



Natura Resources MSR-1: Building the USA's only GEN IV research reactor

Test, Research, and Training Reactors 2026

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THE PROBLEM: The United States is Facing a Structural Power Deficit

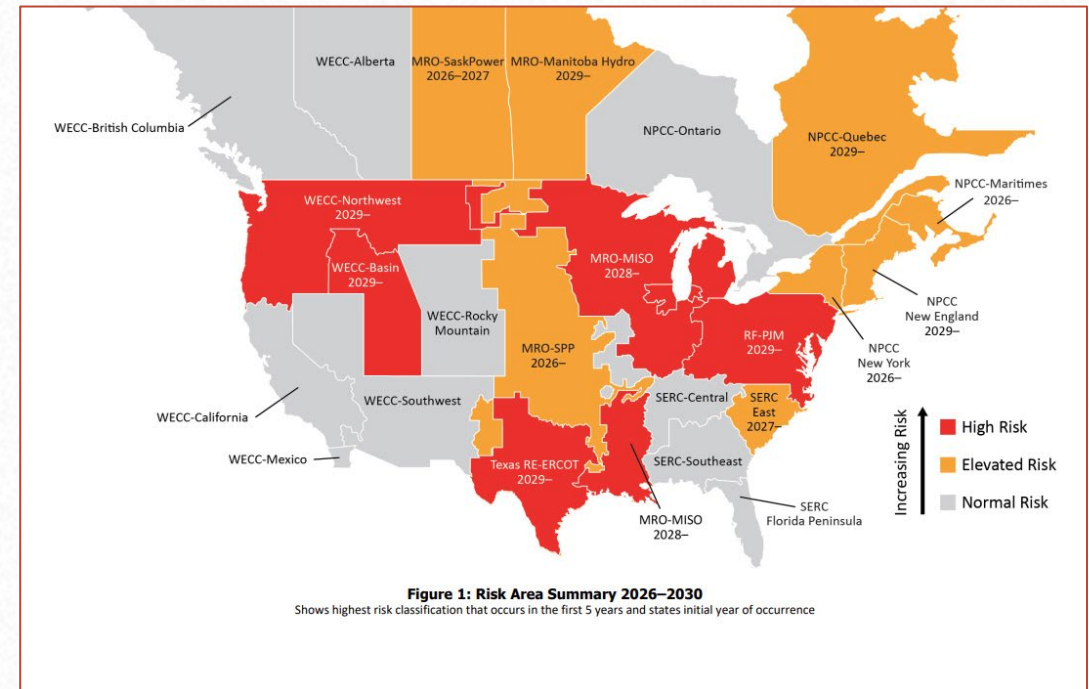
200+ GW
of demand
growth expected
over the next
decade (NERC)

Dispatchable
generation
retiring faster
than replacement
supply

AI/data centers,
electrification, and
industrial reshoring
accelerating
demand

~300 GW of new nuclear
capacity required by 2050,
70% over today's nuclear
output (DOE)

Texas moving to require data
centers to fully fund grid
infrastructure and contribute
new power capacity



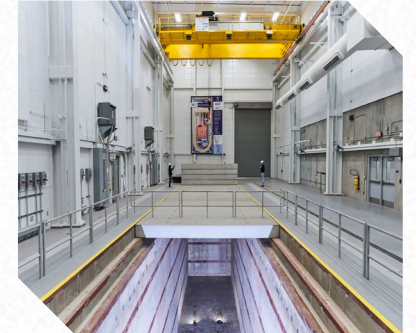
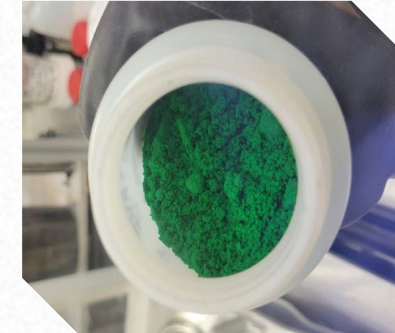
(Figure 1: [NERC LTRA 2025](#) – page 7)

THE RESULT: The U.S. economy cannot grow without firm, scalable generation.

