



NRIC National Reactor
Innovation Center

Welcome To The NRIC Program Review & Advanced Nuclear Technology Summit



NRIC

National Reactor
Innovation Center

Nuclear Energy Launch Pad

Accelerating the Path from Concept to Deployment

May 6, 2026

Brad Tomer

Director
National Reactor Innovation Center
Idaho National Laboratory
Brad.Tomer@inl.gov

U.S. Department of Energy (DOE)
National Reactor Innovation Center (NRIC)

Nuclear Energy Launch Pad Building on Pilot Program Success

Purpose

- Fast-track the testing of advanced nuclear technologies
- Strengthen domestic nuclear infrastructure

Scope

- DOE Authorization
- Advanced nuclear technologies
- Federal & non-Federal sites

Requirement

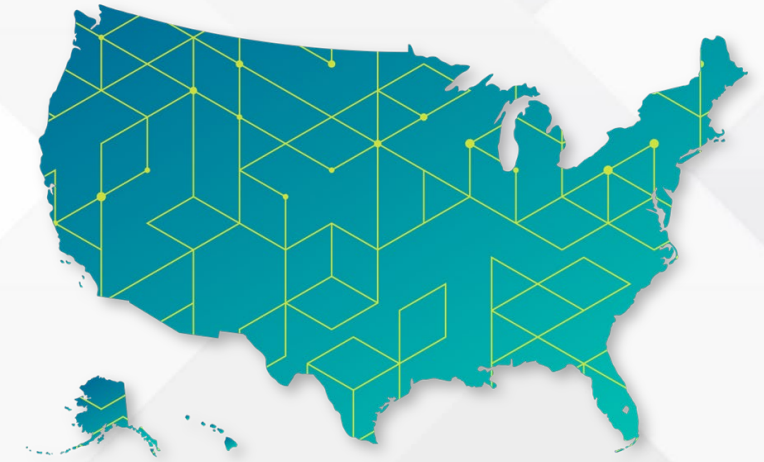
- Applicants bear life cycle cost of project
- Must be based in United States

Collaboration

- NRIC/INL, DOE-ID, NE-4, NE-5, NRC, National Laboratories, and Universities

Two Pathways

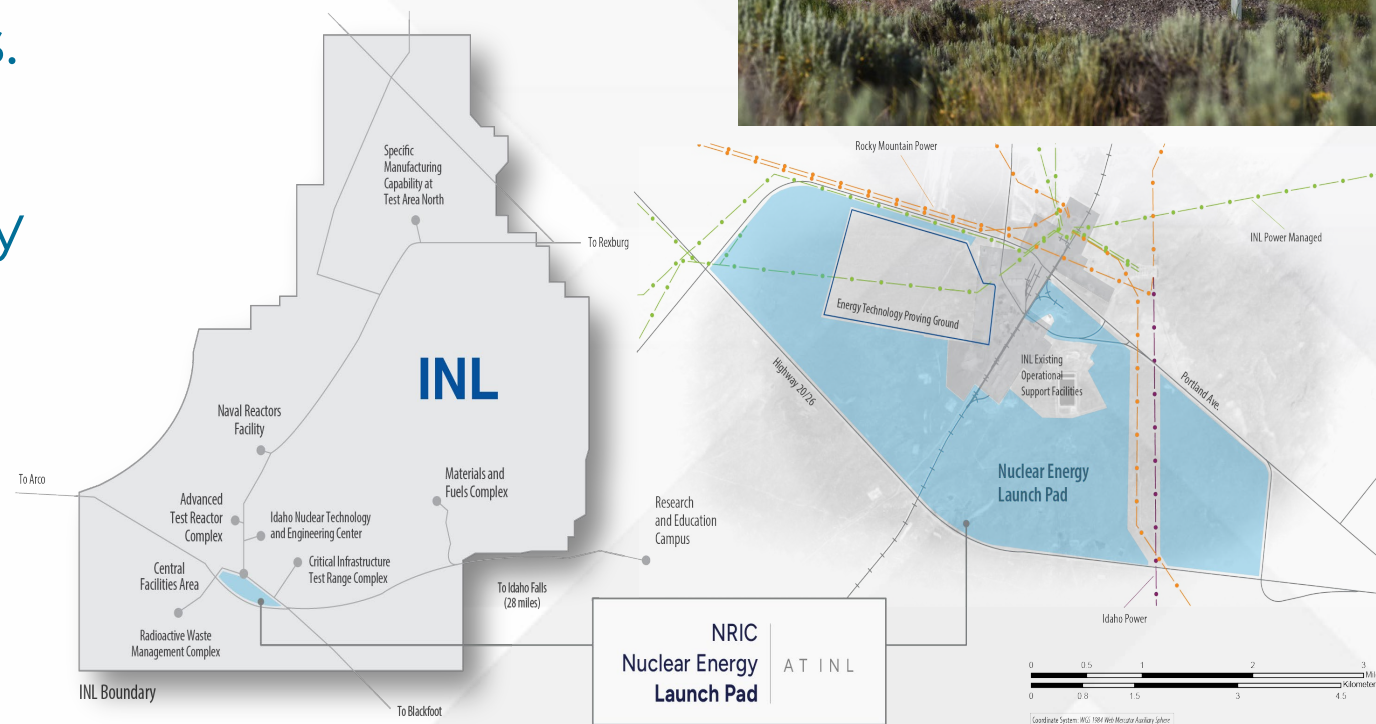
- Launch Pad Idaho National Laboratory
- Launch Pad United States of America





Launch Pad INL

- ~2,000-acre site at INL reserved for advanced nuclear demonstrations.
- Located near INL's Engineering Technology Proving Ground
- Offers proximity to infrastructure, proven regulatory pathways, and access to INL's world-class nuclear expertise





Launch Pad U.S.A

- DOE-authorized deployments outside INL, at other DOE or non-federal sites.
- Offers flexibility to site across US, priority DOE authorization, and remote access to INL expertise



Launch Pad Pathway Comparison

INL

LAUNCH PAD USA

Primary Purpose	Centralized demonstration site at Idaho National Laboratory	Distributed demonstration sites across the United States
Siting Location	Idaho National Laboratory	Any suitable U.S. location outside INL
Land Availability	Dedicated land reserved for technology siting	Developer-identified or partner-provided sites
Site Characterization	Well-characterized sites with existing environmental and safety data	Site characterization dependent on selected location
Infrastructure & Services	Shared infrastructure, facilities, and services through co-location	Infrastructure varies by site; not shared through INL
Access to INL Expertise	Direct, on-site access to INL staff and facilities	Remote or project-specific access to INL expertise
DOE Authorization	Prioritized access to DOE authorization processes	Prioritized access to DOE authorization processes
NRC Licensing	Enables pathway to NRC licensing of projects	Enables pathway to NRC licensing of projects
Flexibility	Standardized, controlled environment	High flexibility to leverage unique regional or project-specific advantages
Ideal Use Cases	First-of-a-kind demonstrations, multi-project co-location with shared services, rapid access to infrastructure	Projects requiring unique siting conditions, partnerships, or regional advantages



Roles & Responsibilities

DOE Office of Nuclear Energy

- Provide overall program direction and authority
- Oversee Concierge Team*
 - Developer resource comprised of senior leaders to deconflict and remove barriers
- Approve Project Selections

DOE-Idaho

- Provide Regulatory Authority
- Manage Other Transactional Authority (OTA) Agreements
- Approve Launch Pad Project Selections

* For information regarding concierge team
Contact Brad Tomer at brad.tomer@inl.gov

National Reactor Innovation Center

- Organize the Launch Pad Program
- Build integrated project teams to support Launch Pad developers
- Coordinate with National Labs and Universities
- Develop, issue, and manage Request for Applications
- Provide Technical Program Manager for each project
- Issue Strategic Partnership Project with Developer
- Develop and manage website and communications

Developer

- Technology development and overall project execution
- Funding for project and for cost incurred by NRIC and any additional support needed for DOE Authorization



Resource Center Upcoming

Subject Matter Experts List UNIVERSITIES

- Annual survey distributed to gather contact information, expertise areas, and experience
- Results will be used to develop an SME database for future collaboration

Capabilities and Siting Opportunities NATIONAL LABS

- Lab factsheets that contain information about facilities, capabilities, and points of contact

Subject Matter Experts/Capabilities/Site Information IDAHO NATIONAL LABORATORY

- Interface agreement templates; Siting & regulatory checklists; Menu of services; SME list

NRIC National Reactor Innovation Center

Home About Us Testing Capabilities Initiatives Industry Accomplishments Events Resources

JOHN DOE

CONTACT

Bio

John Doe is a distinguished expert in nuclear reactor physics with decades of experience advancing the science and safety of nuclear energy systems. His work spans theoretical reactor design, neutron transport modeling, and the development of next-generation reactor technologies.

Throughout his career, John has contributed to groundbreaking research in reactor core analysis, thermal hydraulics, and fuel cycle optimization. He has collaborated with leading national laboratories, academic institutions, and energy organizations to push the boundaries of what is possible in clean, reliable nuclear power generation.

John holds advanced degrees in nuclear engineering and physics, and has authored numerous peer-reviewed publications that have shaped modern understanding of reactor behavior under both normal and transient conditions. He is a sought-after speaker at international conferences and has advised government agencies and private industry on nuclear policy and reactor safety standards.

Beyond his research, John is deeply committed to educating the next generation of nuclear scientists and engineers. He has mentored dozens of graduate students and early-career professionals who have gone on to make their own significant contributions to the field.

When he is not in the lab or lecture hall, John is an advocate for science communication, working to demystify nuclear energy for the general public and promote evidence-based energy policy.

Education
Science University, Physics State University

Certifications / Licenses
Science Expert

Affiliation
Science Expert

EXPERTS LIST

Click a subject matter

Subject Matter Expertise	Company	Name
Accelerator Science, Decommissioning, Nuclear Fuel Cycle, Nuclear Maintenance Engineering	Apple	Joselyn Hanson
Accelerator Science, Decommissioning, Nuclear Fuel Cycle, Nuclear Maintenance Engineering	Microsoft	Brad Turner
Nuclear Fuel Cycle, Decommissioning, Advanced Reactor Design	Amazon	Joselyn Hanson
Research Reactors, Waste Management, Space Nuclear Power	NRIC	AnnMarie Marshall



Launch Pad Initial Participants Announced April 27, 2026



DEPLOYABLE.*energy*



Request for Applications Released April 29, 2026

April 29 - *Open for Applications*

MAY 19 - *Virtual Industry Day (Registration on NRIC website)*

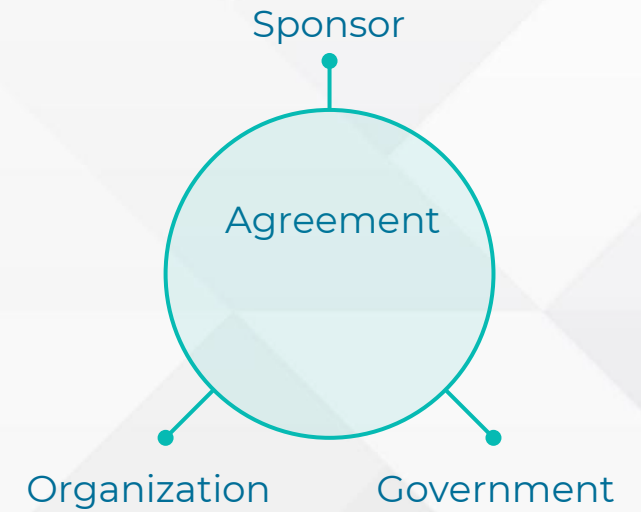
July 8 - *Receive and begin evaluations of applications*

- DOE/NRIC SMEs provide technical and readiness reviews
- Submit evaluations to DOE for approval

JULY-AUGUST *Selections announced and TPM assigned*

- Initiate agreement negotiations with Sponsors
 - Other Transactional Authority (OTA) – DOE-ID (DOE Contracts)
 - Strategic Partnership Project (SPP) – NRIC/BEA (Assigned TPM)
 - Other Local, State, Federal Agreements (as required) – (Developer responsibility)

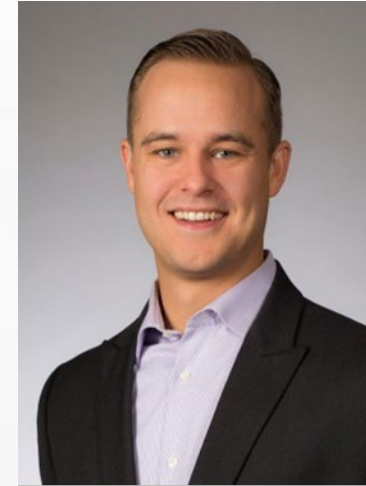
RFA will remain continuously open after this initial release and evaluations will commence at a regular cadence.



NRIC Points of Contact

General Information

- Chris Turner, Technical Program Manager
 - Christopher.Turner@inl.gov
- Adrian Collins, Deputy Director
 - Adrian.Collins@inl.gov



Chris Turner



Adrian Collins

Application Information

- AnnMarie Marshall, Configuration Mgmt Lead
 - Ann.Marshall@inl.gov
- Sam Reiss, Department Manager
 - Samuel.Reiss@inl.gov



AnnMarie Marshal



Sam Reiss



NRIC National Reactor
Innovation Center

DEPLOYABLE.energy

Deployable Energy Launch Pad

Program Update
05/06/2026





Deployable Energy Launch Pad

- Deployable Energy has been chosen to participate in the DOE's Launch Pad program
- The Launch Pad program allows Deployable Energy to have a systematic approach for testing and demonstration leading to validating commercial use-cases
- Multiple scopes will be executed under Launch Pad INL and Launch Pad USA

Launch Pad USA

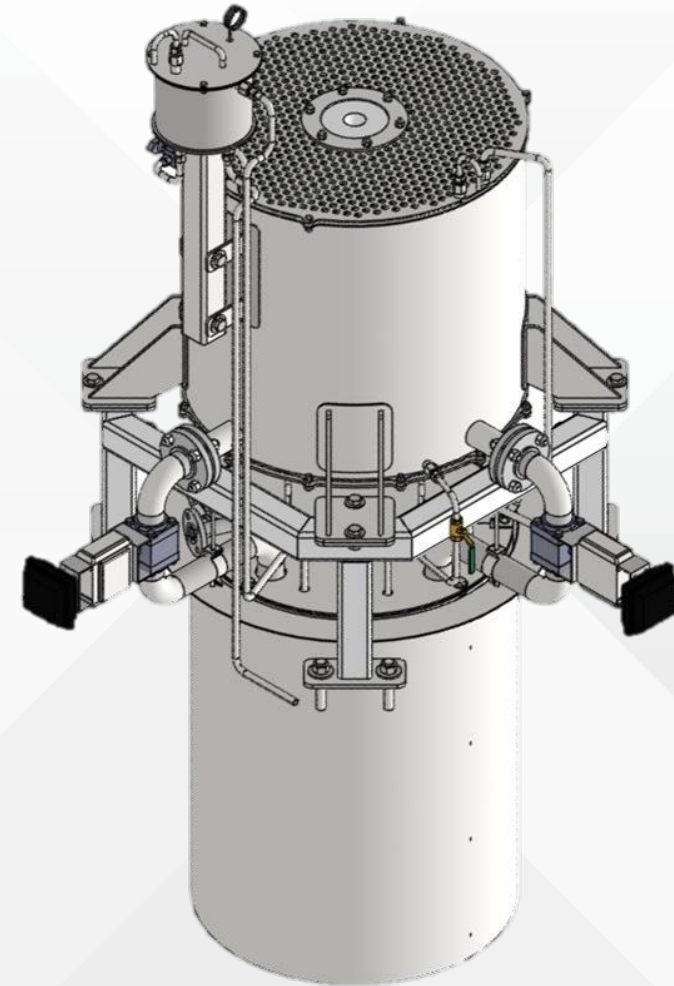
- Maritime Demonstration
- Reactor Co-located at Houston Facility

Launch Pad INL

- Full Power Reactor Demonstration
 - NRAD

Launch Pad INL

- Full Power Reactor Demonstration
 - Currently working on the UNITY 4th of July Criticality Demonstration
 - This will be followed by multiple follow-on experiments:
 - Hot Criticality Test
 - Decay Heat Test & Off Nominal Testing
 - Reactivity & Thermohydraulic feedbacks
- A full power demonstration will be executed within the NRAD executed under Launch Pad INL



Launch Pad USA

- Reactor Co-located at Houston Facility
 - Deployable Energy proposes constructing a reactor facility at its Houston headquarters to supply power to its assembly operations..
 - Initial deployment under DOE authorization, with a planned transition to NRC licensing for commercial operation.
 - Demonstrates an end-to-end energy solution—integrating reactor deployment, facility operations, and on-site power generation.



Launch Pad USA

- Maritime Demonstration
 - Deployable Energy's UNITY Nuclear Battery has a form factor and output profile well-suited for a variety of maritime applications.
 - Demonstration objective: operate a maritime vessel within U.S. waters powered by a nuclear battery system
 - Validate performance, safety, and operational requirements in a real-world maritime environment while showcasing zero-emissions propulsion

