



Nuclear AI Advisory, Research, and Managed Services



RTS | Nuclear Energy + AI Newsletter

RTS Nuclear AI Research Statement

At RTS, we spend our time in the field. In control rooms. In engineering offices. In procurement meetings. In conversations with compliance leaders and outage planners.

What we are hearing consistently is this: AI is no longer the question. Integration is.

Over the past year, many organizations have run pilots. Some were promising. Some were exciting. Some stalled. What separates the pilots that move forward from the ones that fade away is not the sophistication of the model. It is operating discipline.

At the Nuclear Business Innovation Council, we talked about this directly. AI must be embedded into the way work is actually performed. It must align with QA frameworks, outage schedules, capital planning cycles, and regulatory documentation. It must have ownership. It must have accountability. It must show measurable impact.

Since NBIC, we have seen these same themes surface in national publications, federal announcements, and national laboratory initiatives. That alignment tells us something important.

The industry is moving from experimentation to execution.

Below, we provide an overview of three recent developments and share the RTS perspective on what they mean for nuclear leaders.

Ready to talk, let's meet.

Momentum in the Field:

Industry Signals and the RTS Perspective

Why AI Pilots Stall Without Operating Discipline

Power Magazine highlights a challenge many utilities are experiencing. AI adoption is widespread, yet many pilots fail to scale. The article emphasizes that the issue is not technology capability but the absence of operating discipline.

AI efforts often lack clear ownership, integration into capital planning and reliability programs, and defined outcome metrics. Without embedding AI into the operating model of the utility, pilots remain isolated experiments.

The takeaway is straightforward. AI must be treated as an operational capability governed by leadership and tied to measurable reliability and cost outcomes.

The Raison Take:

This mirrors what we see across nuclear and utility environments.

When AI is layered on top of existing workflows without process ownership, it stalls. When it is integrated into outage planning, corrective action programs, procurement workflows, and documentation systems, it begins to deliver measurable value.

In nuclear environments, operating discipline is non-negotiable. AI must align with QA programs, safety culture, and regulatory traceability. Organizations that treat AI like infrastructure rather than innovation theater are the ones moving forward.

Read the Article

DOE Announces 26 Genesis Mission Science and Technology Challenges

The Department of Energy has launched 26 AI-driven challenges under the Genesis Mission to accelerate innovation across energy and national security sectors.

For the nuclear enterprise, Page 25 of the DOE material stands out. The section titled Streamlining Production, Removing Red Tape, and Ensuring Safety in the Nuclear Enterprise signals a clear federal priority: apply AI to licensing, compliance, production acceleration, and regulatory efficiency while preserving safety standards.

This is not speculative language. It is operational direction.

The Raison Take:

Page 25 speaks directly to where the industry must focus.

Streamlining production without compromising safety is the defining challenge of nuclear expansion. Whether supporting large reactors, SMRs, or supply chain modernization, AI must reduce administrative friction while strengthening oversight.

As RTS has noted, this federal framing confirms that AI in nuclear must operate inside the rule set, not around it.

Read the Article

Argonne Studies How AI Could Reshape Nuclear Regulation

Argonne National Laboratory is exploring how AI can support nuclear licensing, safety reviews, and plant monitoring. In collaboration with the Nuclear Regulatory Commission, AI systems are being evaluated through formal regulatory review processes.

Projects include automating regulator-developer exchanges to reduce licensing bottlenecks and deploying physics-based AI models paired with digital twins to detect equipment issues earlier.

The focus is structured validation. AI is being tested inside regulatory frameworks with oversight and traceability.

The Raison Take:

This is a meaningful development for the industry.

For years, leaders have questioned whether AI-supported workflows would be acceptable under regulatory scrutiny. Argonne's work demonstrates that the conversation has shifted from possibility to practical evaluation.

The requirement is clear. AI must be explainable, auditable, and human-supervised. General-purpose tools without nuclear context will not meet that standard.

Organizations that invest now in data hygiene, governance frameworks, and structured use-case design will be better positioned as regulatory expectations evolve.

The future of AI in nuclear will be shaped by discipline, not speed alone.

Read the Article

What This Signals

Across these three developments, the pattern is clear.

Utilities are acknowledging that AI requires operational integration. The federal government is accelerating AI modernization within the nuclear enterprise. National laboratories are validating AI under regulatory oversight.

The industry is moving from pilots to practice.

RTS will continue to support utilities, suppliers, and advanced reactor programs in integrating AI responsibly and measurably. Our focus remains on operational alignment, workforce enablement, regulatory readiness, and disciplined execution.

AI built for nuclear must strengthen the standards that define the industry.

If your organization is evaluating how to move from experimentation to sustained operational value, we are ready to engage.

Schedule a meeting, today!



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