



Nuclear AI Advisory, Research, and Managed Services

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AI Reaches the Reactor Floor

This cycle, generative AI moved out of the pilot deck and into operations, licensing, and dispatch.

RTS | Nuclear Energy + AI Newsletter

Three weeks ago the nuclear-AI conversation still lived mostly in slideware. It does not anymore. In the span of one cycle, an AI assistant grounded in NRC guidance shipped into operating fleets, a sodium-cooled reactor made its storage system the pitch to hyperscalers, the Department of Energy put a hard 10x target on AI-assisted licensing, and NuScale put nuclear-specific AI to work on its own engineering. The whole ecosystem gathered in Dallas for NECX to compare notes.

The common thread is not the technology. It is where the technology now sits: inside the regulated workflows that a control room, a licensing team, and a dispatcher have to defend. That is a harder place to operate than a demo, and it is exactly where traceability stops being optional.

Below are the signals we think matter most, each with the RTS read on what it means for the people who actually have to make it work.

RTS Research Team

Schedule a roadmap session

Momentum in the Field

Industry Signals and the RTS Perspective

Atomic Canyon Puts an AI Assistant Inside Nuclear Operations

NEUTRON BYTES · AUGUST 20, 2026

Atomic Canyon released NIVA, a Nuclear Industry Virtual Assistant built to let plant staff query operational records, NRC guidance, and technical standards in plain language.

It was developed with EPRI, INPO, and NEI, and runs on the company's Neutron platform and FERMI models trained on Oak Ridge's Frontier supercomputer. A Knowledge Assistant answers questions grounded in official standards, an Operating Experience Assistant searches historical industry events, and a Troubleshooting Assistant is in development.

Constellation Energy is among the first users. New backing came from NVIDIA and former Vanguard chief executive Tim Buckley.

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The value here is not the chatbot. It is that NIVA is grounded in NRC guides, licensing basis documents, and INPO operating experience, the same corpus a control room and a licensing team have to defend. An assistant that cites the source record turns "the AI said so" into a traceable answer an inspector can follow.

The build with EPRI, INPO, and NEI signals the industry wants a shared, auditable knowledge layer, not dozens of ungoverned pilots. Constellation as an early user tells you the near-term demand sits in operating fleets, where document volume is the daily tax, not only in new builds.

The open question is configuration management: who owns the model's knowledge cutoff, how updates get validated, and how a wrong answer is caught before it reaches a procedure. Human in Command™ is the right frame here. The assistant retrieves and drafts. A qualified human still signs.

Read the Article →

TerraPower Makes Molten-Salt Storage Its Pitch to Data Centers

TECHCRUNCH · AUGUST 19, 2026

TerraPower's Natrium plant pairs a 345-megawatt sodium-cooled fast reactor with a large molten-salt thermal storage system. The reactor runs flat while stored heat is drawn down to boost turbine output when demand spikes, so the plant can shape delivered power to a swinging data-center load.

Meta committed to eight Natrium plants in January 2026. A second plant is expected to break ground in 2027, and Bloomberg reported TerraPower plans to announce its first dedicated data-center project this year.

The first Natrium plant is already under construction in Kemmerer, Wyoming, which received NRC construction approval in March.

RTS PERSPECTIVE

The storage is the real story, and it is an operations story more than a reactor story. Sodium cores run best at steady output. Molten-salt storage lets the plant hold the reactor flat and shape power to a load that swings with training runs and inference peaks.

That decoupling is what makes a nuclear plant look dispatchable to a hyperscaler, and it is why an eight-plant commitment reads as credible rather than a press release. Schedule realism still governs: first concrete on a second plant in 2027 means meaningful megawatts land late this decade, so today's data-center deals are options on future capacity, not power now.

Buyers signing early are pricing certainty and queue position, and they will want contracts that guarantee storage performance, not just reactor availability. The audit question is the storage system's safety classification and how its controls tie back to the licensing basis.

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DOE's Project Prometheus Puts AI on the Licensing Path

NEUTRON BYTES · JULY 24, 2026

The Department of Energy launched Project Prometheus, a \$60 million, three-year program to apply AI across nuclear design, licensing, manufacturing, and operations. It carries more than \$200 million in industry cost-share and \$30 million in industry capital.

Idaho National Laboratory leads, with Oak Ridge, Argonne, and Sandia, inside a 32-partner consortium that includes X-energy, TerraPower, Oklo, NVIDIA, AWS, and Microsoft. The stated targets are a 10x acceleration in design and licensing, a 50 percent cut in deployment timelines and cost, and a 3x speedup in manufacturing and fuel fabrication.

The program is built around "human-in-the-loop" workflows for fuel fabrication and legacy document management.

RTS PERSPECTIVE

Two numbers set the bar: 10x on design and licensing, 50 percent on deployment timelines and cost. Those are the right targets, and also the ones the NRC will scrutinize hardest, because a faster application is worthless if the reviewer cannot trust how it was produced.

The phrase that matters is human-in-the-loop. AI that drafts a safety analysis or reconciles a legacy document set is useful, but every generated claim still has to trace to a qualified basis and a named reviewer, or it will not survive an audit.

For operators, the practical move is to build the evidence trail now, so that when these tools reach production the workflow already shows what the model saw, what it wrote, and who approved it. The federal money is real. The advantage goes to teams whose AI output is defensible on day one.