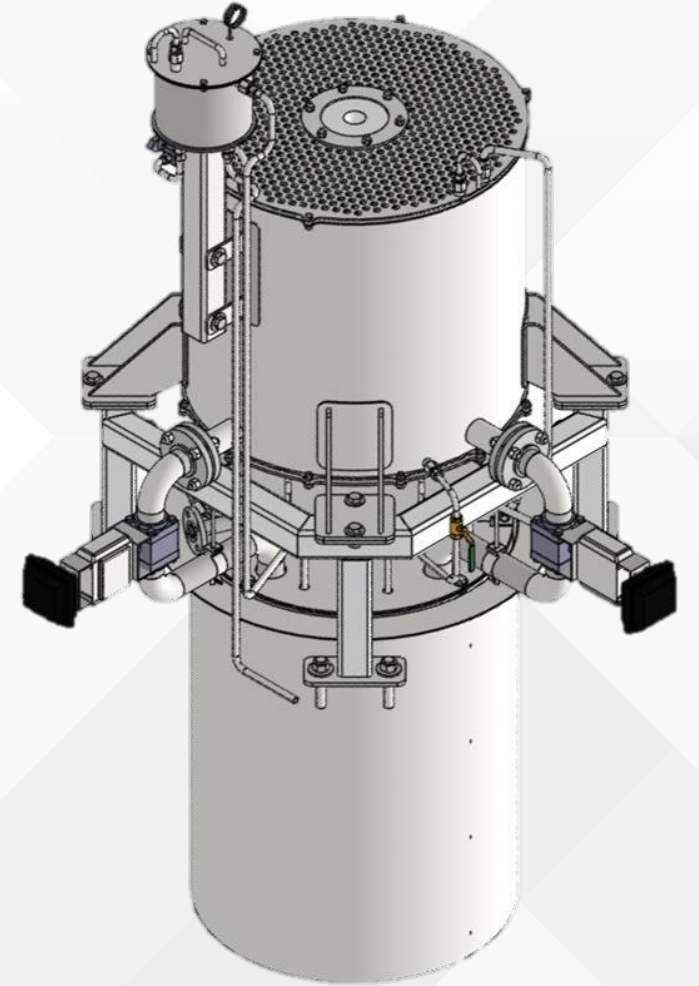




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DEPLOYABLE.energy



5/13/2026

www.nric.inl.gov



RADIANT

KALEIDOS

**LAUNCH
PAD**

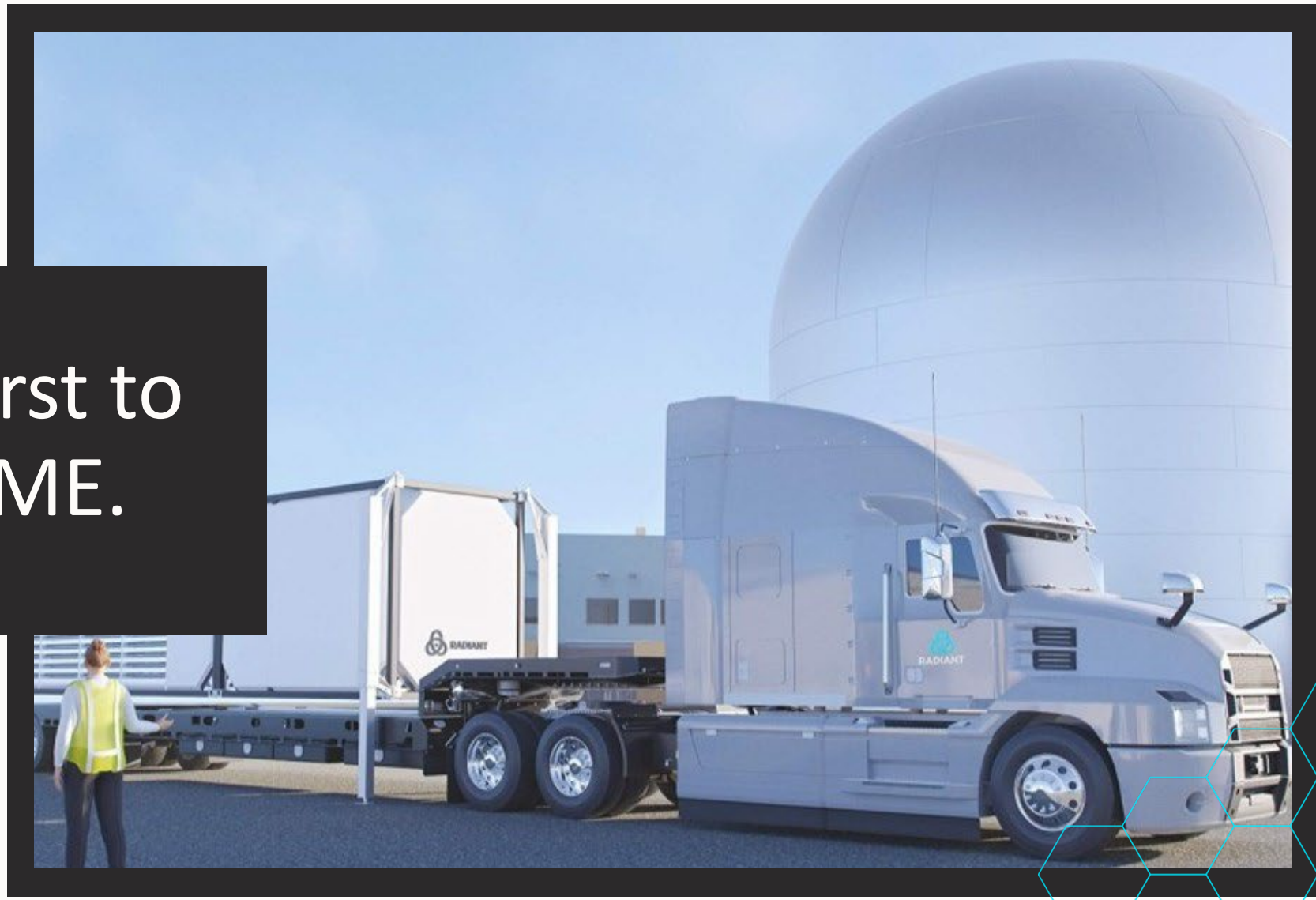
NRIC PROGRAM MEETING

MAY 6, 2026

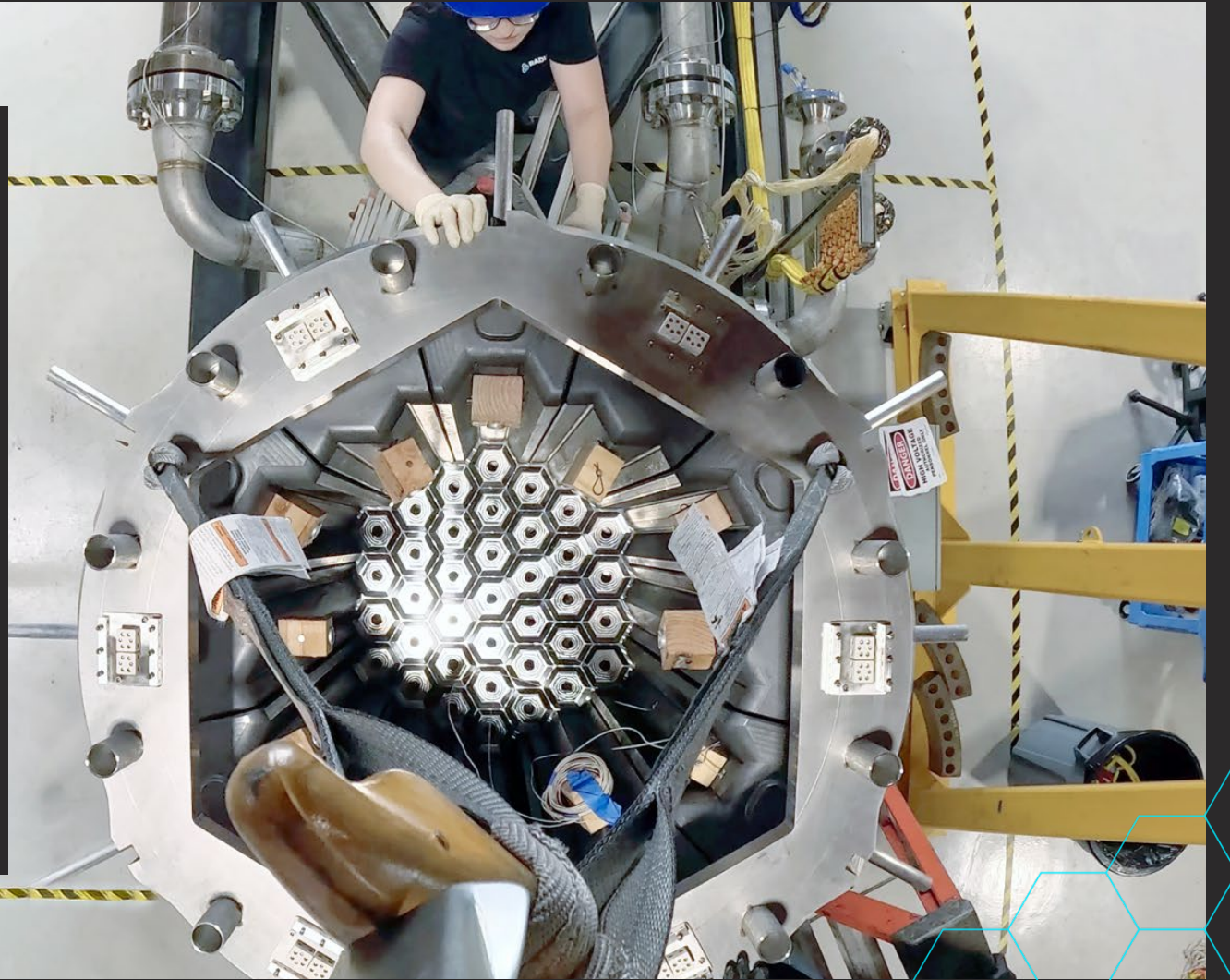
KALEIDOS



We're the first to
test in DOME.



We're building the
world's first
portable, mass-
produced
microreactor.





RADIANT

**MICROREACTOR
FACTORY**

R-50



Radiant Owned Land

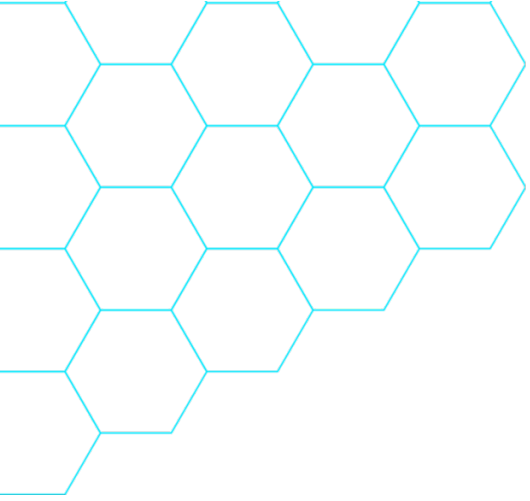
DOE Land
Awaiting Transfer

OAK RIDGE SITE



K-27

K-29



[Click Here to Watch](#)

R-50

FUELING FACILITY





RADIANT



Radiant



@RadiantNuclear



Idaho State
University

ISU-NuCube Advanced Research and Test (ART) Reactor Project

FY2026 NRIC Program Review
May 6, 2026

ROAR



Introduction

Idaho State University

- Main campus in Pocatello, ID; satellite campuses in Idaho Falls, Twin Falls, and Meridian
- State-designated school for health sciences and nuclear energy
- Only Idaho university to offer full range of degrees in nuclear engineering (B.S., M.S., Ph.D.) & nuclear operations (A.S.)
- Operates NRC-licensed AGN-201 for training and research purposes (since 1965)



Introduction



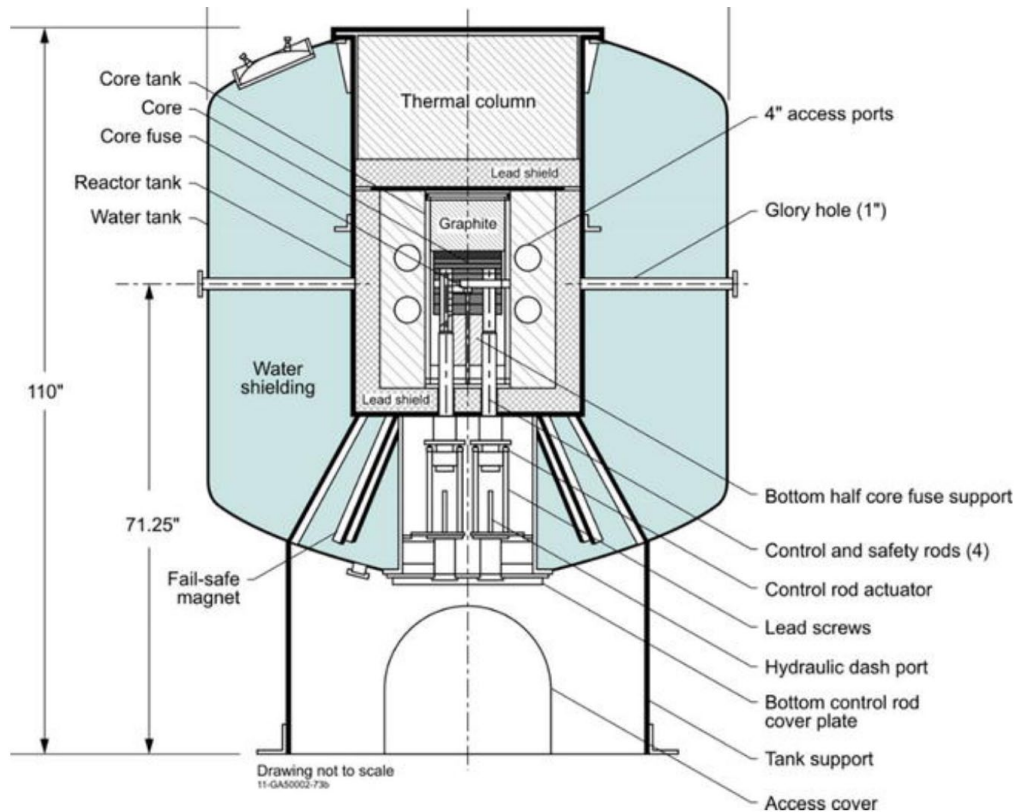
- Founded: April 2023
- Based in Idaho Falls, ID
- Two microreactor designs
 - ~1.3 MWe
 - ~15 MWe
- Temperature above 1,000°C
- Simple design with drastic reduction of moving parts
- Targeting costs competitive with current technologies for electricity and heat production



Motivation

- The ISU-NuCube Energy partnership will build the Advanced Research & Training (ART) Reactor Facility
- The motivation behind this partnership involves three critical aspects:
 - Provides academic opportunities
 - Enables workforce development
 - Demonstration of novel technologies coupled to an advanced reactor
- As the state of Idaho becomes a leader in the nuclear industry, facilities like ISU ART will play a vital role!

ISU AGN-201 Reactor

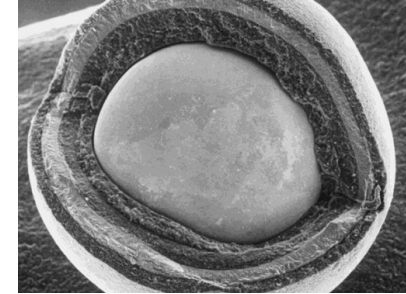


- Serves Nuclear Engineering Department and Nuclear Operations Program
- Offers hands-on training, and pathway to become an NRC-licensed Reactor Operator

Building Blocks for an Advanced Reactor

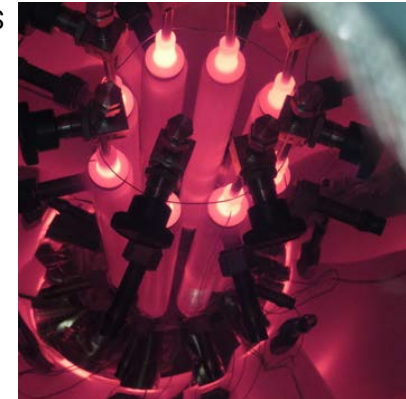
- Combining mature technologies results in a simple reactor
- “TRISO Particles: The Most Robust Nuclear Fuel on Earth”
- High temperature heat pipes - Kilowatt Reactor Using Stirling Technology (KRUSTY)

TRISO FUEL



Courtesy of DOE

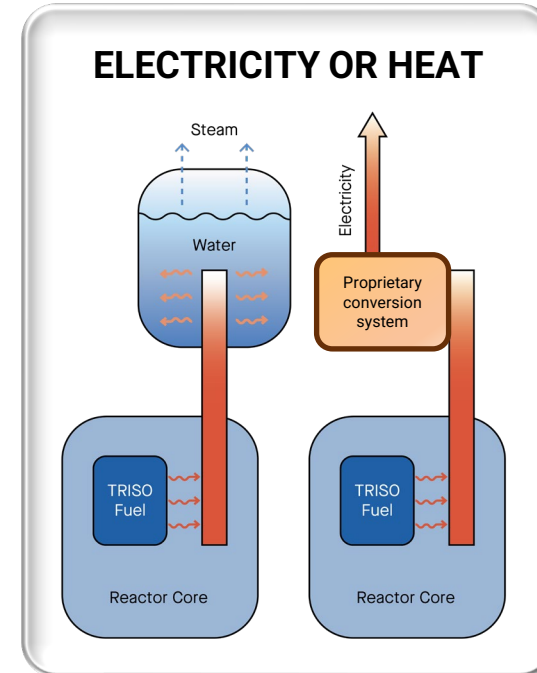
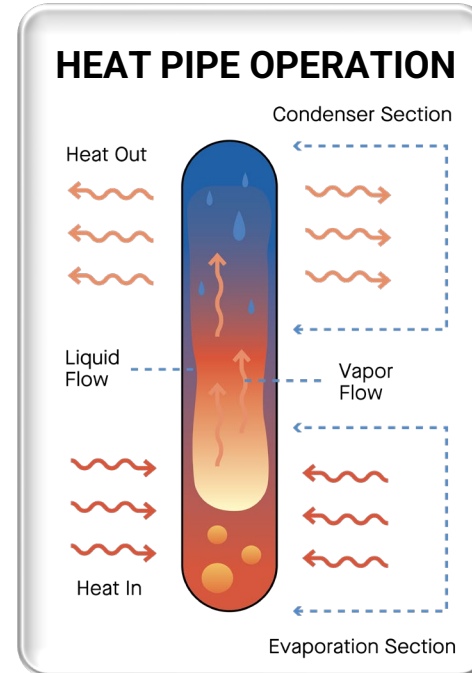
HEAT PIPES



Courtesy of NASA/LANL

Solid State Fission

- Designed to minimize the number of moving parts
- No core cooling pumps
- No pressurizers
- No ASME code pressure vessel
- Fully passively safe



Reactors Based on Solid State Technology



Advantages

- Modular
- NuSun-1: ~1.3 MWe (4 MWth)
- NuSun-15: ~15 MWe (45 MWth)
- No external water needed
- 100% Factory Fabricated
- Road transportable modules for rapid on-site preparation and assembly

Proposed Placement of ISU ART Facility



- Facility placement near main campus on ISU-owned property (east of I-15)



Idaho State
University

Thank You!

Contacts at Idaho State University

- Dr. Daniel LaBrier, Associate Professor, Nuclear Engineering
- Dr. Marty Blair, VP for Research and Economic Development

Contacts at NuCube Energy, Inc.

- Dr. Cristian Rabiti, CEO and Cofounder
- Mr. Lorin Young, VP of Operations



Oklo at INL

May 2026

Everett Redmond, Ph.D.



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**Our mission is to provide clean, reliable, and affordable energy
on a global scale**

We are executing our mission through the design and deployment
of next generation fast reactor technology

We believe we have an embedded opportunity to enhance our mission
with advanced fuel recycling technology to convert spent fuel into clean energy

The Oklo Model



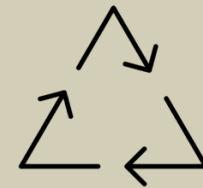
Oklo owns and
operates the
Aurora



Oklo offers
long-term
Power
Purchase
Agreements



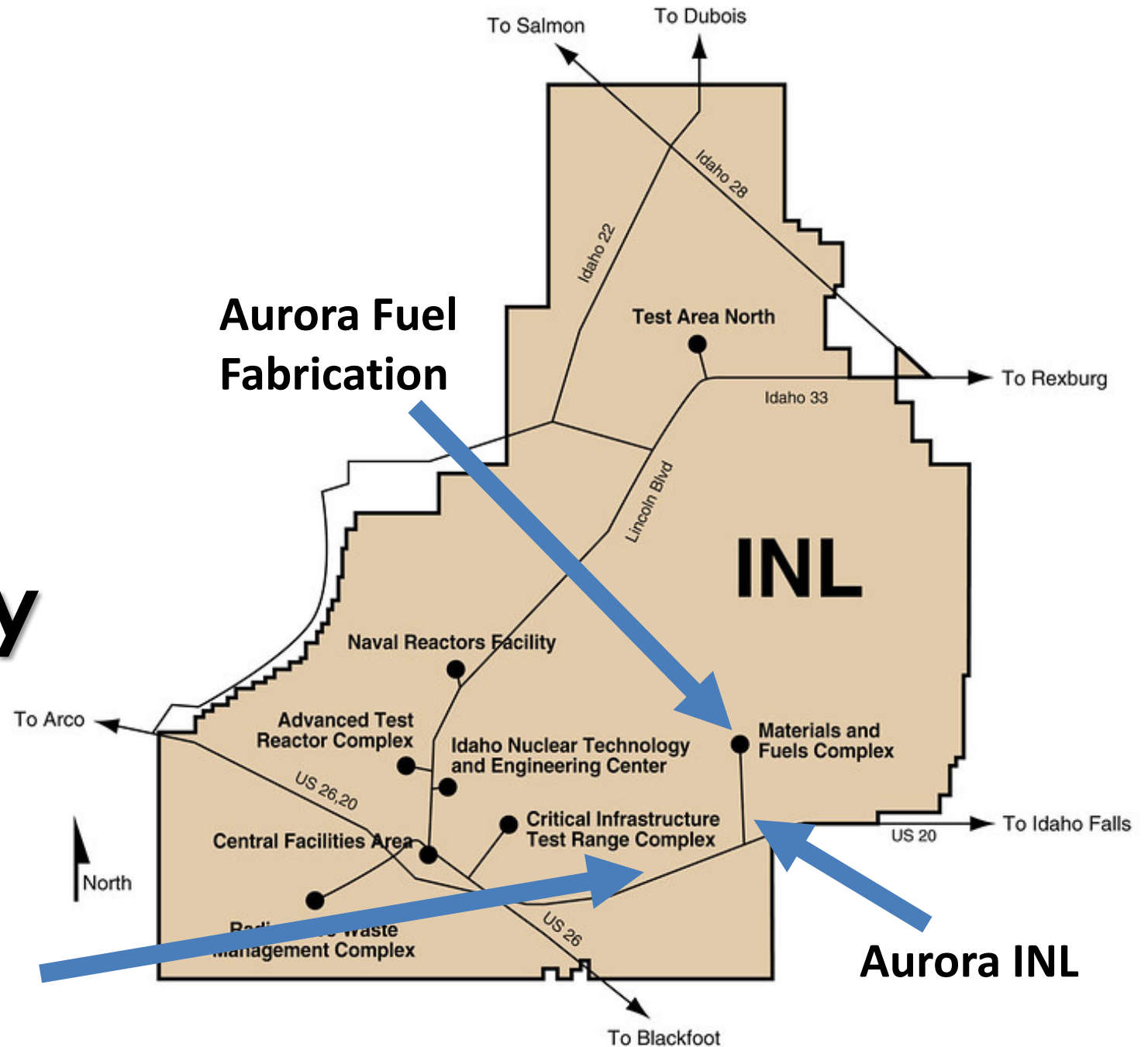
Competitive
pricing and
terms



Lifecycle
management
of plant and
fuel

Oklo at Idaho National Laboratory

Oklo Isotopes
Meitner 1



Aurora Fuel
Fabrication

INL

Aurora INL

Aurora Powerhouse Deployment at Idaho National Laboratory (INL)

