



Nuclear AI Advisory, Research, and Managed Services



RTS | Nuclear Energy + AI Newsletter

The nuclear sector continues to move from experimentation toward execution. Artificial intelligence is no longer confined to productivity pilots or narrow use cases. It is now influencing reactor design, fuel management, licensing acceleration, and federal energy policy conversations.

What is becoming clear is that AI’s integration into nuclear energy is occurring simultaneously at three levels: national policy, laboratory research, and commercial deployment. Alignment across those levels will determine whether timelines compress responsibly or expand under governance strain.

RTS Research focuses on documenting this transition as it unfolds. Our work examines how AI is embedded within nuclear standards, engineering workflows, and regulatory environments where traceability, accountability, and human authority remain central. This issue highlights accelerating public-private partnerships and policy signals shaping the next phase of nuclear-enabled AI infrastructure.

Ready to talk, let's meet.

Momentum in the Field: Industry Signals and the RTS Perspective

National Acceleration: INL and Nvidia Launch Prometheus

Idaho National Laboratory and Nvidia have announced the Prometheus project, a public-private collaboration designed to accelerate nuclear deployment through artificial intelligence. According to INL, the initiative aims to cut reactor development timelines in half and reduce operational costs by 50 percent using AI across design, licensing, manufacturing, construction, and operations, all within human-in-the-loop workflows.

This represents one of the clearest signals yet that AI integration is moving beyond plant-level optimization into full lifecycle nuclear deployment strategy.

The Raisun Take:

This partnership reinforces a trend we are observing globally. AI is being positioned not simply as a productivity layer, but as an infrastructure accelerator. The challenge will be ensuring that speed and governance evolve together.

[Read the Article](#)

SMR Optimization: NuScale and ORNL Apply AI to Fuel Management

NuScale Power is collaborating with Oak Ridge National Laboratory through the DOE’s GAIN program to apply AI-driven modeling to fuel management in a 12-module SMR configuration. The study will assess whether sharing fuel across modules at a single site can reduce costs and improve overall plant efficiency.

Fuel optimization is traditionally a conservative, deterministic domain. Applying AI-based modeling to this area signals growing confidence in computational tools within advanced reactor deployment.

The Raisun Take:

Cost competitiveness in SMRs will hinge on operational efficiency as much as construction innovation. AI-enabled modeling in fuel management reflects a shift toward system-level optimization rather than component-level gains.

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Policy Signal: White House Meets with Big Tech on AI Power Demand

The White House will host leading data center and AI companies, including Microsoft, Amazon, Anthropic, and Meta, to finalize a pledge aimed at protecting households from electricity price increases tied to expanding AI infrastructure.

The proposal encourages companies to develop dedicated power generation capacity, though analysts note that enforceability and market structure, particularly within PJM Interconnection, will determine its impact.

The Raisun Take:

This meeting underscores a critical shift. AI-driven load growth is no longer just a market discussion. It is now a policy issue. Nuclear’s role in firm, dispatchable generation will increasingly sit inside federal and regional energy conversations.

[Read the Article](#)

In Other Developments

- **Argonne National Laboratory** has digitized 60 years of metallic fuel research and deployed AI tools to refine uranium-zirconium fuel design, shorten qualification timelines, and lower development costs.
- **Hyperscalers** including Microsoft, Amazon, and Meta continue expanding dedicated generation strategies to secure long-term power for AI infrastructure, further tightening energy planning timelines.
- **Clayco** has joined a consortium led by Deep Atomic to support DOE submissions for a proposed fully integrated nuclear-powered AI data center campus in the United States.

What This Signals

Across national laboratories, advanced reactor developers, hyperscalers, and federal policy circles, one pattern is emerging. AI and nuclear energy are no longer advancing in parallel tracks. They are converging into shared deployment timelines.

The question for nuclear organizations is not whether AI will influence the industry. It is how quickly and under what governance structure that influence will scale.

RTS continues to analyze these developments through the lens of operational integration, regulatory alignment, and workforce enablement. The organizations that lead this phase will be those that combine technical acceleration with disciplined execution.

— RTS Global Research

Schedule a meeting, today!

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