NATURA'S TECHNOLOGICAL ADVANTAGE

Lower Cost and Safer Gen IV Reactor Design

- Liquid-fueled, molten salt reactor
- High-temperature, low-pressure
- Produces electricity + high-grade heat + medical isotopes
- Continuous, 24/7 operation
- Walk-away safe
- Enables revenue stacking across power, water, and medical isotopes



LOWER COST. HIGHER SAFETY. SCALABLE BY DESIGN.

Operational Advantages



Online refueling – no refueling outages



Up to 3x greater fuel efficiency
vs traditional reactors



High-temperature output (~600°C)
enables industrial process applications

Cost Advantages



Near-atmospheric pressure → reduced
materials and construction cost



Leverages existing oil and
gas fabrication capabilities



Scalability provides competitive LCOE
vs other nuclear and gas

Safety Advantages



Passive safety system
(liquid-fuel → no meltdown risk)



Chemically stable fuel retains
radioactive material

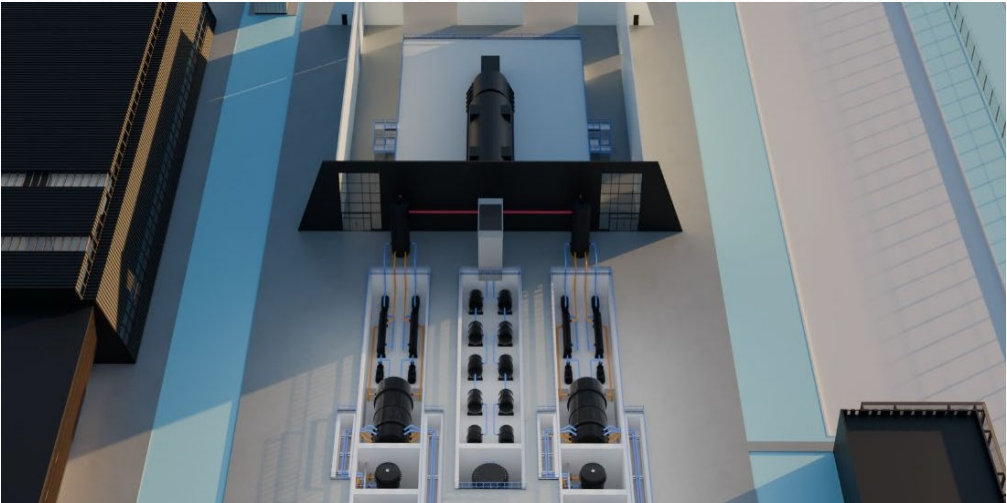


Minimal reliance on
operator intervention

DEMONSTRATION TO COMMERCIAL

MSR-100 Commercial Reactor

Power Level	250 MWth (100 Mwe)	License	NRC
Electric Output	100 MW _e , 12-pack 1GWe	Capacity Factor	>95%
Avg. Core Temp	600°C	Fuel (baseload) Fuel (refuel)	UF ₄ - 8% enriched LEU+ 19.5% enriched HALEU
Moderator	Graphite	Site Boundary	50 acres (12-pack) 5 acres (single unit)