First Powerhouse being deployed at INL near Idaho Falls, Idaho, USA

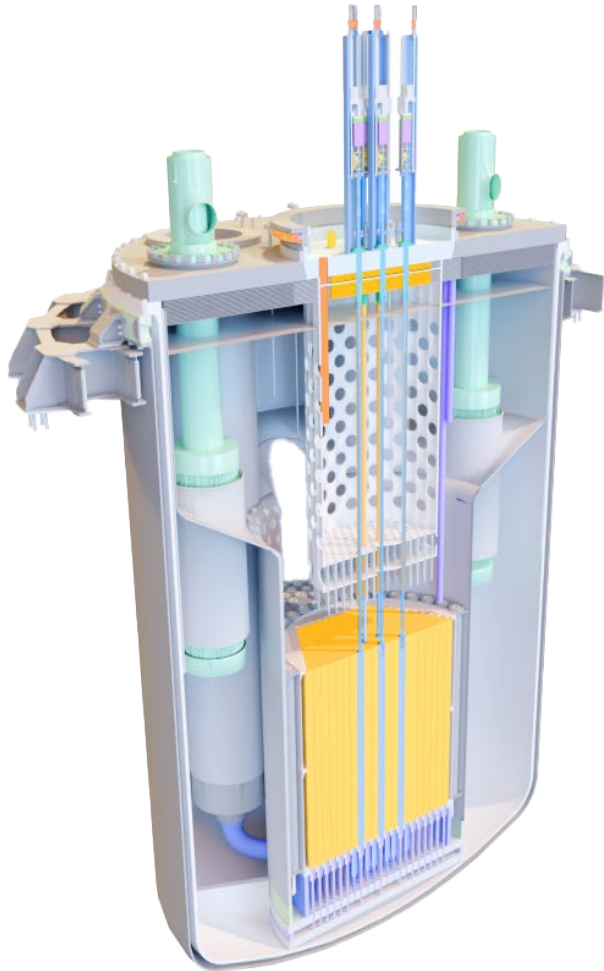
Will initially be Department of Energy authorized

Will be transitioned to NRC license

Commercial reactor providing electricity to customers



The Aurora Powerhouse – an advanced fast fission reactor



Reactor design features

- **Reaction type:** Fast fission
- **Reactor sizes:** 75 MWe, initial operation at reduced power level
- **Fuel:** Metal fuel alloy, high assay low enriched uranium or recycled fuel
- **Coolant:** Liquid metal sodium
- **Safety systems:** Inherent and passive
- **Operating temperature:** 450+ C
- **Operating pressure:** Atmospheric
- **Power output license:** 40+ years

Product benefits

Small and simple design

Low cost

Proven technology

Inherently safe

24/7 clean, reliable power

< 18 months installation
(nth of a kind)

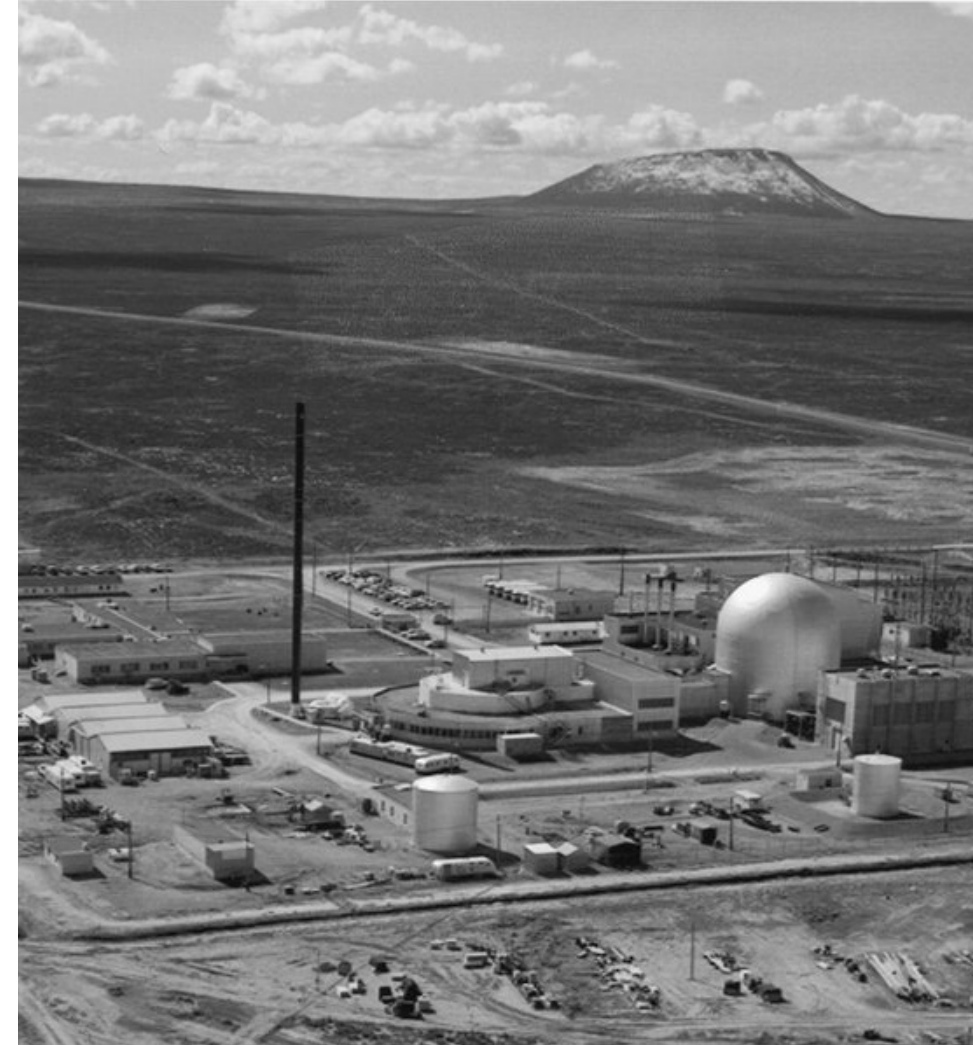
First Powerhouse to be U.S. Department of Energy authorized at INL utilizing 5 MTU of HALEU from processed EBR-II spent fuel – startup 2028

Technology Legacy: Experimental Breeder Reactor II (EBR-II)

EBR-II was a sodium-cooled fast reactor operated from 1964-1994 demonstrating inherent safety characteristics and the ability to recycle fuel

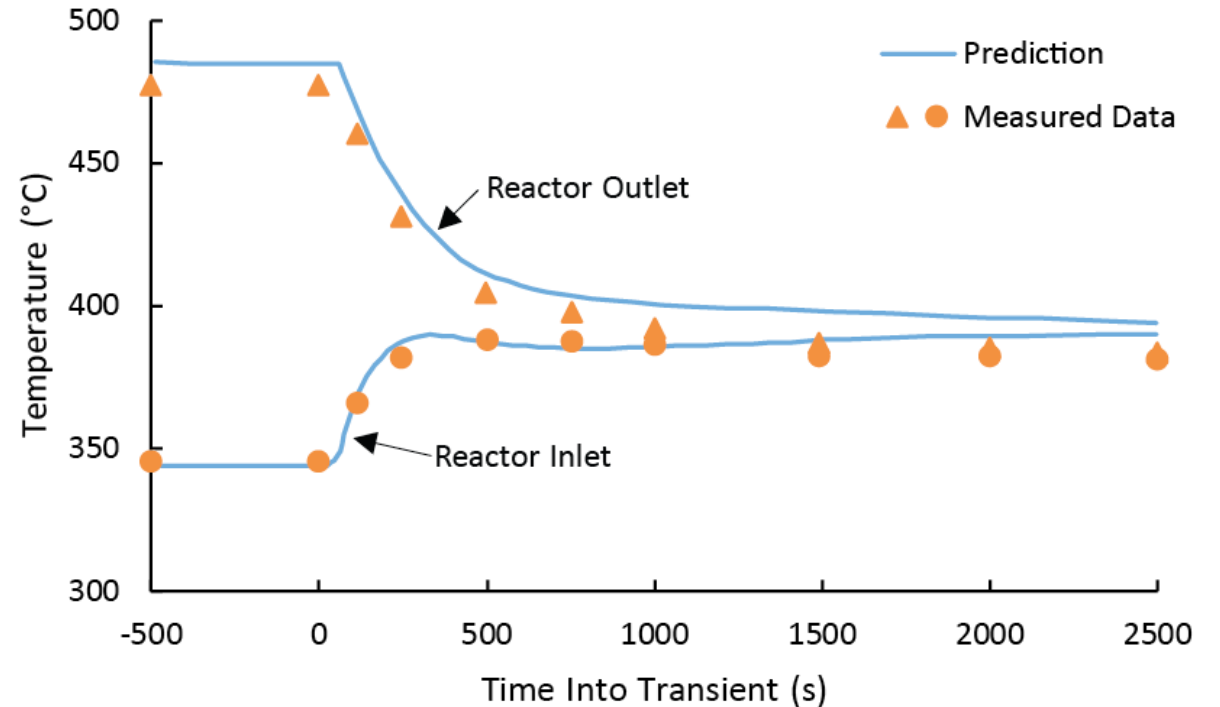
EBR-II produced about 20 MW of electricity

Shut itself down in adverse conditions with passive safety features

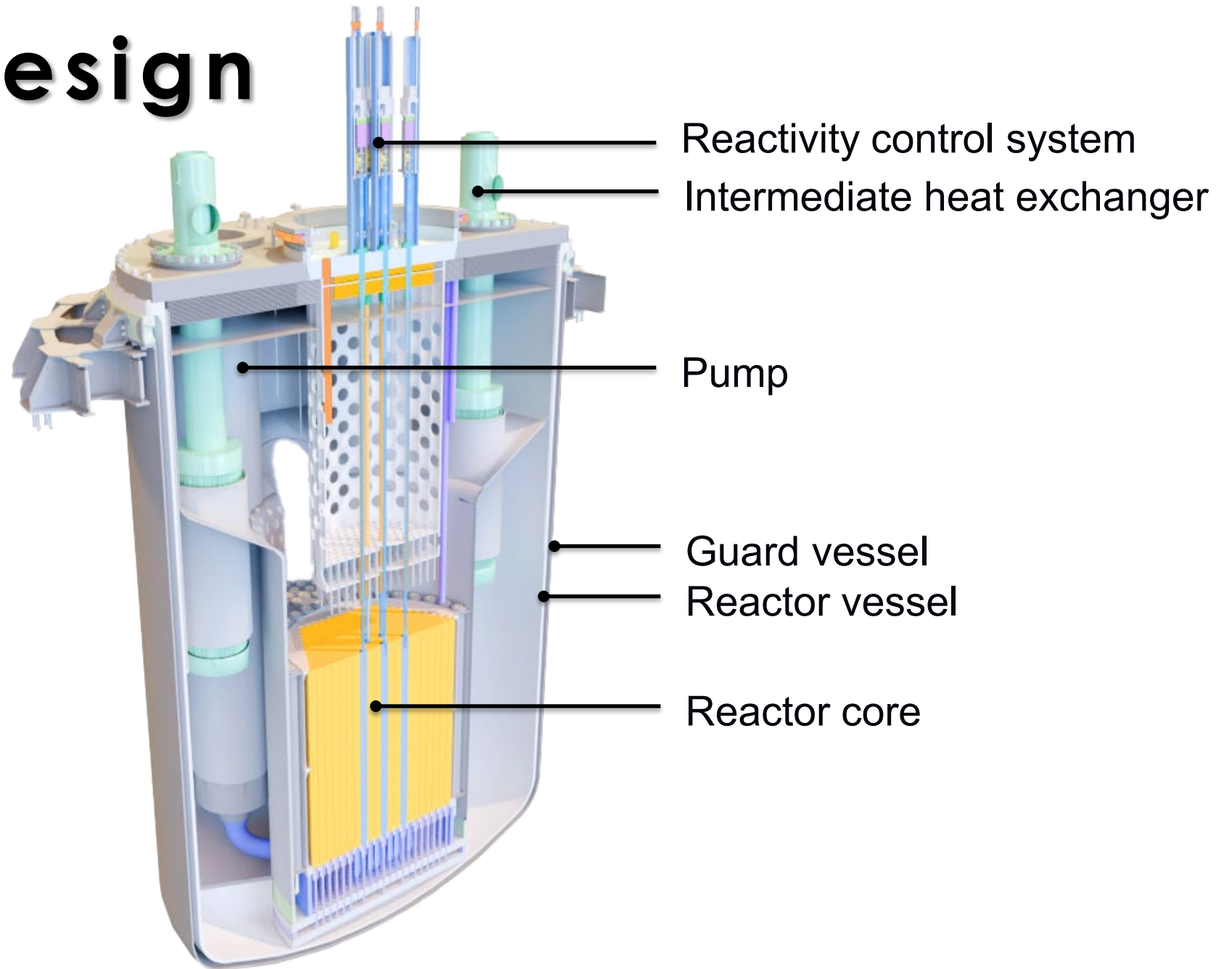


Passive Safety – self stabilizing

- Reactor cools itself: no power, pumps, mechanical systems, or operators necessary
- EBR-II gov't test: Testers shut off the coolant pump & locked out the control rods with the reactor at full power.
- Result: the reactor temperature automatically stabilized within minutes.



Reactor Design



Powerhouse Major Components

Reactor vessel

placed underground

Fission heats up the primary coolant, which in turn heats an intermediate coolant

Steam generators

use heat from the intermediate coolant to evaporate water

Air-cooled condensers

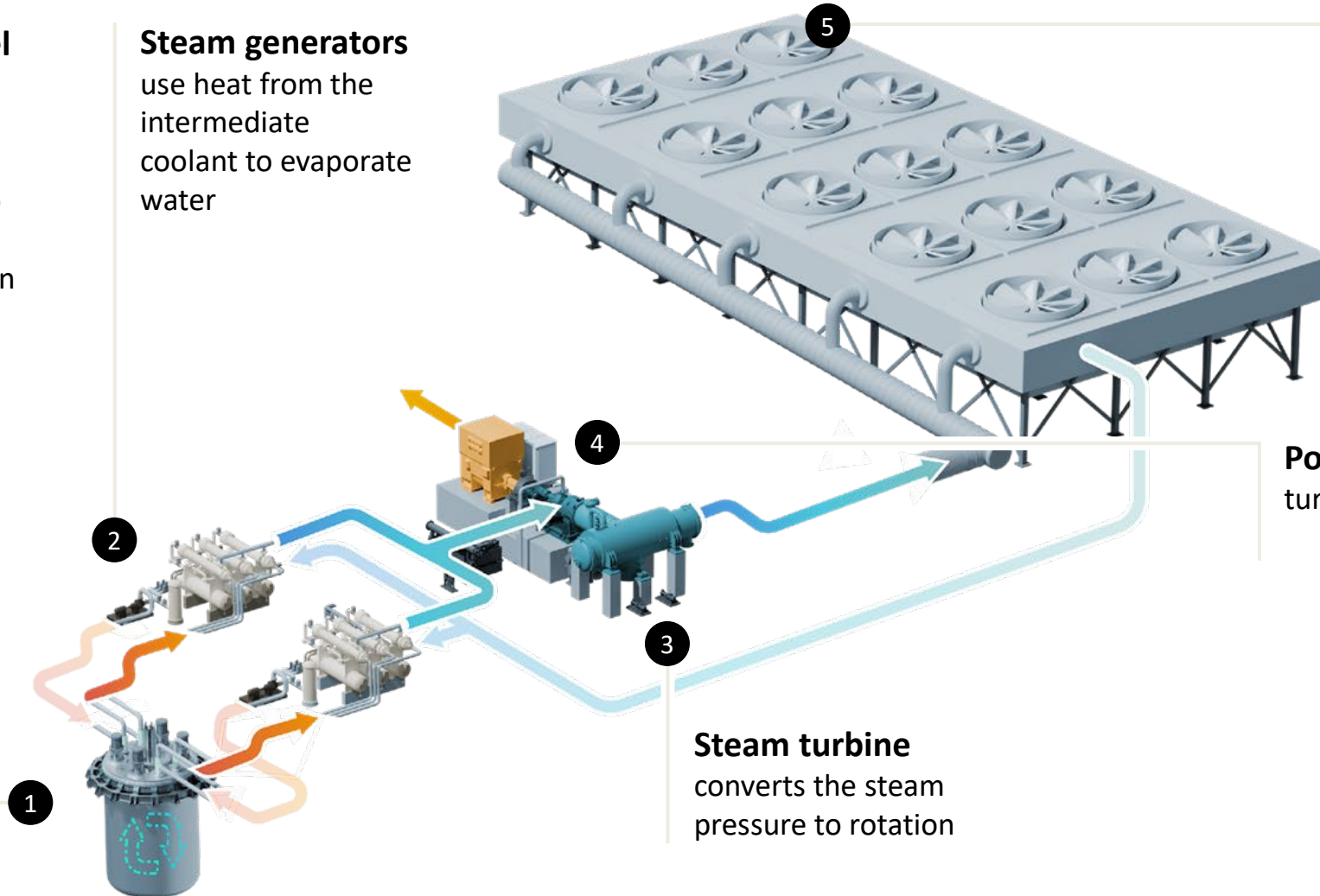
turn steam back into water, for reuse

Power conversion system

turns rotation into electricity

Steam turbine

converts the steam pressure to rotation



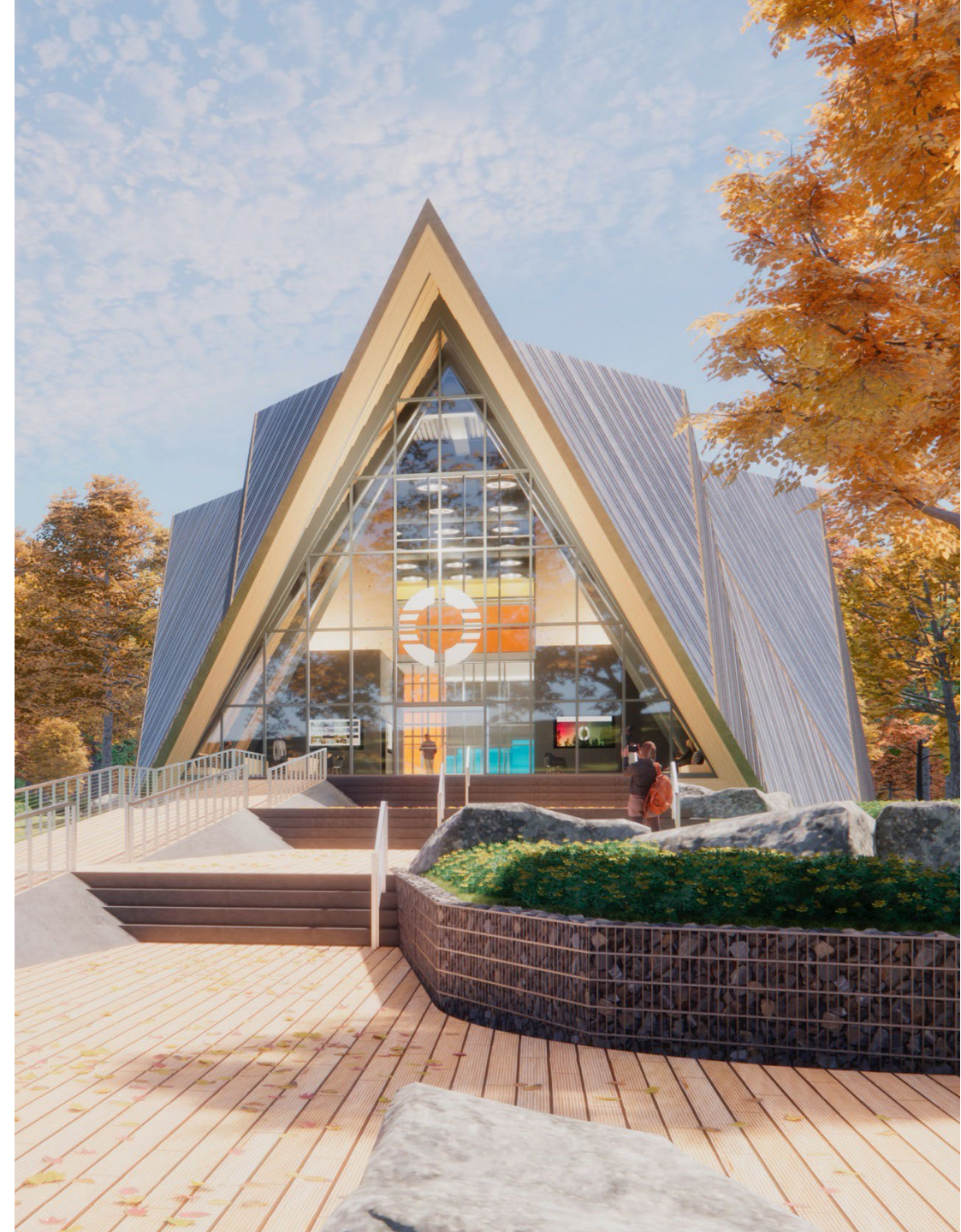
Flexible Siting

Site footprint orders of magnitude less than existing commercial nuclear power plants