Read the Article →

NuScale Puts Nuclear-Specific AI to Work with NPX and Nuclearn

NUSCALE POWER · AUGUST 25, 2026

NuScale Power entered a strategic alliance with Nuclear Promise X (NPX) and Nuclearn to deploy nuclear-specific AI across engineering and knowledge management for its advanced reactor program.

The tools pair Nuclearn's AtomAssist platform with NuScale's engineering base and NPX's implementation work. In a proof of concept, the AI cut the time to find relevant information by as much as 80 percent while surfacing the right engineering methods and standards, with traceability back to controlled sources.

NuScale chief technology officer Jose Reyes framed it as purpose-built tooling that lets teams work faster while holding safety and quality standards.

RTS PERSPECTIVE

This is the pattern we expect to define the next two years. The 80 percent number will get the headlines, but the operative phrase is traceability back to controlled sources. A reactor designer lives and dies by configuration control, so an AI that retrieves from the current, approved engineering basis is useful, and one that cannot prove which revision it read is a liability.

Pointing this at an advanced reactor still in development is the right sequencing, because design and licensing is where document volume compounds fastest and where a clean audit trail pays off at the NRC.

The test now is governance in daily use: who validates the model's sources, how change control is handled when the design basis moves, and how a wrong retrieval gets caught before it lands in a calculation. Get that right and the speed is real. Skip it and the 80 percent becomes rework.

Read the Article →

RTS AT NECX 2026

Notes from the Floor in Dallas

RTS founder and Chief Nuclear Officer Sam Rieck was at the Nuclear Energy Conference and Expo in Dallas, August 24 to 27, hosted by the American Nuclear Society and the Nuclear Energy Institute. Three things he took away from the program:

- Regulatory modernization has moved from talk to practice. The NRC-modernization and "Regulatory Innovation in Practice" tracks made clear that licensing reform is now a working agenda, and the teams building defensible evidence trails today will move through it fastest.

- AI is consolidating around shared, governed tools. Sessions like "Software Qualification in an AI Era" and the NIVA project showed the industry converging on qualified, auditable AI rather than scattered pilots, which is exactly where the value holds up.

- Delivery and workforce are the binding constraints. Between the criticality demonstrations, the megaproject-execution track, and the workforce sessions, the message was that schedule and skilled trades, not reactor physics, will decide who deploys on time.

View the NECX program →

Research News

- Shine and GE Vernova put AI on material accountancy.** Their MAYER project tracks and measures nuclear material in real time, feeding a virtual digital twin for security and cost optimization, a concrete case of AI moving into safeguards rather than paperwork.

- NuScale and Paragon finalized a single-control-room protection design.** Paragon's Highly Integrated Protection System is set to let one control room support as many as 12 of NuScale's 77-MWe modules, a real test of how far instrumentation and control can consolidate.

- Argonne, Case Western, and Shine advanced fuel recycling.** The teams applied PACER's chemical separation to pull radioisotopes such as strontium-90 and americium-241 out of used fuel, work that matters for both waste posture and isotope supply.

- TerraPower Isotopes expanded its actinium-225 collaboration with PanTera.** Belgium's Institut des Radioelements will host a production line for the alpha-emitter, tightening the tie between advanced reactors and the targeted-therapy isotope pipeline.

Other News

- Applied Atomics secured exclusive US rights to BWXT's mPower SMR.** The company plans to resume NRC design certification for the technology across the US, Canada, and other territories, reviving a design with a long regulatory history.

- Rolls-Royce SMR locked in its European supply chain.** Skoda JS and Doosan Enerbility were selected as nuclear island component suppliers for deployments at Wylfa in Wales and Temelin in the Czech Republic.

- Energy Fuels won a conditional \$725 million DOD loan.** The 20-year loan from the Office of Strategic Capital backs a White Mesa Mill expansion, a sign the fuel-cycle build-out is now a national-security line item.

- Cameco and Orano Canada bought Tepco's 5 percent Cigar Lake stake.** The move consolidates ownership of one of the world's top uranium mines, which has produced more than 174.5 million packaged pounds of U3O8 since 2014.

What This Signals

Read these features together and a single thesis emerges. AI in nuclear has crossed from demonstration into the regulated workflow, and the winners will be decided less by model quality than by whether the output can be defended. An assistant that cites the record, a storage system that has to sit inside the licensing basis, and a federal program that insists on human-in-the-loop are all pointing at the same requirement: traceability is now the product.

- AI has moved from the pitch deck into operations, licensing, and dispatch, where it faces real inspection.

- Near-term demand sits in the operating fleet, where document volume is a daily cost, not only in new build.

- Data-center deals signed today are options on late-decade capacity, so schedule realism should temper the headlines.

- The NRC will judge AI-assisted work by its evidence trail, not its speed, so the trail has to be built in.

- The fuel cycle and safeguards are drawing federal capital, so AI advantage has to reach beyond the reactor itself.

This is the work RTS does. We help nuclear teams put AI where it earns its place, with the audit trail built in from day one and a qualified human in command of every decision that reaches a procedure or a submission. The measure is not how fast the model runs. It is whether the result holds up under review, and turns into a measurable AI advantage you can actually defend.

RTS Research Team

Put AI to work where it counts

One conversation. No pitch deck. We map where AI earns its place in your operation, and how to keep it audit-ready.

Schedule a roadmap session

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