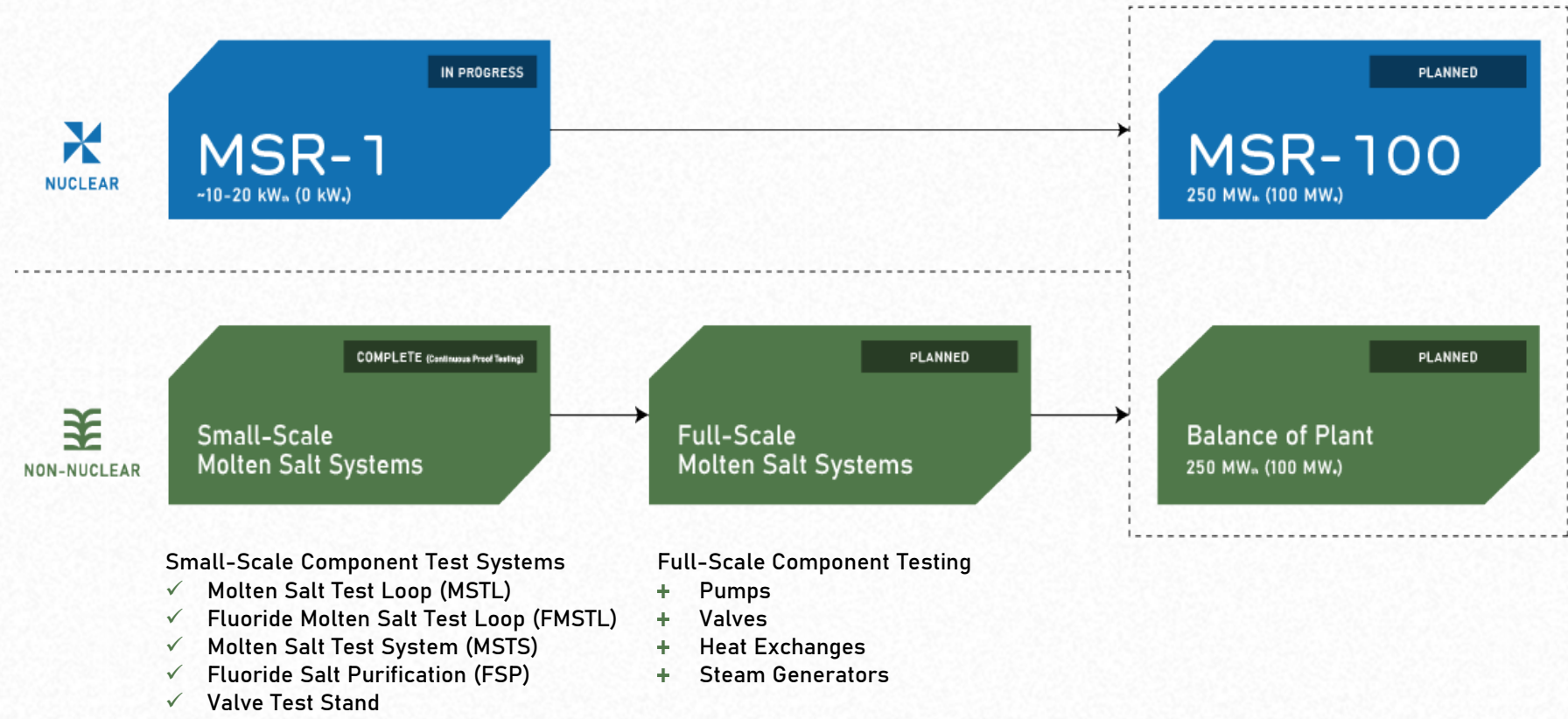


Rendering of MSR-100

ROADMAP TO COMMERCIALIZATION

Parallel Development of Nuclear and Non-nuclear Components

Enables the development and de-risking of technologies within the appropriate operating environment. Testing of full-scale systems outside of a nuclear reactor enables fast, iterative development, while necessary nuclear development can take place in the appropriate reactor environment.



DEMONSTRATION TO COMMERCIAL

MSR-1 Demonstration Reactor

Power Level	~10-20 kWth (0 kWe)	License	DOE
Avg. Core Temp	600°C	Fuel	UF ₄ - 19.5% enriched HALEU
Moderator	Graphite	Location	Abilene Christian University (ACU)



Completed MSR-1 facility at Abilene Christian University (ACU)



FliBe Salt Delivered via Oak Ridge National Lab, Department of Energy, and Idaho National Lab

NAUTRA RESOURCES RESEARCH ALLIANCE

A Coalition Model for Reactor Development

- Natura believes advanced nuclear deployment requires more than a single company. It requires an ecosystem.
- Established in 2020, the Natura Resources Research Alliance brings together leading universities, researchers, engineers, and testing facilities to support reactor development, workforce training, materials research, chemistry programs, and technology validation.
- Rather than building every capability internally, Natura leverages a network of specialized institutions to accelerate development and strengthen execution. Together, these institutions strengthen and accelerate Natura's path to commercialization.



MSR-1: FACILITATING ENERGY SECURITY

Natura is building a 20-year research asset

Natura's MSR-1 is more than a criticality test. It is meant for...



Demonstration

The purpose of a demonstration reactor is to demonstrate to investors, regulators, and the general public that the technology meets Natura's stated goals.