Minimal water requirements

Flexible grid interfaces

Repeatable licensing and permitting



Site Related Activities

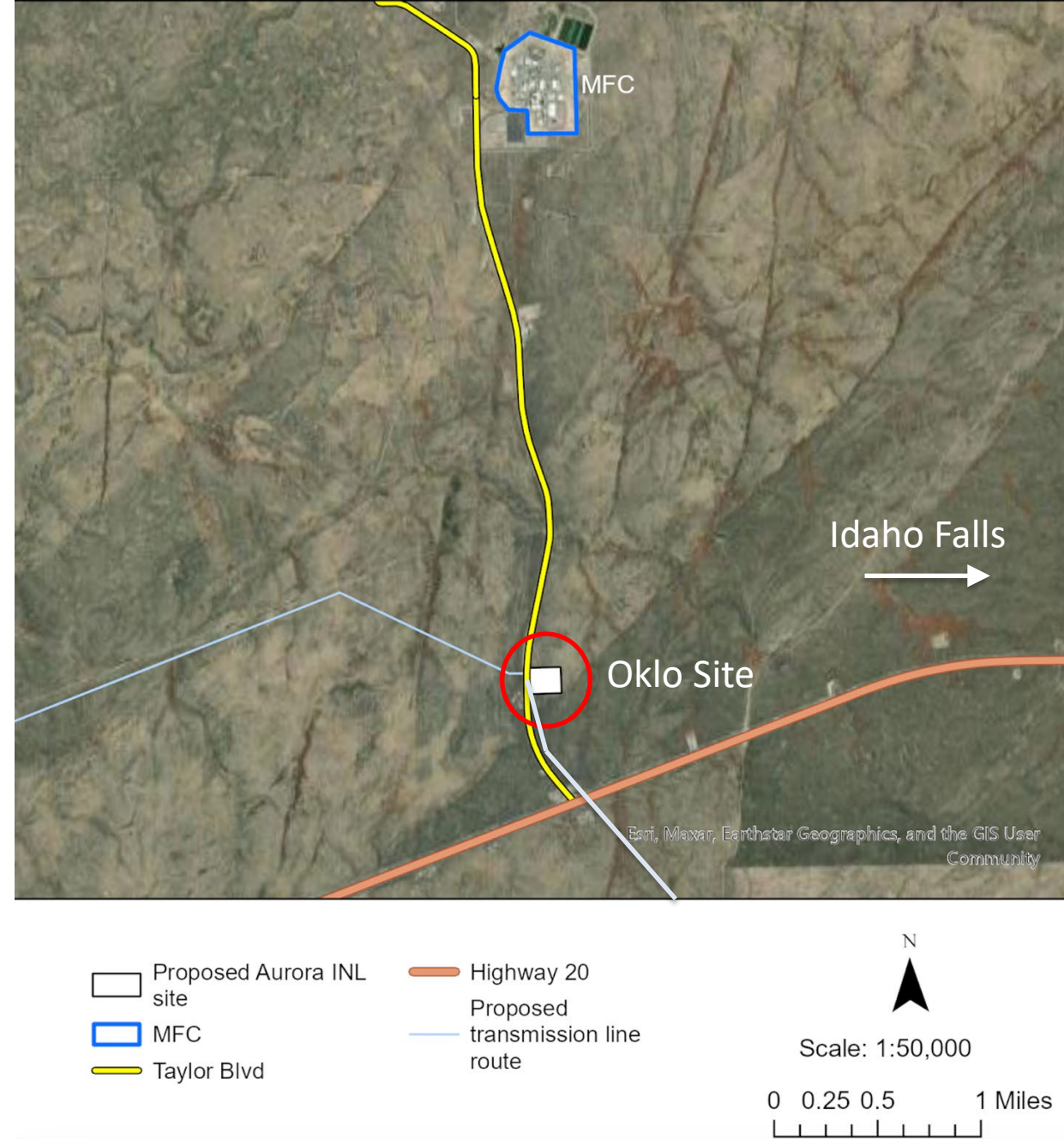
Cultural and biological surveys

Site characterization (geophysics testing and boreholes) work to support civil design

Construction underway

Oklo engaged with Idaho Power

Possible transmission lines routes shown



Aurora INL Construction



Fuel Fabrication

Oklo has been granted access to 5 metric tons of HALEU being produced from processed EBR-II spent fuel at Idaho National Laboratory (INL)

Building MFC-798 at INL will be converted into a pilot-scale fuel fabrication facility

The facility will be DOE authorized



Recycling

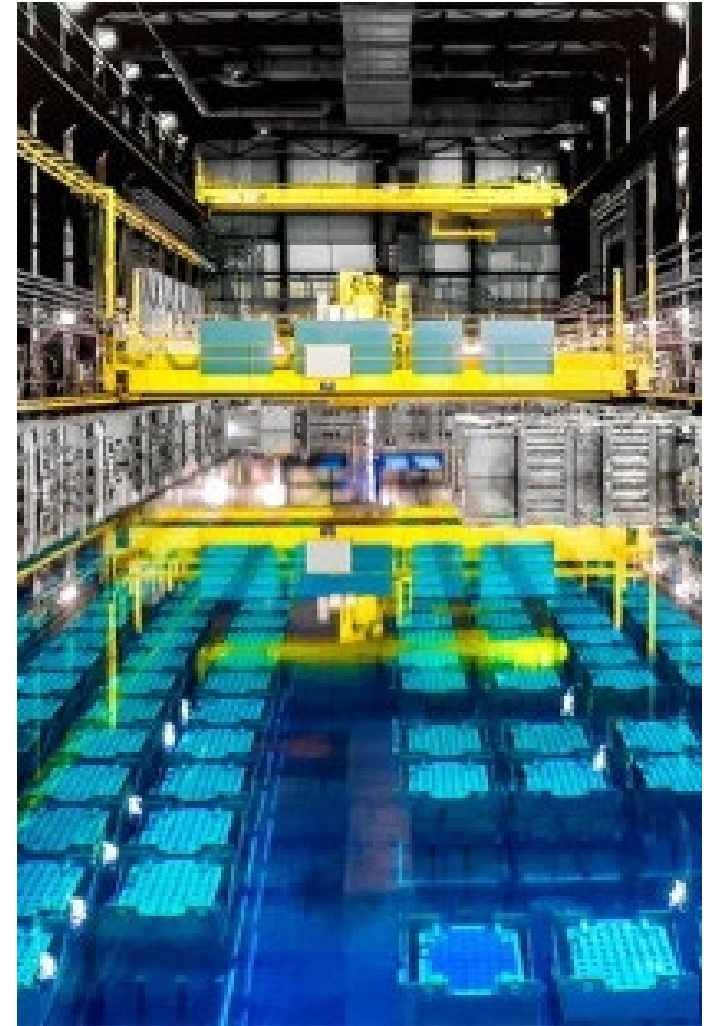
Oklo is planning to recycle spent fuel for production of U/Transuranic material (U/TRU) and has engaged the U.S. Nuclear Regulatory Commission in pre-application interactions

Fast reactors + pyroprocessing = paradigm shift

Pyroprocessing technology based on decades of work at Idaho and Argonne National Laboratories

Initial feedstock is expected to be majority light water reactor oxide fuel, to be followed by advanced reactor metal fuel

Oklo will only deploy reprocessing technology in the U.S. in Oak Ridge, Tennessee



Oklo Isotopes

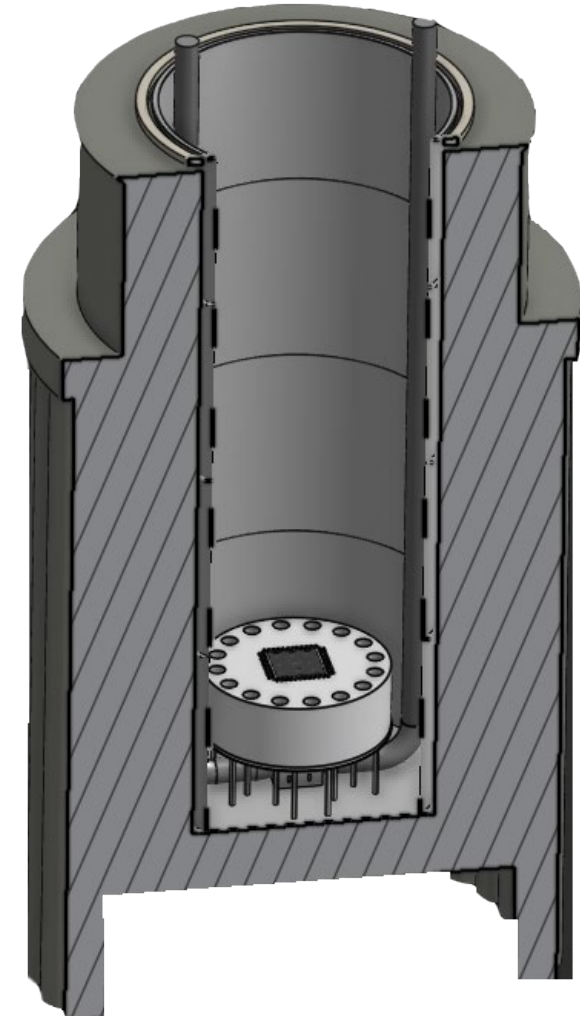
Versatile Isotope Production Reactor (VIPR)

Pool-type, water-cooled, non-pressurized isotope production reactor using reduced height 17x17 fuel bundles with LEU fuel

Wide variety of irradiation positions for diverse isotope production

The Meitner 1 facility at INL will utilize VIPRs and will be NRC licensed

A test reactor is being built under DOE authorization in Texas



Oklo's Customers and Partnerships

[HOME](#) > [NEWS](#) > [THE CRITICAL POWER CHANNEL](#)

Data Center Dynamics article

Equinix signs deal to procure up to 500MW of nuclear power from Oklo reactors – makes \$25m pre-payment

Equinix makes first SMR deal for a colocation company

April 05, 2024 By: Dan Swinhoe [Have your say](#)

Oklo Selects Kiewit as the Lead Constructor for First Aurora Powerhouse in Idaho

07/15/2025

SANTA CLARA, Calif.--(BUSINESS WIRE)-- Oklo Inc. (NYSE: OKLO),

Oklo Signs MOU with ABB and Commissions Monitoring Room to Advance Training for Aurora Powerhouse Deployment

08/21/2025

Oklo, Meta Announce

Agreement in Support of 1.2 GW

Nuclear Energy Development in

Southern Ohio

01/09/2026

Oklo and Siemens Energy Sign Binding Contract to Expedite Procurement of the Power Conversion System for Commercial Power Plant


11/19/2025

Oklo press releases

Questions?
everett@oklo.com



The Aurora Powerhouse



NRIC Program Review
Aurora Fuel Fabrication Facility

Audrey Ennis

Disclaimer

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Overview



- Oklo's fuel and fabrication technologies
- Oklo's Department of Energy (DOE) Fuel Line Pilot Program
- National laboratory collaborations, GAIN awards, and NSUF RTE awards
- Aurora fuel fabrication facility (A3F) project overview and status
 - A3F project overview
 - DOE approvals progress
 - Design and construction progress
 - Process equipment progress
 - Fuel Fabrication Development Facility



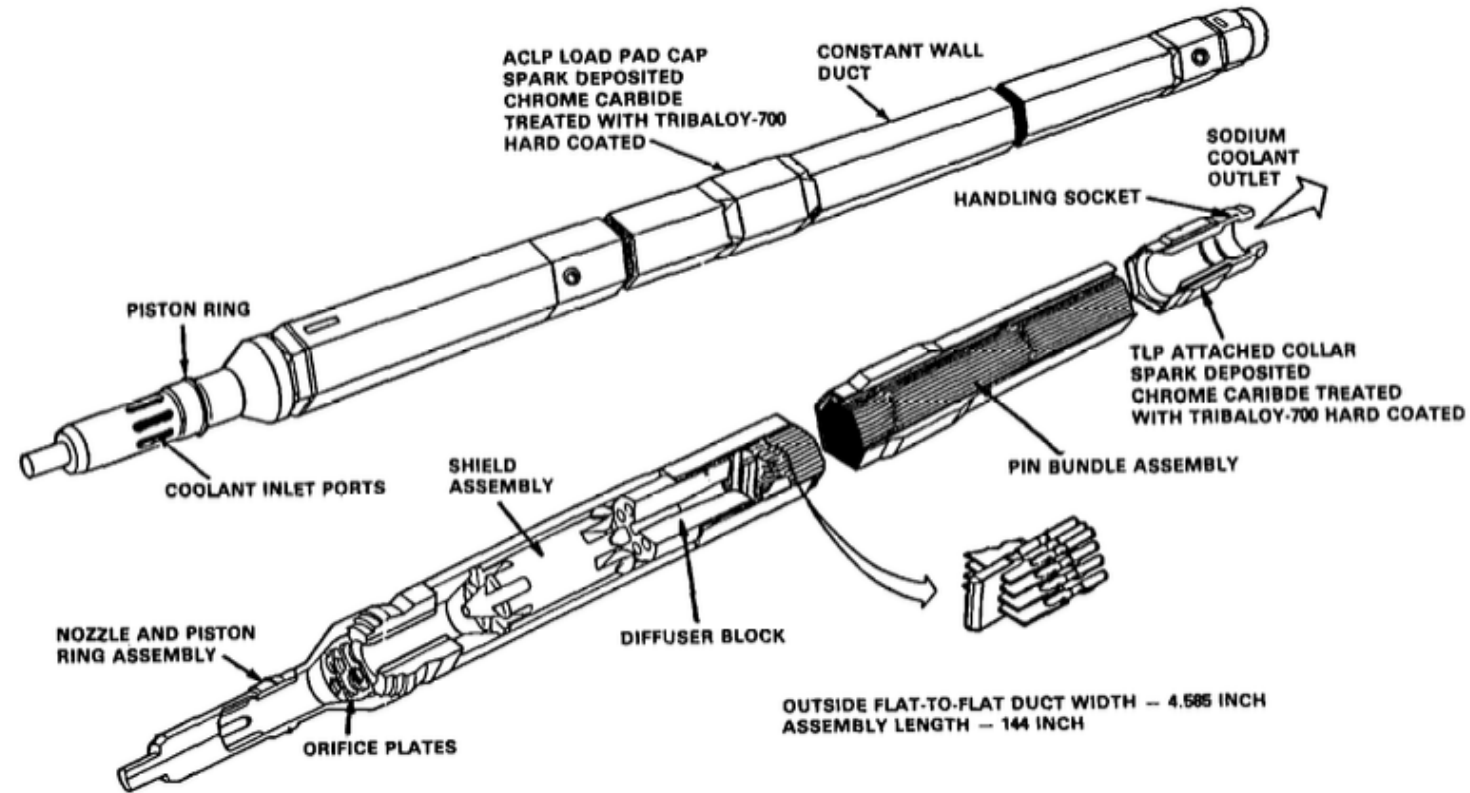
Oklo's Fuel and Fabrication Technologies

Audrey Ennis

Aurora-INL fuel product overview



- Oklo's Aurora-INL fuel design is based on legacy designs used in EBR-II and the Fast Flux Test Facility (FFTF).
- Uranium-10 wt.% zirconium metal fuel column
- Fuel bundle contained within a hexagonal duct tube

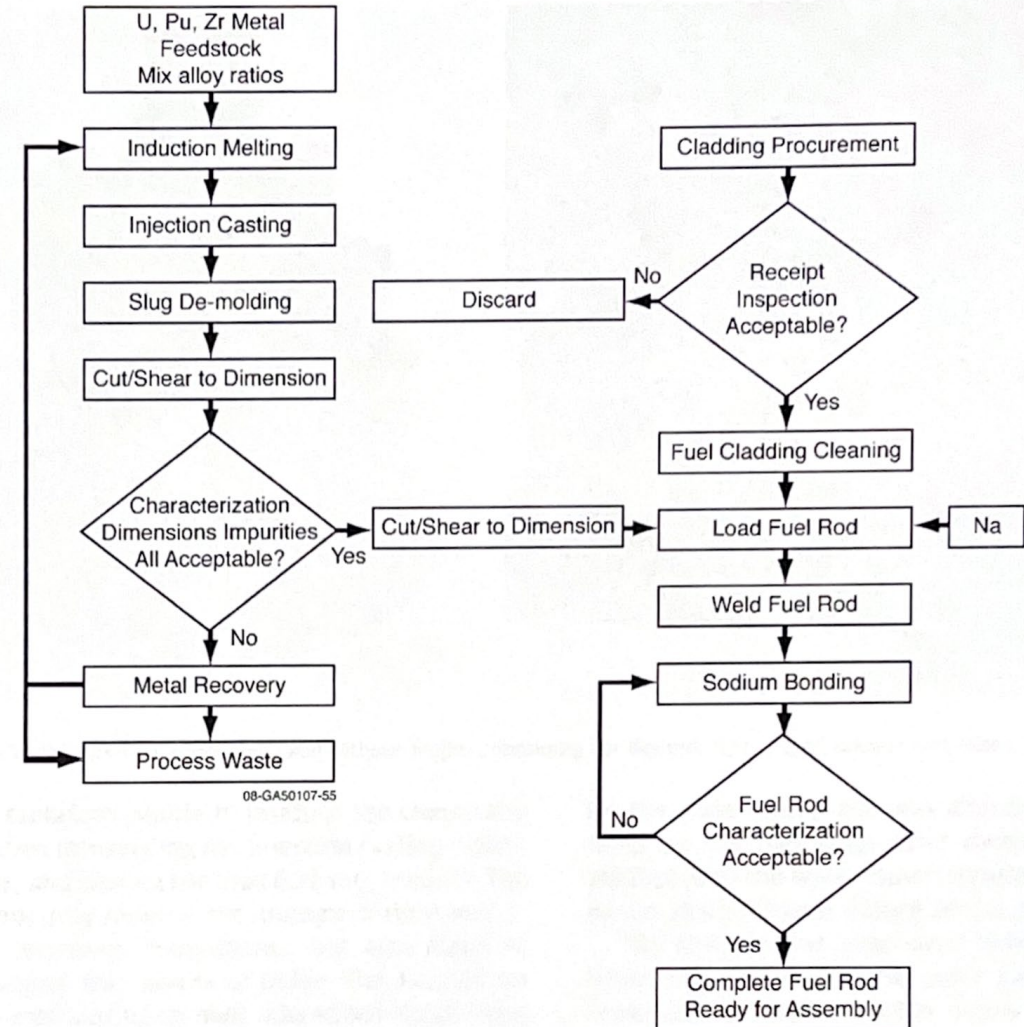


FFTF fuel assembly [1]

Fuel fabrication process overview



- Oklo's fabrication processes are based on the processes deployed to safely fabricate ~130,000 metal fuel pins for EBR-II and the Fast Flux Test Facility (FFTF). [2]
- Oklo is incorporating lessons learned from those operations to increase process efficiency and reliability.





DOE Advanced Fuel Line Pilot Program

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DOE Advanced Fuel Line Pilot Program



- Oklo was selected to build and operate three fuel fabrication facilities as part of the Fuel Line Pilot Program:
 - Aurora Fuel Fabrication Facility (A3F) – the first Oklo fuel fabrication facility, located at MFC at INL
 - Two other Oklo fuel fabrication facility projects

Oct 1, 2025 8:00 AM Eastern Daylight Time

Oklo Selected by U.S. Department of Energy for Advanced Nuclear Fuel Line Pilot Projects



DOE advanced fuel pilot line awards press release [4]



National Laboratory Collaboration, GAIN Awards, and NSUF Engagement

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Oklo and national laboratories



- Activities currently spread out across 7 national laboratories
- Activities
 - Deployments
 - Prototypic testing
 - Materials testing & development
 - Legacy information



Laboratories currently working with Oklo

GAIN awards

- Deconversion GAIN award (2025)
 - Oklo will work with PNNL to assess two methods for converting UF_6 to uranium metal and investigate scalability.
 - Oklo will enable simpler, safer deconversion operations and produce data that will reduce licensing burden of deconversion facilities.
- Test vehicle GAIN award (2024)
 - Oklo worked with INL to develop the layout for a fuel test facility and an experimental test vehicle to expand existing fast reactor fuels data.



