plant operations, grounded in real operating data.

Other News

- **Oklo acquires precision manufacturer ARMEC.** The advanced-reactor developer brought precision manufacturing for its reactor and fuel programs in-house, a vertical-integration move aimed at controlling cost and schedule.
- **Deep Fission moves the Gravity reactor toward construction in Parsons, Kansas.** Deep Fission partnered with Day & Zimmermann on its Gravity reactor, one of the projects under the DOE Reactor Pilot Program.
- **TerraPower opens a UK regulatory review for Sodium.** The company established TerraPower UK Ltd. and began the review process for its sodium-cooled fast reactor abroad.
- **Terra Innovatum and Baker Hughes pair a microreactor with supercritical CO2 power.** An MOU integrates Baker Hughes sCO2 turbomachinery into the Solo microreactor design.

What This Signals

The pattern this cycle is money and machines arriving together. AI in nuclear is no longer a research demo. It is a funded effort with the DOE, the national labs, the largest SMR developers, and the hyperscalers pulling the same direction.

- Federal dollars now buy AI on the critical path, not around it (Project Prometheus).
- The regulator is using AI itself, which resets what a competitive submission looks like (NRC).
- Proven light-water SMRs are being pointed straight at data-center and campus loads (Applied Atomics, mPower).
- Developers are integrating vertically to control cost and schedule (Oklo and ARMEC).
- Physics work at the labs keeps feeding better models back into design and operations (LANL, Argonne, INL).

The opportunity is real and the timing is unusual. Funding, regulation, and demand rarely line up this cleanly. The organizations that win will treat AI adoption as a licensing and documentation discipline, not a technology purchase. Speed without traceability does not clear the NRC. Traceability at speed is the whole game.

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

RTS Research Team

Schedule a meeting, today!