Research

- Research reactors exist to facilitate the evolving scientific mission enabled by nuclear power
- Almost every research reactor is used as a neutron source
- Research reactors also exist to facilitate education



Workforce Development

The MSR-1 will serve as a tool for the Natura Resources Research Alliance to help train the next generation of nuclear workforce.

MSR-1: Demonstration and Research Reactor

The demonstration mission of the Natura MSR-1 is unique.

The MSR-1 is embracing modular design principles, in contrast to the historical MSRE build

There are no irradiation positions

The MSR-1 will focus on what makes the MSR-1 unique, the fuel salt and off-gas

Successful deployment of the MSR-1 demonstrates Natura's ability to execute a technically complex project given budget and financial restraints.



MSR-1: Demonstration and Research Reactor

Demonstration

- The Natura MSR-1 incorporates many components for the MSR-100. Components will be monitored for performance and degradation. Incomparable experience will be gained by servicing and maintaining these components.
 - Rotating equipment such as pumps and compressors
 - Passive equipment such as filters, traps, pressure transducers, thermocouples
 - Active equipment such as valves, especially salt wetted valves
- Operator training for subsequent Natura MSRs
 - Our team includes former operators with naval and commercial experience



Research

- Fission Product Behavior in the MSRE
- Large uncertainties around composition of the off-gas stream
 - Crucial for defining a source term in the event of a primary boundary failure
- Noble metal plate out on the heat exchangers
 - Servicing, handling, thermal performance concerns
- Are existing technologies for sequestering tritium and other radionuclides satisfactory?
- The specific combination of materials (316, graphite, LiF-BeF₂-UF₄, fission products) has never been demonstrated in a flowing loop.

MSR-1: Demonstration and Research Reactor

Demonstration

- The Natura MSR-1 is a long term asset.
- Operator training and component testing ensure the facility will be useful for decades, supporting Natura's commercial reactor fleet.



Research

- Modern benchmarks for licensing tools
 - Reactor physics benchmark (zero power keff, reactivity coefficients, control rod worths)
 - Transient behavior benchmark (delayed neutron dynamics, thermal feedbacks)
- Education
 - Hands on experience operating a simplified advanced reactor
 - Leverage Natura Resources Research Alliance
- Fuel salt chemical analysis and separations
 - Analytical techniques to measure fuel salt composition (major constituents and impurities), redox potential
- Samples of metallic materials may be removed during maintenance period to understand corrosion
- Fuel salt redox control
 - Purification and online beryllium addition (derived from MSRE)

MSR-1: Demonstration and Research Reactor

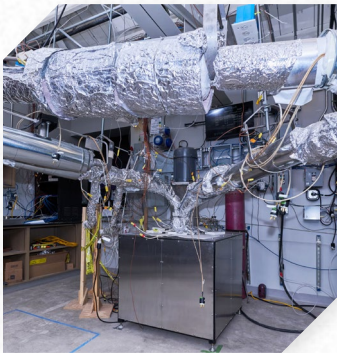


Capabilities (partial list)

- Component testing
 - All moving equipment (pumps, fans, drives, valves) is removable
- Automated Fuel Salt sampler
 - Samples are withdrawn from the reactor during operation and packaged into a storage cask without human interaction
- Coupons
 - Metallic material coupons are exposed to the fuel salt during operation
 - New coupons may be added
- Fuel salt chemical analysis
 - Gamma spectroscopy, LIBS, ICP-MS, IGF, electrochemical sensors
- Gas characterization
 - Gamma spectroscopy, LIBS, GCMS, PING, UGA
- UF_4 and beryllium addition
- H_2 and HF bubbling

TRACTION & MILESTONES: Permitted, Funded, and Advancing to Deployment

Founded in 2019, Natura has compressed decades of nuclear progress into seven years of disciplined execution.



2020

Natura Resources begins developing conceptual MSR design and NRC construction permit application



2022

Submitted NRC construction permit application (with ACU)



2023

Construction of demonstration reactor facility completed (ACU)



2024

Received NRC-approved construction permit application (ACU)



2025

Secured \$120M+ from the State of Texas; Selected for DOE Advanced Reactor Pilot Program and received commitments for HALEU fuel and molten salt



2026

Advanced long-lead item procurement and detailed engineering design; Natura received FLiBe salt from Oak Ridge National Laboratory, Executed agreement with NGL Water Solutions Permian LLC.