Oklo Inc.
partnered with
Pacific Northwest National Laboratory

Development of Novel Deconversion Technology, NE-25-37814

[5]



[6]

NSUF RTE awards



- Oklo regularly submits Rapid Turnaround Experiment proposals to NSUF.
 - Researching irradiated fuel mechanisms to support advanced fuels licensing
 - Collaborating with INL experimentalists

Awarded Proposals

1. *Thermal Diffusivity Characterization of Irradiated Minor Actinide-Bearing Metal Fuel Pin G591 from the EBR-II X501 Experiment*
 - Awarded June 26, 2025 (RTE 2025 First Call)
 2. *Thermal Diffusivity Characterization of Irradiated Plutonium-Bearing Metal Fuel Pin G594 from the EBR-II X521 Experiment*
 - Awarded December 3, 2025 (RTE 2025 Second Call)
- Both experiments will leverage the Netzsch Laser Flash Apparatus LFA 427 at the Irradiated Materials Characterization Laboratory.
 - **Both awards will initialize fuel thermophysical property datasets for minor actinide-bearing and gallium-bearing metal fuels, respectively.**



A3F Project Overview and Status

Audrey Ennis

A3F overview

- Oklo was awarded access to 5 metric tons of HALEU recovered from EBR-II through a competitive process launched by INL in 2019.
- HALEU reguli produced by INL will become the feedstock for Oklo's fuel fabrication in A3F.
- Oklo is modifying building MFC-798 to fabricate fuel for the Aurora-INL reactor.



HALEU reguli produced from recovered EBR-II fuel



Pre-decontamination and decommissioning view of MFC-798

A3F DOE approvals progress



- A3F is following DOE-STD-1271 (transitioned from DOE-STD-1189).
- Nuclear Safety Design Agreement (NSDA) was approved in October 2025.
- Preliminary Documented Safety Analysis (PDSA) was approved in December 2025.
- Oklo will draft the Documented Safety Analysis (DSA) this year.

Dec 16, 2025 6:00 AM Eastern Standard Time

U.S. Department of Energy Approves Preliminary Documented Safety Analysis of Oklo's Aurora Fuel Fabrication Facility as Assembly Begins at Idaho National Laboratory

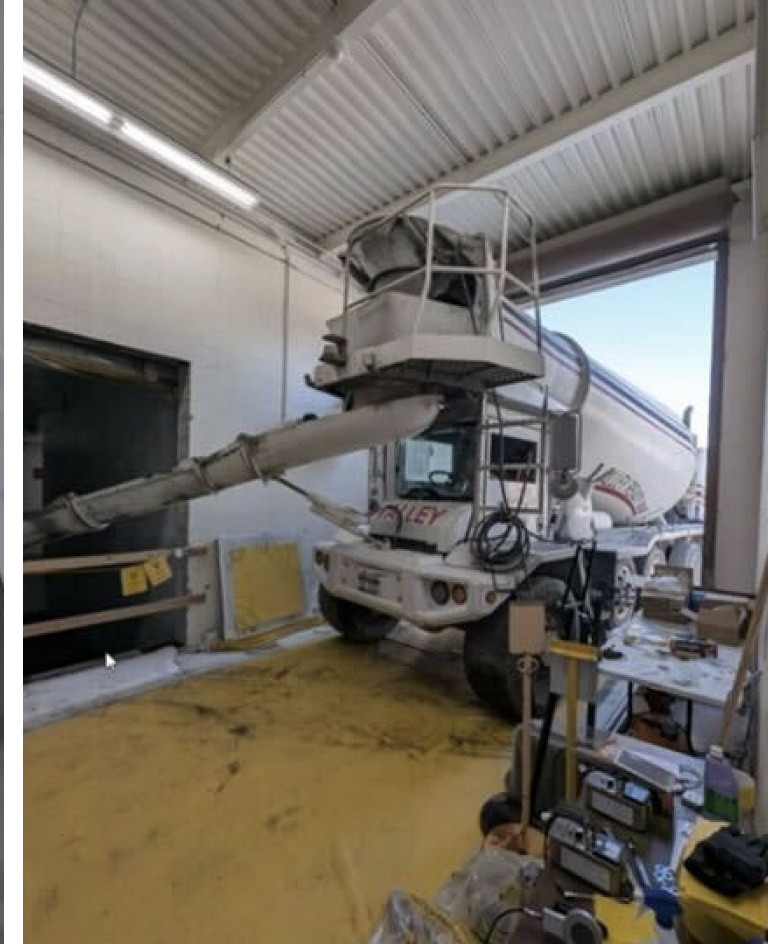


A3F PDSA approval press release [7]

A3F design and construction progress



- A3F decontamination and decommissioning (D&D) completed in Q4 2025
- Early construction activities started in Q4 2025
- A3F final design review meeting held 4/2/26
- Completion of final design, issue for construction package, and construction contracting expected in May 2026
- Construction timeline estimated at 9 months
- Facility startup estimated in Q1-Q2 2027



A3F D&D and construction progress photos from INL

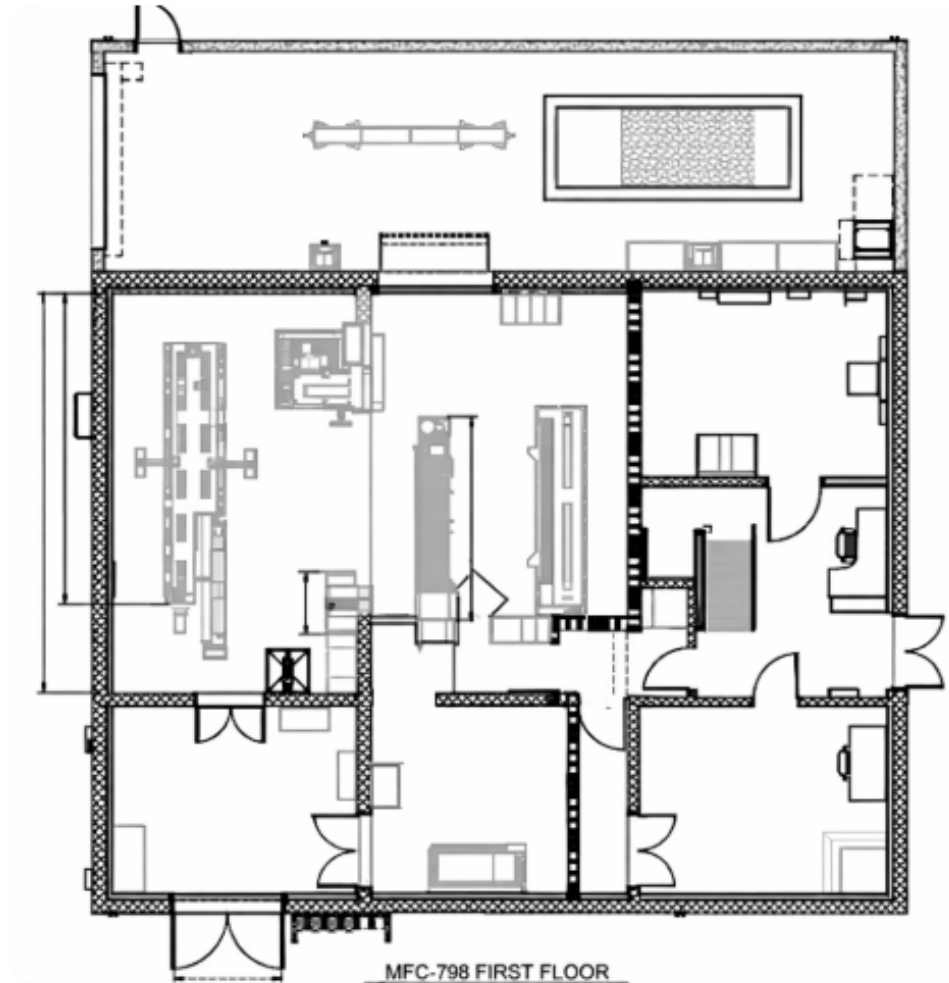
A3F construction progress



A3F process equipment progress



- With support from INL, Oklo has contracted the design and build of fuel fabrication equipment and supporting equipment for A3F operations.
 - Gloveboxes
 - Fuel pin loading and processing equipment
 - Fuel assembly fabrication equipment
- All equipment to be fabricated on time to support Aurora-INL deployment

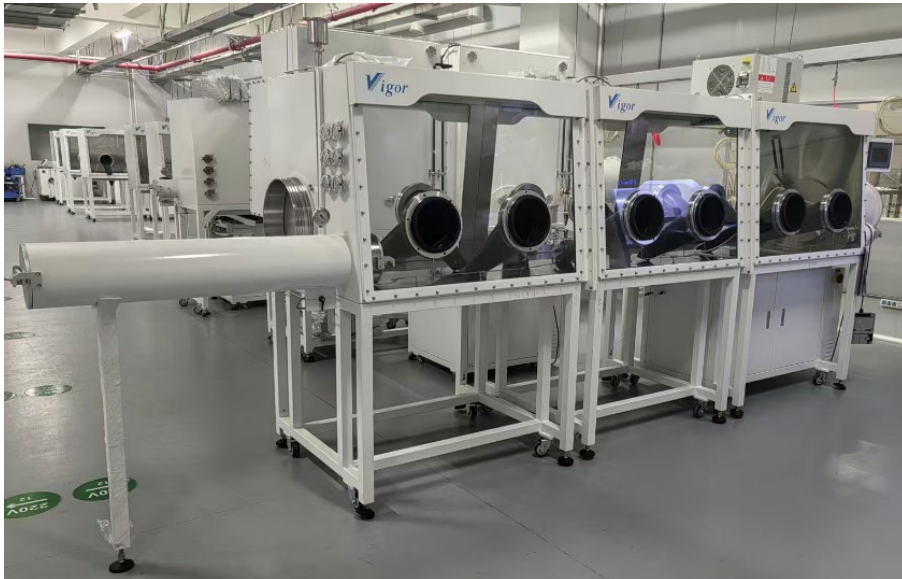


Layout of A3F first floor with equipment

Fuel Fabrication Development Facility



- Oklo established a Fuel Fabrication Development Facility (FFDF).
 - Radiological manufacturing research and development (NRC Part 30 license)
 - Development of process parameters and procedures prior to A3F operations
 - A3F operator training opportunities
 - Non-radiological manufacturing to support A3F



FFDF glovebox



FFDF distance from MFC and A3F

References



- [1] A. L. Pitner and R. B. Baker, “Metal fuel test program in the FFTF,” *Journal of Nuclear Materials*, vol. 204, pp. 124–130, 1993.
- [2] D. C. Crawford, D. L. Porter, and S. L. Hayes, “Fuels for sodium-cooled fast reactors: US perspective,” *Journal of Nuclear Materials*, vol. 371, pp. 202–231, 2007, doi: 10.1016/j.jnucmat.2007.05.010.
- [3] D. E. Burkes, R. S. Fielding, D. L. Porter, D. C. Crawford, and M. K. Meyer, “A US perspective on fast reactor fuel fabrication technology and experience part I: metal fuels and assembly design,” *Journal of Nuclear Materials*, vol. 389, pp. 458–469, 2009.
- [4] Oklo Inc., “Oklo selected by U.S. Department of Energy for Advanced Nuclear Fuel Line Pilot Projects,” *Business Wire*, Oct. 1, 2025. [Online]. Available: <https://www.businesswire.com/news/home/20251001569538/en/Oklo-Selected-by-U.S.-Department-of-Energy-for-Advanced-Nuclear-Fuel-Line-Pilot-Projects>
- [5] Gateway for Accelerated Innovation in Nuclear (GAIN), “Development of novel deconversion technology,” Idaho National Laboratory, FY-2025. [Online]. Available: <https://gain.inl.gov/development-of-novel-deconversion-technology/>
- [6] U.S. Department of Energy, Office of Environmental Management, “Subject of bulletin (if known),” GovDelivery, [Online]. Available: <<https://content.govdelivery.com/accounts/USDOEOEM/bulletins/2903283>>
- [7] Oklo Inc., “U.S. Department of Energy approves preliminary documented safety analysis of Oklo’s Aurora fuel fabrication facility as assembly begins at Idaho National Laboratory,” *Business Wire*, Dec. 16, 2025. [Online]. Available: <<https://www.businesswire.com/news/home/20251216070998/en/U.S.-Department-of-Energy-Approves-Preliminary-Documented-Safety-Analysis-of-Oklos-Aurora-Fuel-Fabrication-Facility-as-Assembly-Begins-at-Idaho-National-Laboratory>>



Q&A

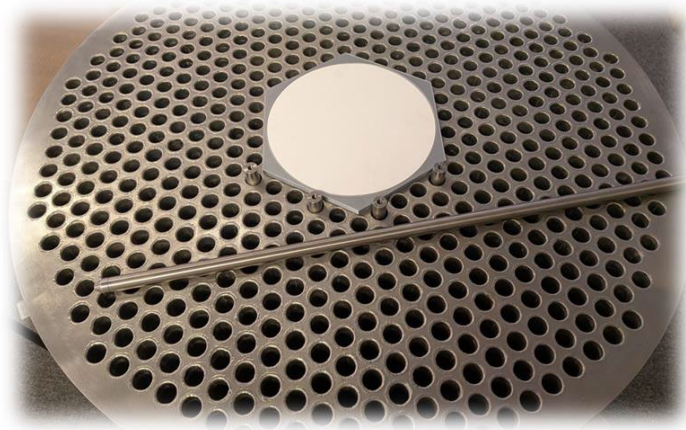


NRIC National Reactor
Innovation Center

DEPLOYABLE.energy

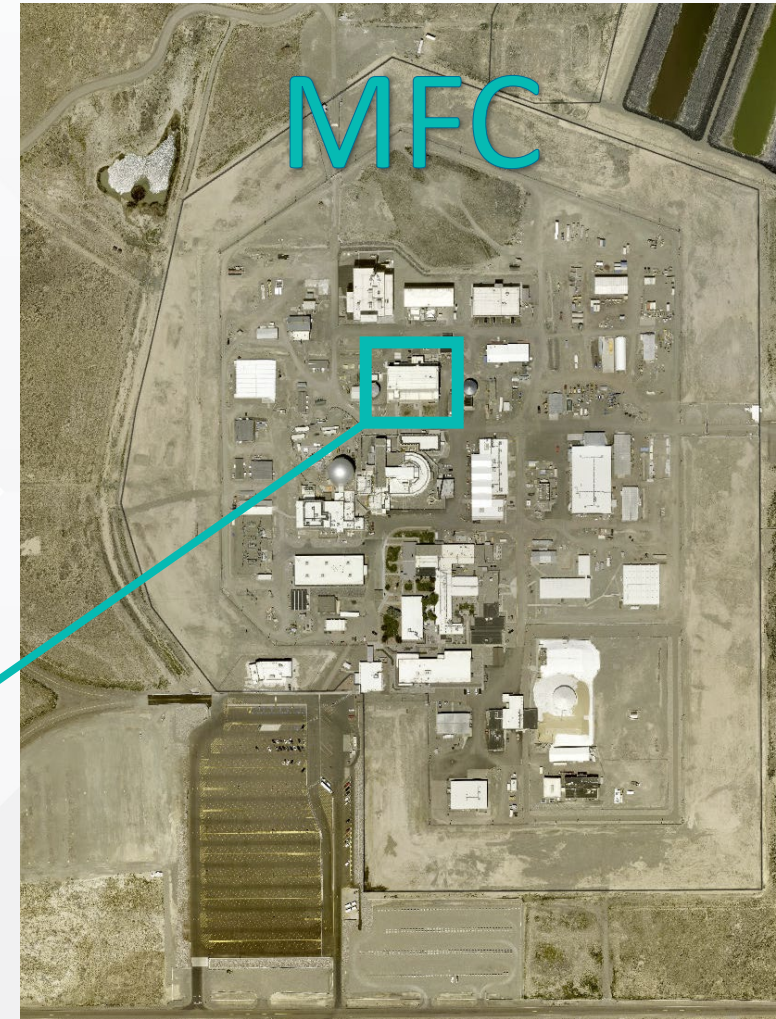
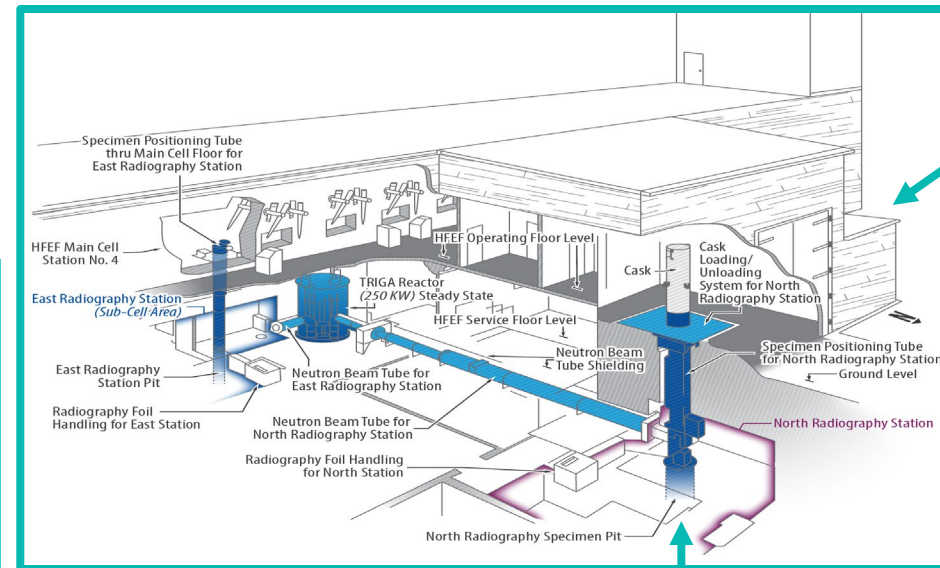
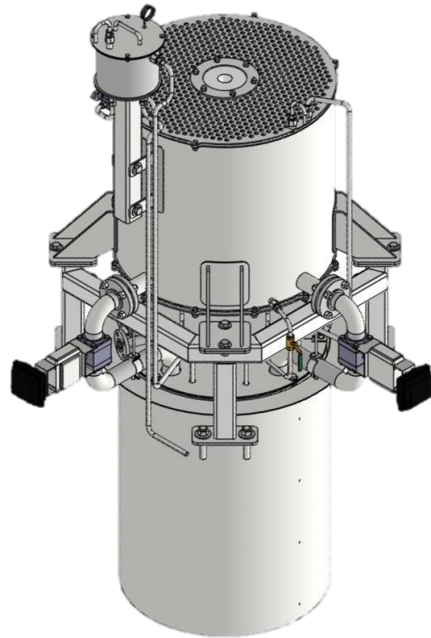
Deployable Energy UNITY Nuclear Battery

Program Update
05/06/2026



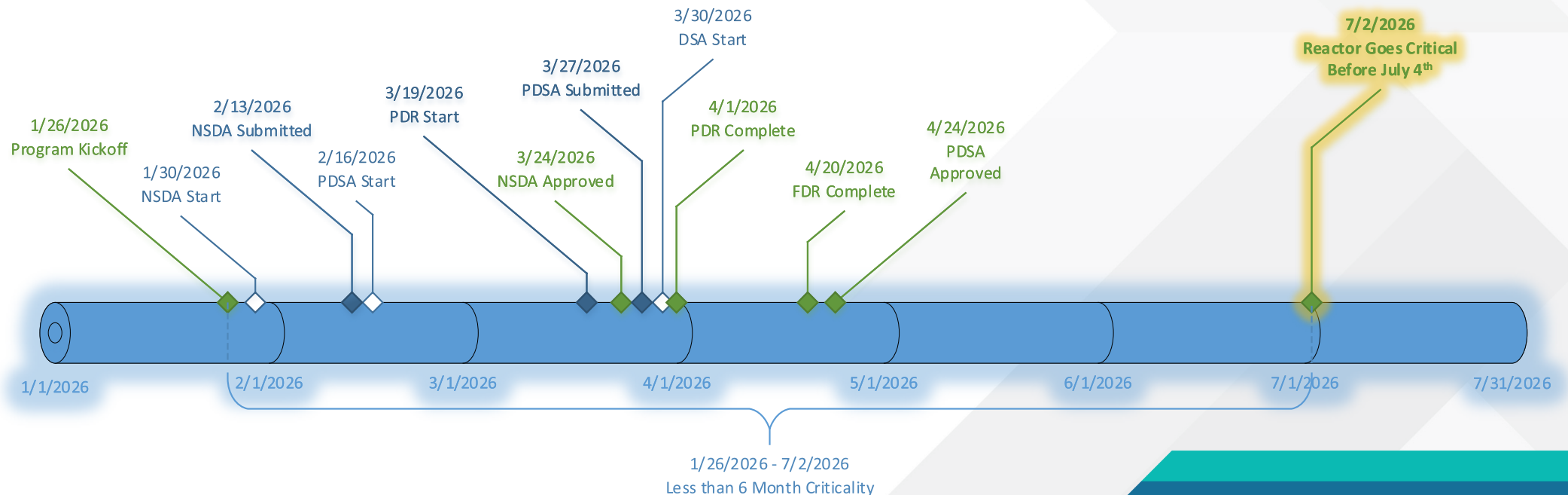
UNITY Zero-Power Reactor Demonstration

- Deployable Energy is partnering with INL to execute the UNITY Nuclear Battery Demonstration.
- Testing is being conducted at the Neutron Radiography Reactor (NRAD) and the North Radiography Station (NRS).
- The demonstration is a zero-power test of the UNITY Nuclear Battery core.



UNITY Zero-Power Reactor Demonstration

- The work is being performed under an SPP.
- Deployable Energy serves as the design agent, while BEA is the design authority and is executing the test.
- The program kicked off on 1/26 and remains on track to achieve criticality before July 4.
- The PDSA was submitted on 3/27, only 39 days after work began and 60 days after program kickoff.



Deployable Energy Intro



94 Days – From Contract to Reactor at Facility

106 Days – From Contract to Fuel at Facility

<150* Days – From Contract to Criticality

Single digit \$M – Bootstrapped



Deployable Energy Intro

Making Nuclear Energy a **Product**, not a Project –
Mass Manufacturable UNITY Nuclear Battery

Serial Deep Tech Entrepreneurs & Nuclear Trailblazers
– We are **Builders** – we have solved big problems

Headquartered Houston “Energy Corridor” – Center of
Global Energy **Supply Chain**

Riding the wave of **Bi-Partisan & Executive Support**

340,000 sf state of the art manufacturing facility on
58-acres. – Stage to be **Giga-Watt Factory**



Good Companies think Tech, Great One's think Supply Chain

5% Standard Fuel, Light Water Moderated, Gas Cooled

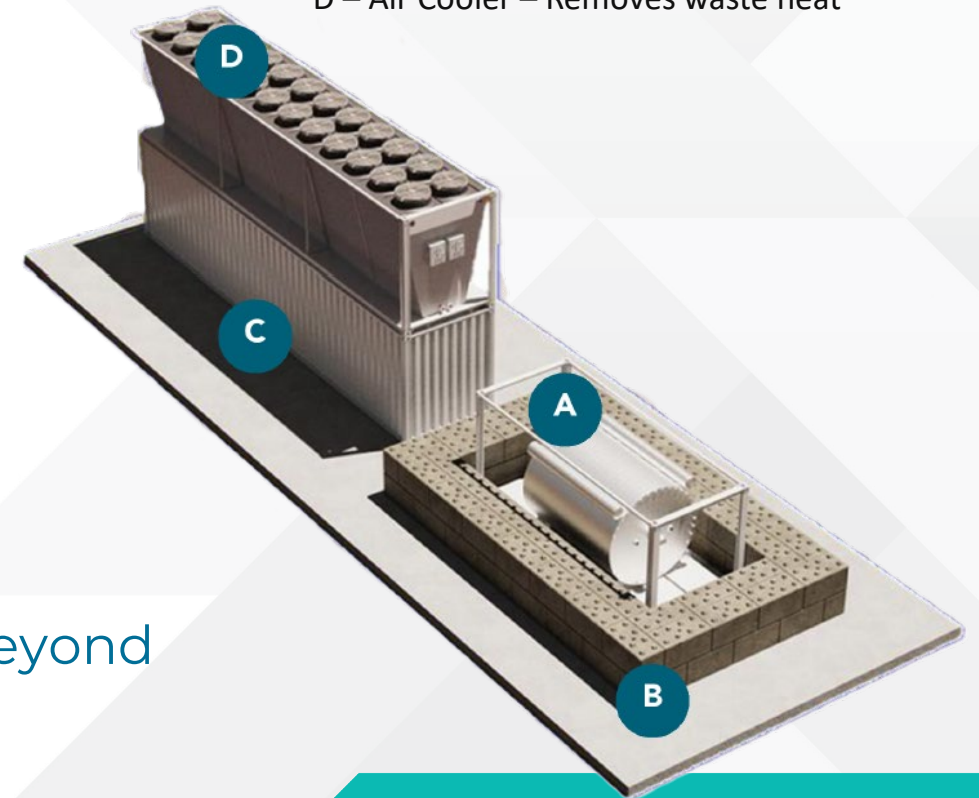
Designed to be mass manufactured:
No Exotic Materials
No Exotic (Batch) Processes

Make Planes not Airports – Site:
Hard Standing
Junction Boxes
Pre-Fab Modules

Scalable – MWs to GWs

Versatile – Near Universal Siting – Land / Sea / Beyond

A – Nuclear Island – Generates Heat
B – Physical Protection (cutaway)
C – Balance of Plant – Makes Electricity
D – Air Cooler – Removes waste heat



Builders



BOBBY GALLAGHER

Co-Founder, CEO & CTO

Exited Deep Tech Founder
Ex-Energy. Ex-Military.
Mech Eng



DR LANCE MAUL

Co-Founder & COO

Multiple VC Backed Startup experience.
UC Berkley PhD in reactor physics.

Phenomenal Team Experience base – 150+ years Nuclear Experience:

- VC Experience
- Deep Tech Startup Experience
- MMR Landscape
- Nuclear Startup Experience from 2000-2010s
- Nuclear Reactor Vendor
- Naval Reactors
- Nuclear EPCs
- Nuclear Architecture Engineer
- Nuclear National Labs
- Nuclear Utilities / Operations
- Turbomachinery Development
- Military Service
- National Intelligence / Security Service
- IPO Experience
- M&A Experience



SANJAY MUKHI

**Co-Founder,
Chief Commercial Officer**

20+ years in nuclear / US govt.
Ex-CIA, Ex State Dept, Ex NRIC.
UT Nuclear Eng, UT MBA



Robbie Mardus-Hall

**Co-Founder, Head of
Modelling**

Research Reactor Experimentation &
Design experience.
UC Berkley PhD in reactor physics.



RICHARD GAUT

CFO

Ex VC. Ex PE. SCF Partners
Wakeforest Physics, Rice MBA



Robbie Mardus-Hall

Head of Engineering

40 years experience in nuclear facilities
design operation and decommissioning
including LWRs, SFRs, LFRs, HTGRs.

Falling Barriers

Policy Drivers

ADVANCE Act 2024

Streamlined NRC licensing, lower fees, factory approvals

NRC Modernization (Part 57)

Risk-informed, microreactor-focused framework

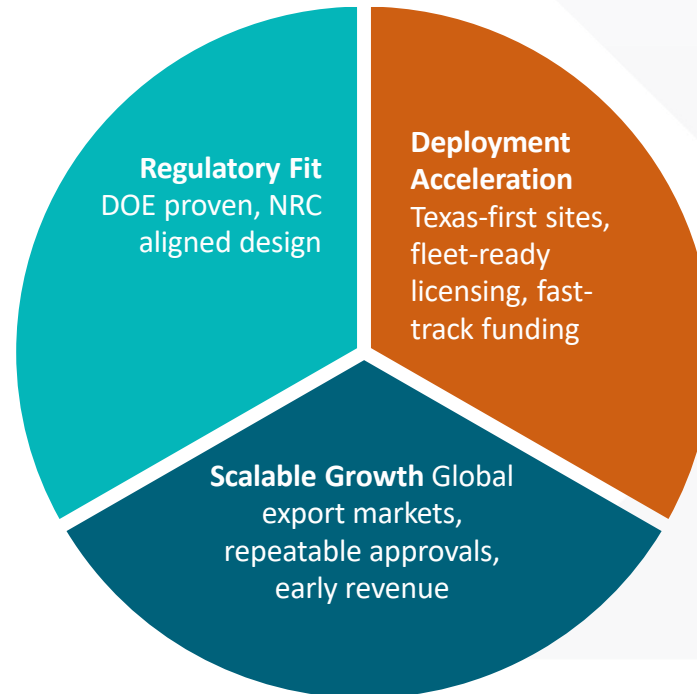
DOE 1271 Modernization

Gamechanging work to meet the President's Call-to-Action

Global Momentum

Tripling nuclear by 2050 creates export-ready opportunity

Deployable Energy leveraging the shift



De-Risked Path to Commercialization

- ✓ Time-to-market measured in months, not years
- ✓ Reduced capital requirements
- ✓ Fleet deployment ensures scalable and predictable returns
- ✓ Export potential expands global TAM
- ✓ Full alignment with policy and market momentum








Facility

- 58 Acres – 36 Undeveloped for expansion
 - 340,000 sq ft State of the Art Facility
 - 80,000 sq ft Robotic Fab Shop
 - 50,000 sq ft CNC Shop
 - 60,000 sq ft Paint & Blast Shop
 - 100,000 sq ft 100t Assembly Hall
- 5 acres of laydown area
- 18 Wheeler Access Through & Through
- Rail Spur Access
- Welcome to see how we make Nuclear a Product



Summary

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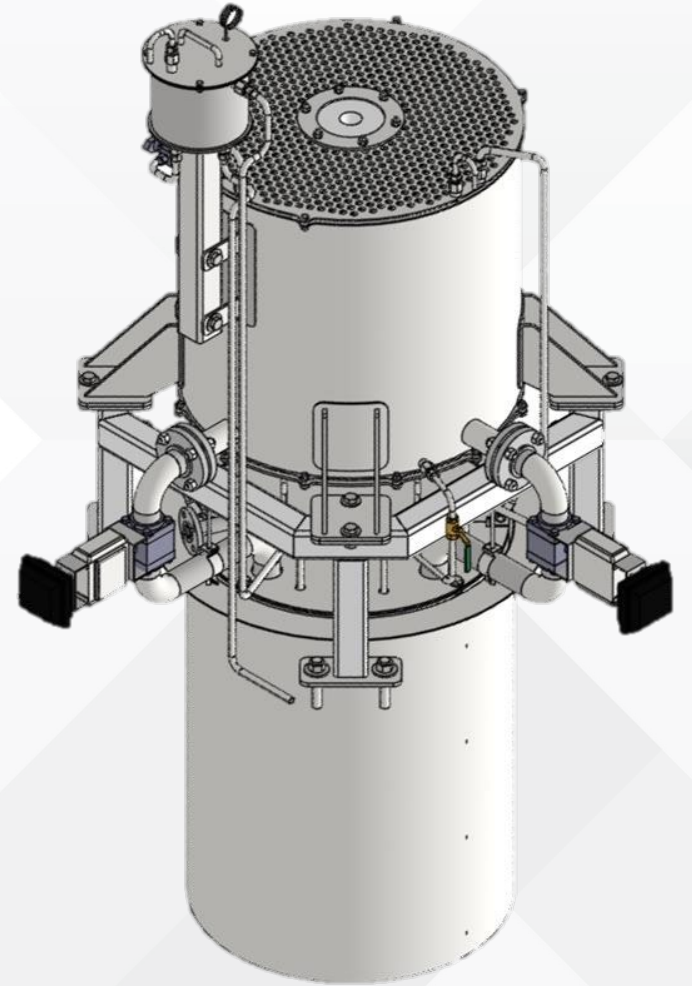
-  Paradigm-shifting strategy for manufactured nuclear power generation on automotive scale. Selected in successor to DOE Reactor Pilot Program
-  Unique 1MW transportable form factor creates universal siting, intrinsically safe and cost competitive design. First Criticality by July 4th
-  Immediately scalable low enriched (5%), commercially available fuel form and reactor design (no exotic materials or process). First fueled core being delivered in April.
-  World-class 340,000 SF manufacturing facility located in America's energy and logistics capital – Houston Tx.
-  \$10B+ in LOIs - Previously inaccessible applications unlocked by microreactor size and containerized design (e.g. islanded grids, maritime, ship-to-shore power)
-  Proven deep-tech founder with engineering and manufacturing pedigree.
-  Heavily credentialed, mission-driven leadership team spanning 200+ years of experience



NRIC

National Reactor
Innovation Center

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5/13/2026

www.nric.inl.gov



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National
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Exceptional service in the national interest

SANDIA NATIONAL LABS

Providing independent engineering,
validation, and systems integration to
accelerate advanced reactor deployment

Dr. Shawn Dirk

*Senior Manager, Nuclear Fuel Cycle & Advanced Reactor
Testing Program*

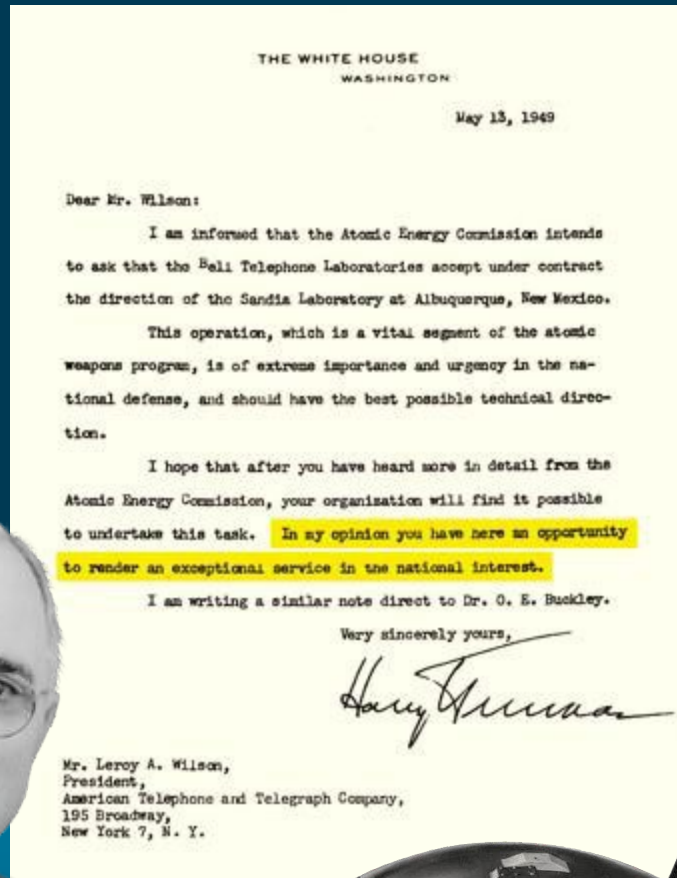
Prepared for 2026 NRIC Program Review



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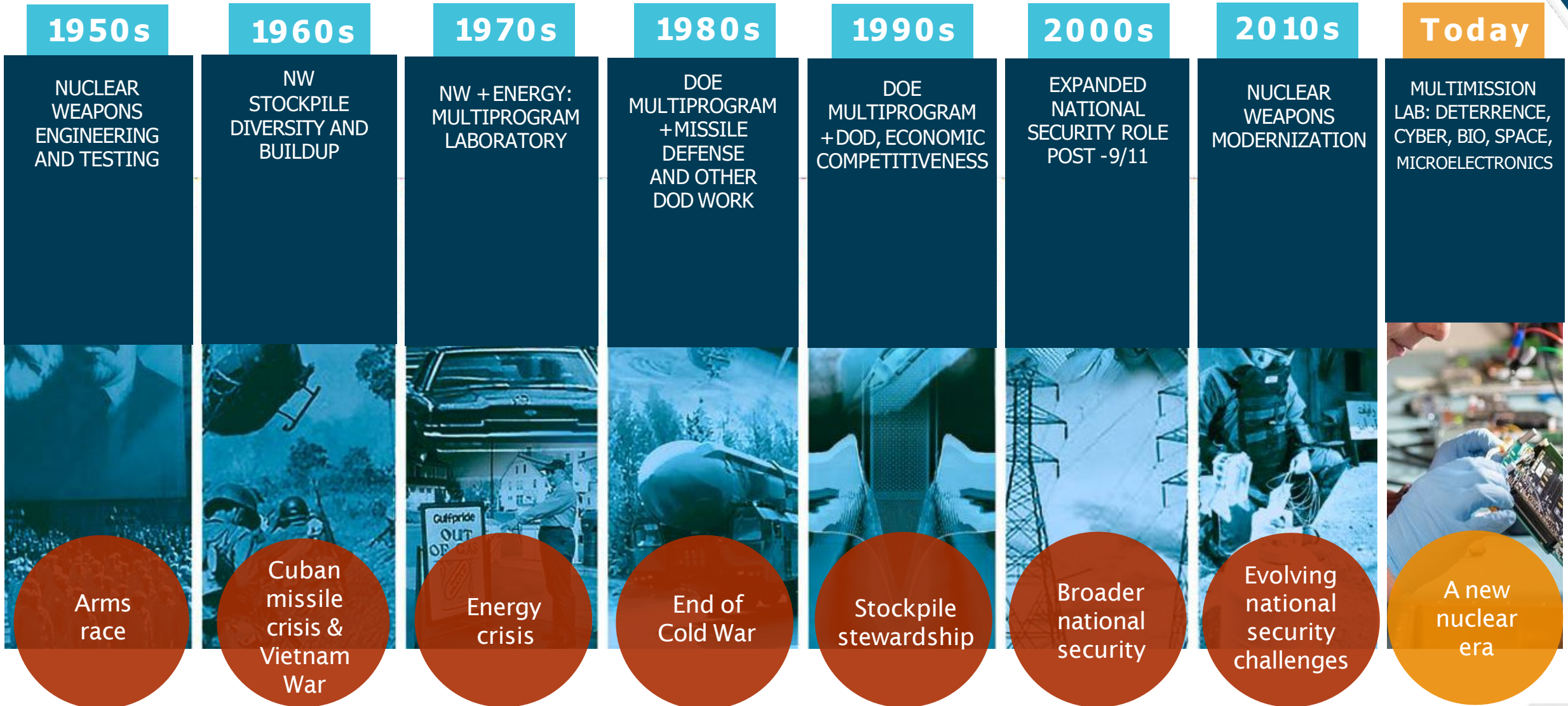
SAND2026-20276PE

OUR HISTORY IS TRACED TO THE MANHATTAN PROJECT



- July 1945: Los Alamos creates Z Division
- Nonnuclear component engineering & systems integration
- Federally Funded Research and Development Center
- November 1, 1949: Sandia Laboratory established
- March 8, 1956: Sandia California officially opened
- AT&T: 1949-1993
 - Martin Marietta: 1993-1995
 - Lockheed Martin: 1995-2017
 - Honeywell: 2017-present

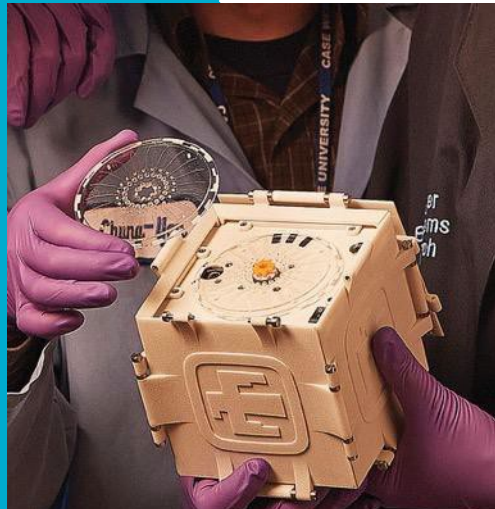
OUR ROLE HAS EXPANDED OVER THE DECADES



E SCIENCE AND ENGINEERING DISCIPLINES UNITE ECHNOLOGIES THAT CHANGE THE WORLD



Sandia pioneered clean room technology to protect the circuitry that controls nuclear weapons. It went on to be used in hospitals, computers and smartphones.



Sandia's mobile SpinDX diagnostic device can test for viruses, bacteria and active toxins in less than an hour while the microneedles technique extracts interstitial fluid to quickly diagnose major illnesses or measure exposure to chemical or biological agents



Sandia found it was possible to build and operate a high-speed passenger ferry and research vessel powered solely by zero-emission hydrogen fuel cells. **The research led to the first fuel cell vessel built in the U.S. and the world's first commercial fuel cell ferry.**



Sandia is a leader in research for Unmanned Aerial Vehicles and associated countermeasures building off our robotics legacy. **Our robotics have been used to reach trapped miners, demilitarize submunitions and disable IEDs.**



An innovative, 27.5-meter wind turbine blade developed by Sandia and industry **produces up to 10 percent more energy** than traditional linear blade designs without increasing wear and tear on the machine

COLLABORATIVE SYSTEMS INTEGRATION FOR **ADVANCED NUCLEAR DEPLOYMENT**



Systems Integration

Leveraging decades of systems integration experience to support end-to-end integration across reactors, balance-of-plant, and grid interfaces



Complementary National Lab Capabilities

Pairing INL's reactor expertise with Sandia's analysis, modeling, and system-level validation.



Advanced Nuclear Deployment

National Security & Nuclear Deterrence Missions

State-of-the-art testing and analysis capabilities built for Sandia's National Security and ND missions are a national resources that can be accessed by industry



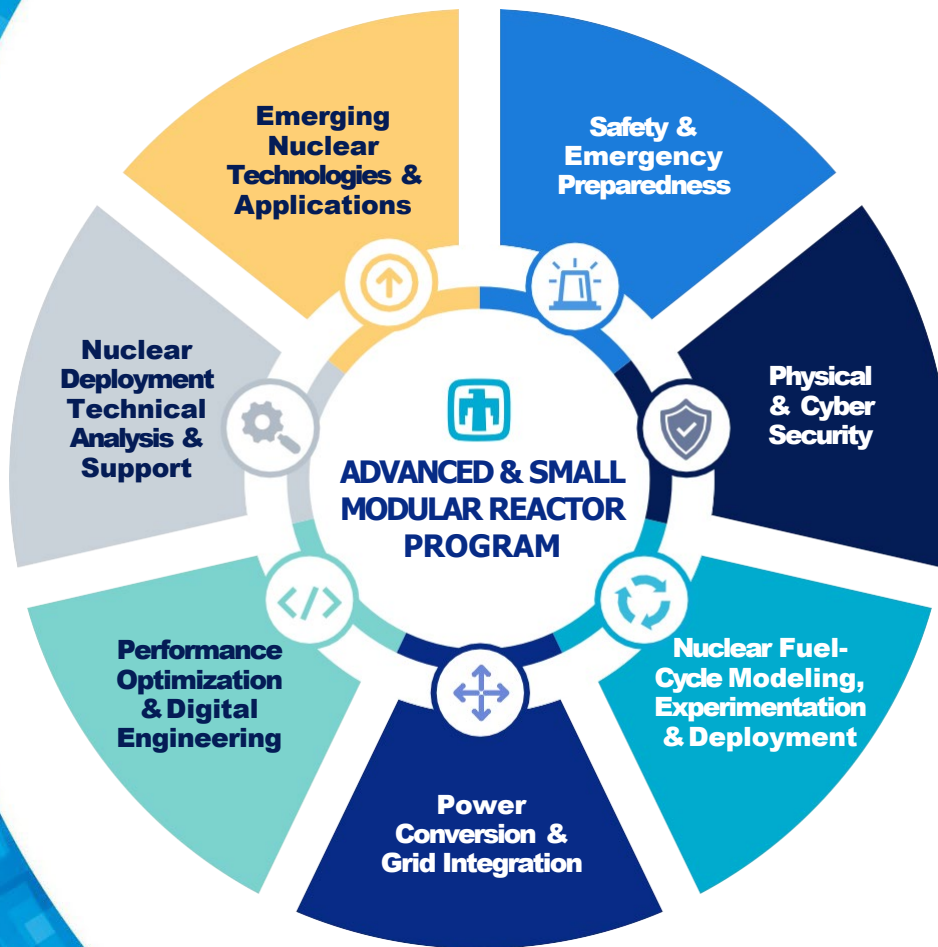
Support for Industry Innovation

Helping industry de-risk new technologies by bringing flexible, independent support backed by deep technical expertise, meeting partners wherever they are in the development cycle.





ENABLING DEPLOYMENT OF A/SMRS



Develop and deploy technical bases for nuclear facility safety, enabling risk-informed, performance-based assessment, response readiness, and mitigation strategies.



Provide risk and threat informed systems engineered security to protect nuclear power plants, fuel cycle facilities & materials.



Deliver fuel-cycle support through analysis, next-generation testing, experimental and computational capabilities, and safe & secure transport of fuels and fueled reactors.



Enable resilient, reliable nuclear energy across electricity, heat, hydrogen, and hybrid systems using advanced power-conversion and grid-integration technologies.



Advance performance optimization and digital engineering to improve reactor evaluation, balance of plant, and large-scale testing, and detailed system modeling for efficiency and control.



Provide independent technical guidance and objective outreach to help communities make informed decisions about nuclear facility siting, workforce planning, and to support resilient domestic power systems.



Enable next-generation nuclear applications with modern design methods, rigorous safety analysis, and AI-augmented technical capabilities.

SANDIA'S CAPABILITIES IN ACTION



HALEU Fuel Fabrication Facility Safeguards

Sandia partnered with Kairos Power and Texas A&M to adapt safeguards performance model for TRISO fuel fabrication facility



Cybersecurity for A/SMRs

Proposed partnership with X-energy and NRC to apply new NRC Cybersecurity standards to X-energy reactor design, including through shared tools and collaborative workshops..



Brayton Cycle Commercialization

Sandia and Antares are collaborating on design and testing of a closed Brayton cycle power block for their ~1MWth reactor.

A SELECTION OF SANDIA'S TESTING FACILITIES



- Combustion Research Facility (CRF)
- Concentrated Solar Tower Test Facility (CSTTF)
- CYBL Test Facility
- Design, Evaluation, and Test Technology Facility (DETTF)
- Engineering Sciences Experimental Facilities (ESEF)
- Explosive Components Facility (ECF)
- Ion Beam Laboratory
- Materials Science and Engineering Center (MSE)
- MESA (Microsystems and Engineering Sciences Applications) complex
- Mechanical Test and Evaluation Facility (MTEF)
- Nuclear Facilities Resource Center (NUFAC)
- Shock Thermodynamic Applied Research Facility (STAR)
- Thermal Test Complex (TTC)
- Advanced Reactor Technologies and Advanced Fuel Concepts (aka ATF)
- Physical Security Vulnerability Assessments

SANDIA PARTNERSHIP OPPORTUNITIES

SANDIA OFFERINGS:



Collaborative Research



Licensing Opportunities



Small Business Assistance



Cutting-edge Equipment and Facilities



Technical Expertise



Connection to Communities of Innovators



PARTNER TYPES




Business, Industry & Non-Profits



Universities



Government Agencies



Other National Labs



PARTNERSHIP MECHANISMS:



Cooperative Research and Development Agreement (CRADA)

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License

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Technology Deployment Centers

Streamlined access to Sandia facilities, equipment, and personnel (not intended for use when IP may be generated)



New Mexico Small Business Assistance (NMSBA) and Technology Readiness Initiative (TRGR)

Provides New Mexico small businesses facing technical challenges access to the unique expertise and capabilities of Los Alamos and Sandia labs at no cost to them.



THANK YOU!



May 6, 2026 | NRIC Program Review

Accelerating Reactor Deployment: ORNL Capabilities

Gale Hauck, PhD, MBA

Technical Area Lead, DOE Microreactor Program

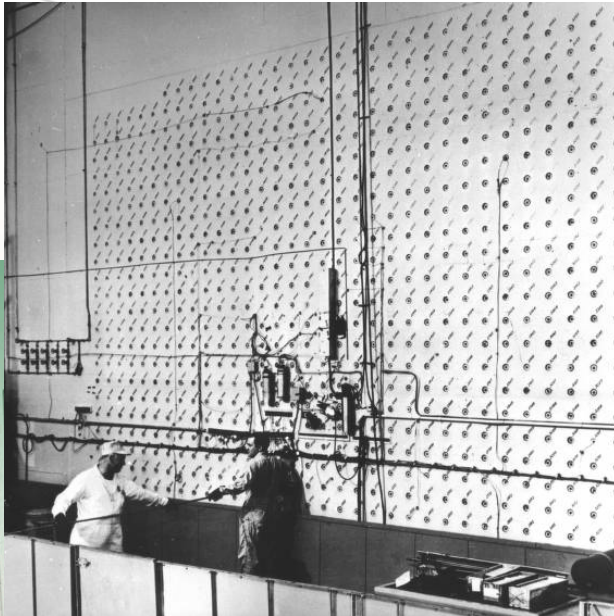


U.S. DEPARTMENT
of **ENERGY**

ORNL IS MANAGED BY UT-BATTELLE LLC
FOR THE US DEPARTMENT OF ENERGY



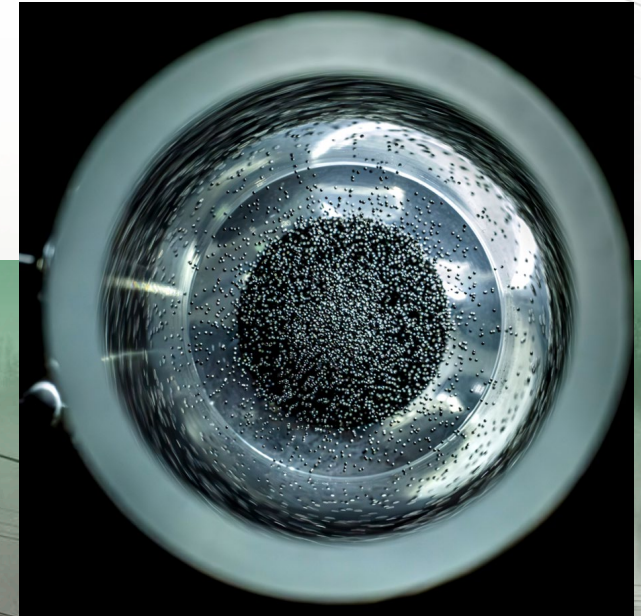
80 Years of Nuclear Innovation Applied to Deployment Today



Advanced Reactors

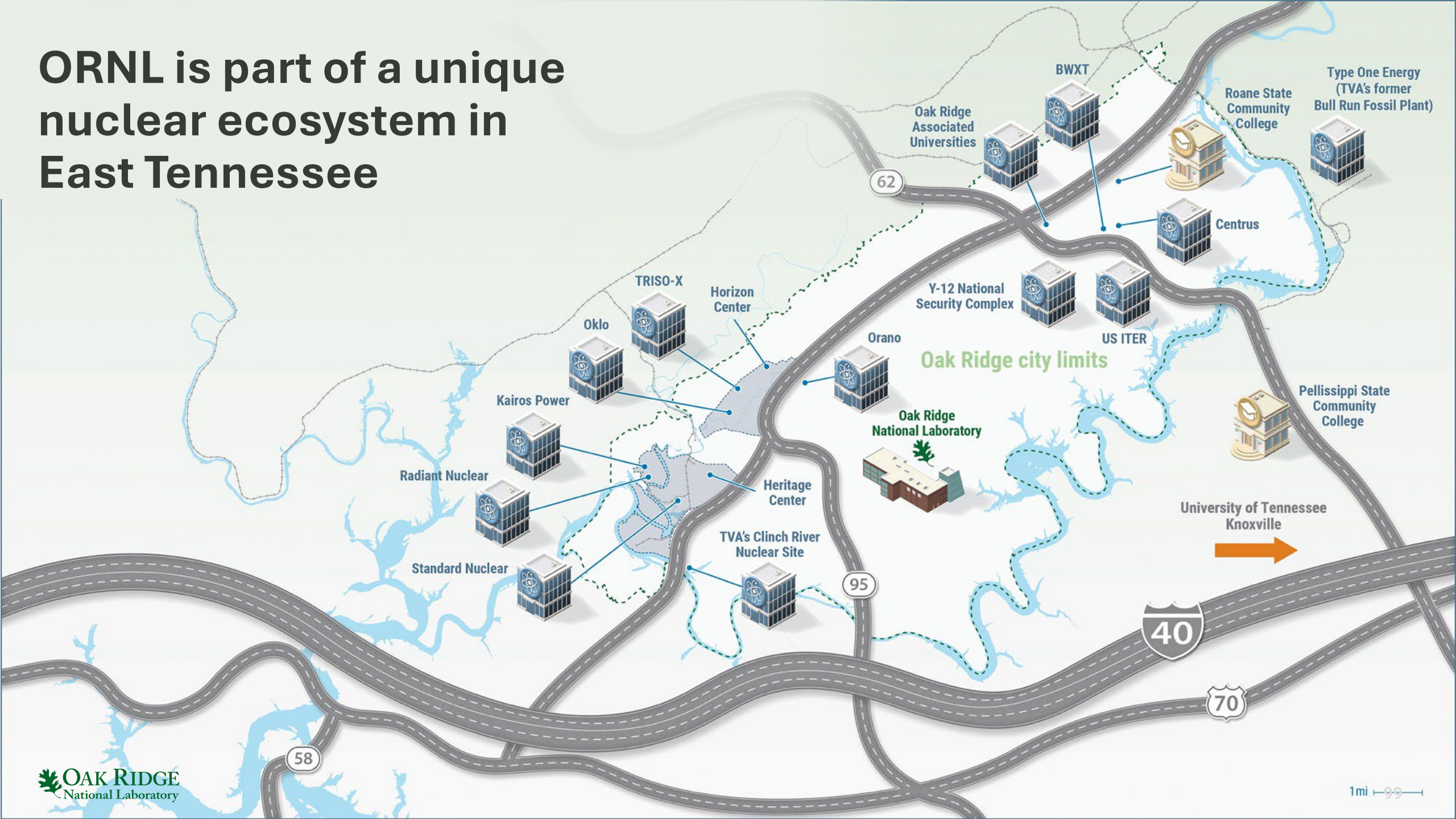


Isotopes and
Scattering



Advanced Fuel Forms

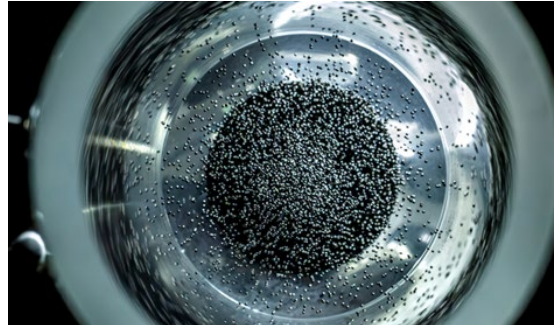
ORNL is part of a unique nuclear ecosystem in East Tennessee



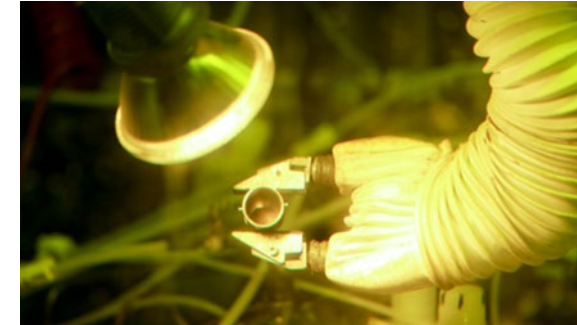
ORNL Capabilities Address Key Constraints to Reactor Deployment



Component and System Testing



Fuel Development and Qualification



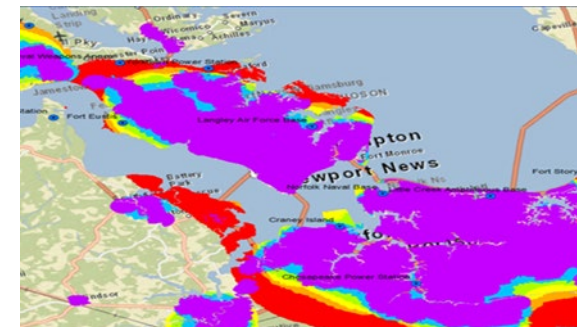
Irradiated Fuel and Materials Examination



Fabrication and Supply Chain



Transportation and Logistics



Siting and Deployment Planning

Integrated Testbeds Enable Pre-Deployment System Validation

Component and subsystem testing in representative environments

- Pumps, heat exchangers, materials, instrumentation

Integrated test platforms

- Molten salt loops
- Radiation and instrumentation testbeds
- Severe accident testing

Impact:

- Validate performance prior to deployment
- Reduce technical risk before construction
- Generate data for design and licensing



Development and Qualification of Advanced Fuel Forms

TRISO fuel development with industry

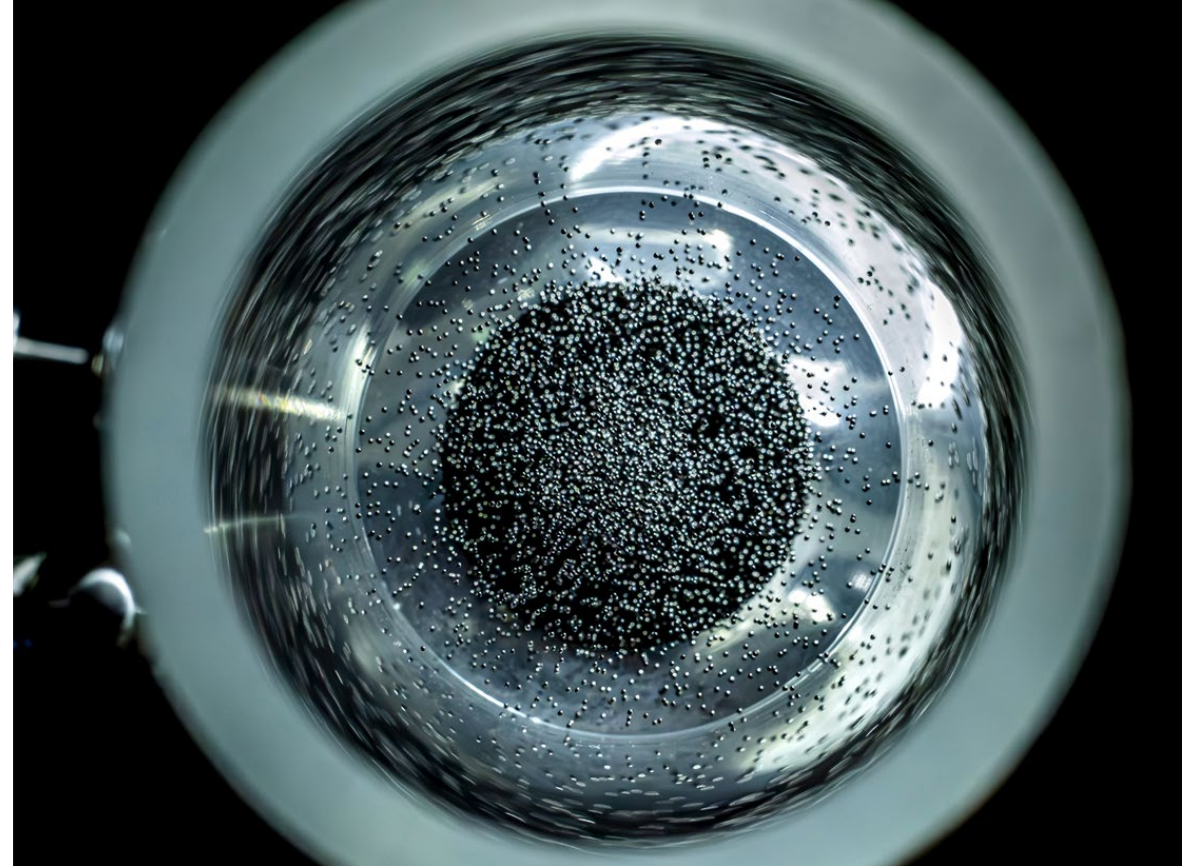
- Active partnerships with advanced reactor developers (e.g., X-energy, BWXT)
- Support for fuel qualification programs and licensing data packages

Integrated fuel capability

- Fabrication of TRISO particles and fuel compacts
- Irradiation testing in high-flux environments
- Post-irradiation examination to assess performance and failure modes

Impact

- Generate fuel performance data under representative conditions
- Support licensing and fuel qualification pathways
- Enable deployment of TRISO-based reactor designs



Extensive Hot Cell Infrastructure Enables Fuel Qualification and Advanced Reactor Deployment



Comprehensive hot cell capabilities

- Alpha and beta-gamma facilities supporting a wide range of irradiated fuels and materials
- Multiple specialized facilities enabling diverse examination and processing functions

Post-irradiation examination and analysis

- Characterization of fuel performance and failure mechanisms
- Materials behavior under irradiation
- Radiochemical analysis and sample preparation

Impact

- Supports fuel qualification and regulatory review
- Enables higher burnup and improved fuel performance
- Provides validated data on irradiated fuel and materials behavior

Manufacturing Demonstration Facility Enables Deployment-Ready Nuclear Components

Demonstrated fabrication of nuclear components

- Safety-related hardware installed in operating reactors
- Printed components deployed in high-radiation environments

Engineering-scale manufacturing capability

- Large-scale metal and polymer additive manufacturing
- Complex, high-performance component fabrication

Impact:

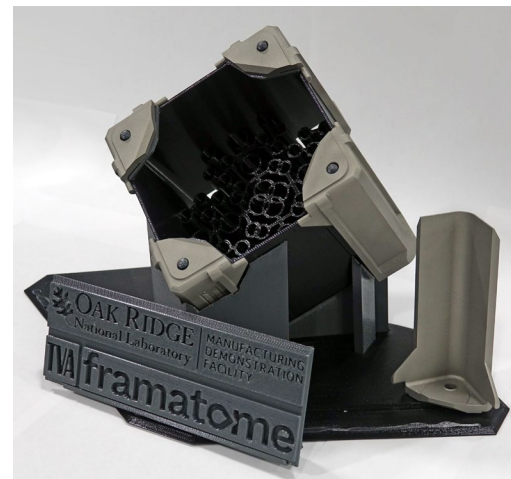
- Reduce fabrication timelines
- Enable design architectures
- Support component qualification



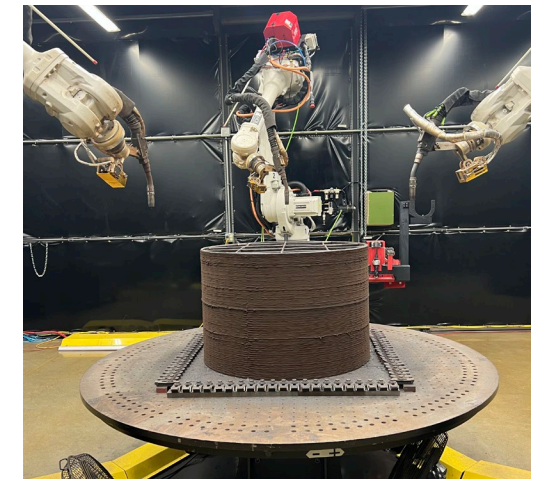
Large format polymer printing technology industrially commercialized for nuclear infrastructure



Rabbit capsules—small sample holding devices—are the first pressure-retaining components printed and installed in HFIR



Fabricated safety related hardware installed in TVA's Browns Ferry reactor



Large-scale metal AM for high-performance SNF canister design and demonstration

National Transportation Research Center and testing facilities support full-scale package evaluation

Certified testing of transport packages

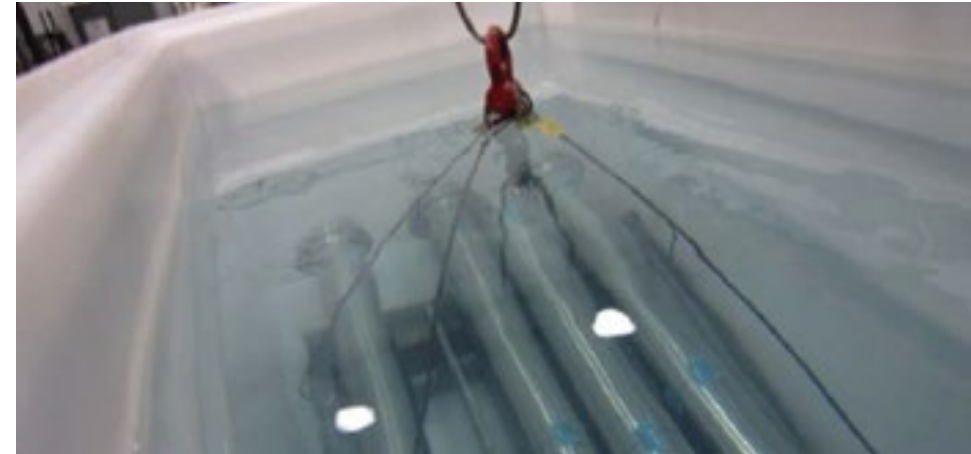
- Drop, crush, puncture, thermal, and vibration testing

Integrated analysis and design support

- Structural and impact modeling
- Evaluation of packaging and shielding concepts

Impact

- Support regulatory certification of transport systems
- Reduce deployment risk and delays
- Enable safe, practical movement of reactor components



Siting and System Analysis Enable Faster, More Cost-Effective Reactor Deployment

Screen and evaluate candidate sites

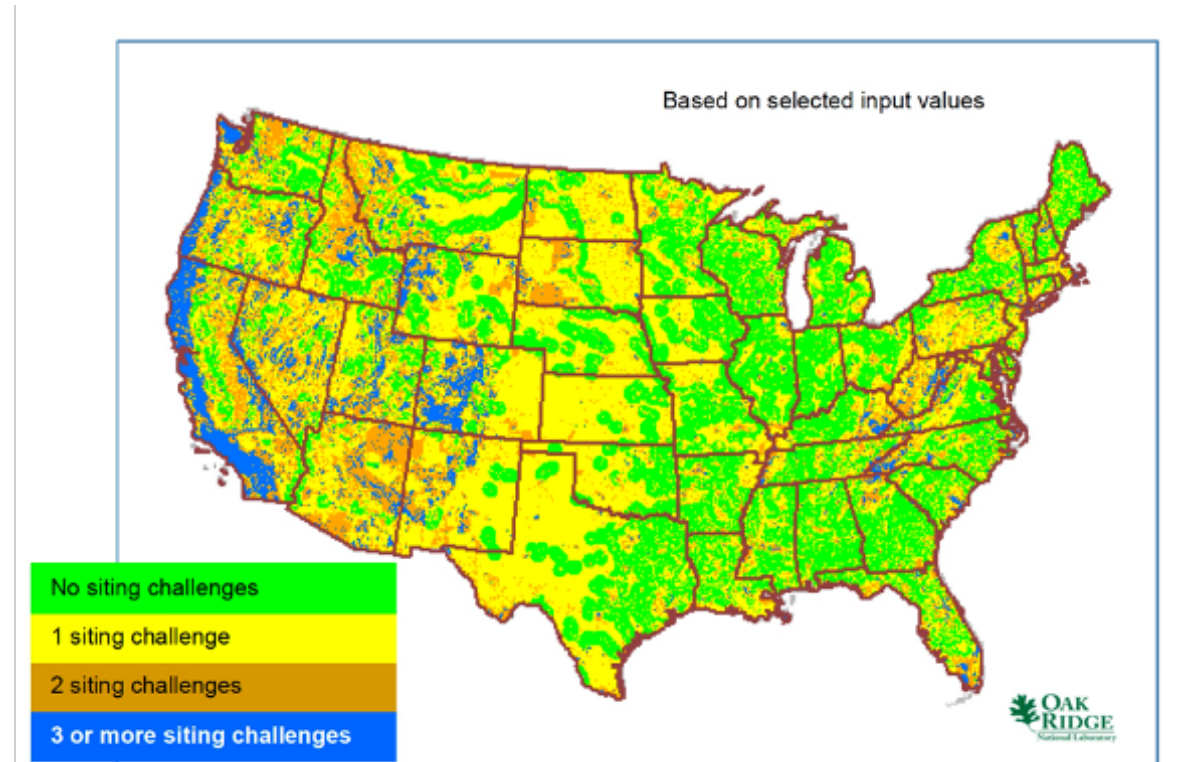
- National-scale screening using geospatial datasets (population, infrastructure, environmental constraints)
- Identification of sites aligned with regulatory and safety requirements

Assess system performance and deployment options

- Evaluate plant configurations, operational scenarios, and failure impacts
- Analyze integration with end-use applications (e.g., data centers, industrial heat)

Enables developers to:

- Identify sites with fewer siting and licensing barriers
- Compare deployment options across locations and use cases
- Improve project viability and scalability beyond first deployment



Supported by ORNL tools including OR-SAGE, RISSE, GALE, and TRANSFORM

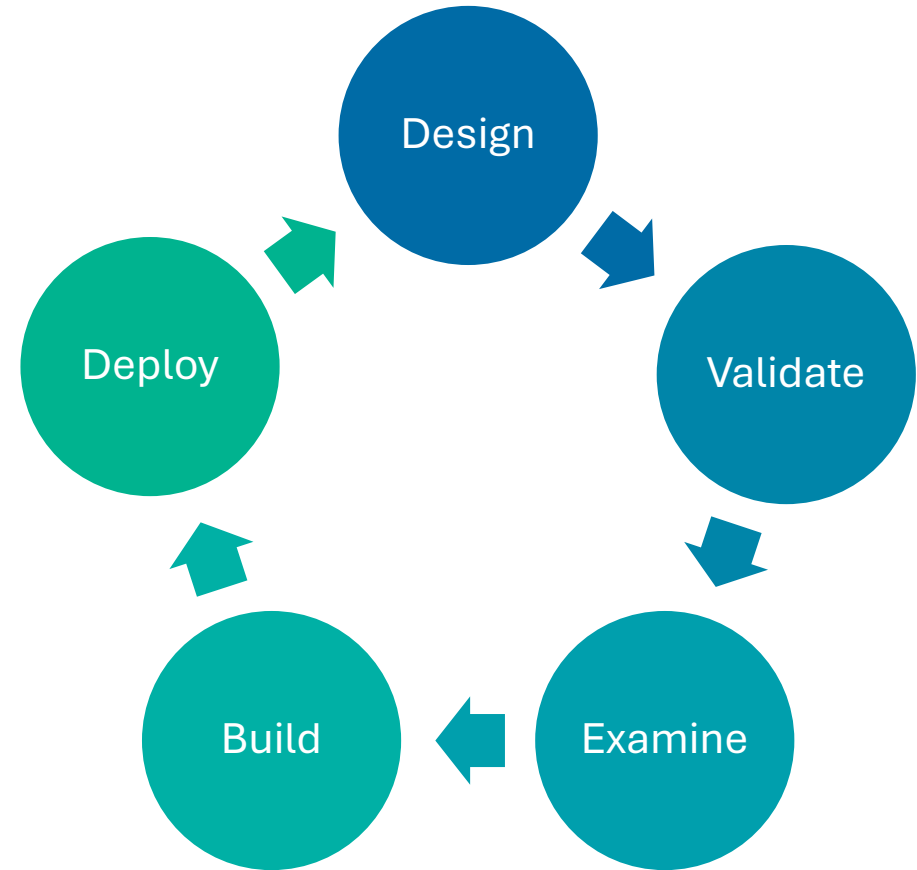
ORNL Capabilities Support Deployment Across the Reactor and Nuclear Facility Lifecycle

Key activities

- Testing
- Fuel development
- Irradiation & examination
- Manufacturing
- Transportation
- Siting

Application

- Used across multiple stages of development
- Results inform design and deployment decisions





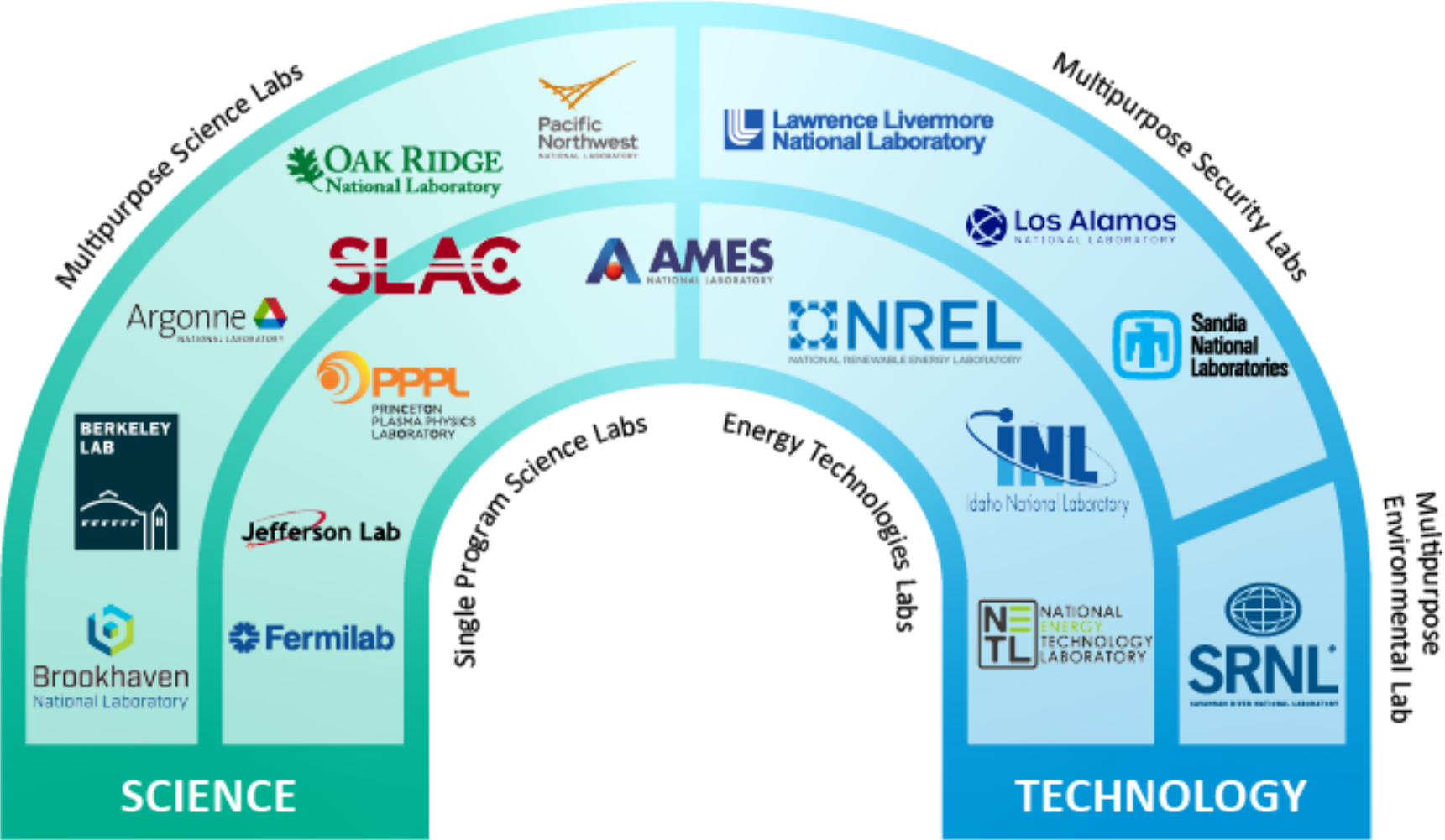
NRIC Program Review –
SRNL Overview



Bill Bates
Deputy ALD, Env. & Legacy
Mgt.

May 2026

A Spectrum of Science and Technology



Driving Success Through Teamwork

SRS Contractors

- **Battelle Savannah River Alliance, LLC**
Management and operations of Savannah River National Laboratory
- **Centerra Group, LLC**
SRS Security
- **Savannah River Mission Completion, LLC**
Liquid waste operations
- **Savannah River Nuclear Solutions, LLC**
Management and operations of SRS
- **University of Georgia**
Savannah River Ecology Laboratory

The Savannah River Site

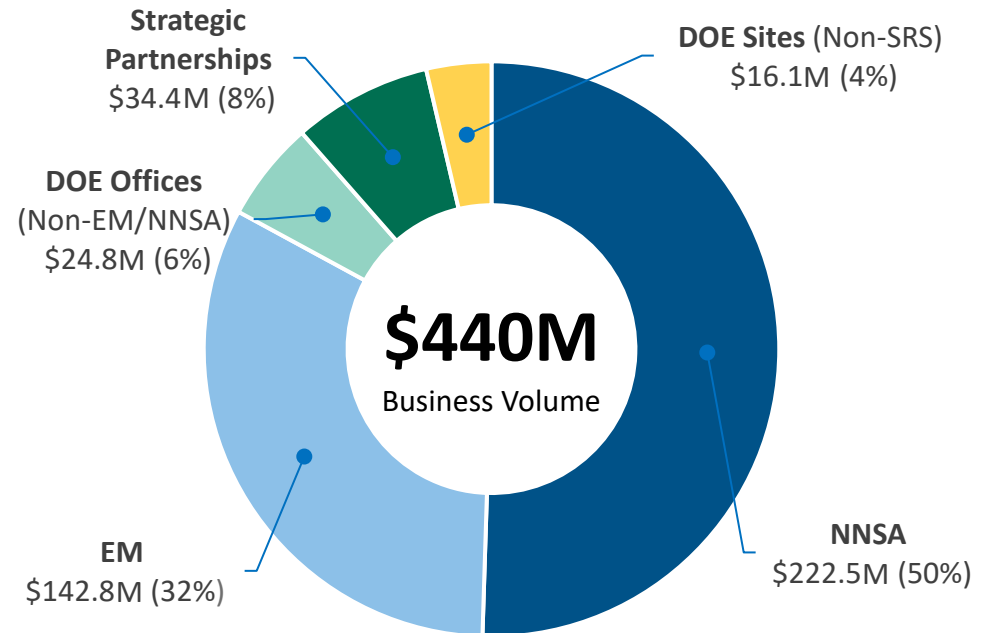
SRS is a 310-square-mile site located near Aiken, S.C., on the Savannah River, which borders South Carolina and Georgia. SRS covers 198,046 acres, including parts of Aiken, Barnwell and Allendale counties in South Carolina. The SRS annual budget is approximately \$3.8 billion, with a workforce of about 12,700.



SRNL At-a-Glance

- 1400+ employees
- 39-Acre Campus located on the Savannah River Site
- 15 nuclear facilities:
 - 200,000 square-feet of radiologically controlled laboratories
 - 73,000 square-feet in leased facilities
- Advanced Manufacturing Collaborative Facility
 - 63,000 square-feet of lab and office space

FY 2025 Program Execution



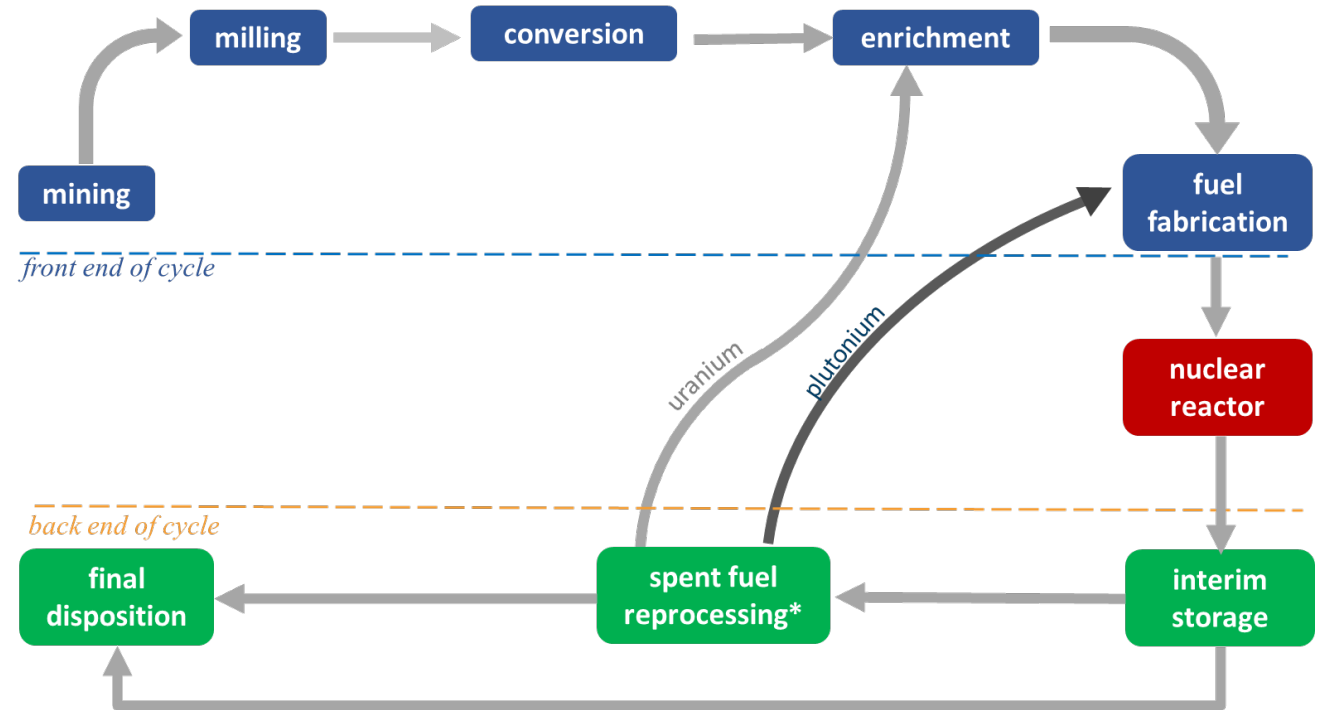
Enabling Next-Generation Nuclear Material Processing & Disposition

- Includes Wide Range of Nuclear Materials Processing & Disposition Technologies

- Packaging & Transportation
- Safe Storage & Surveillance
- Processing — Recovery & Separations
- Analytical/Measurements
- Disposition “Back-End”

- ANCHOR - Accelerating Nuclear Cleanup – High Opportunities & Risks

- Focuses on:
 1. Future Advanced Rx & Process Backend/Disposition needs
 2. Cleanup of existing DOE legacy sites



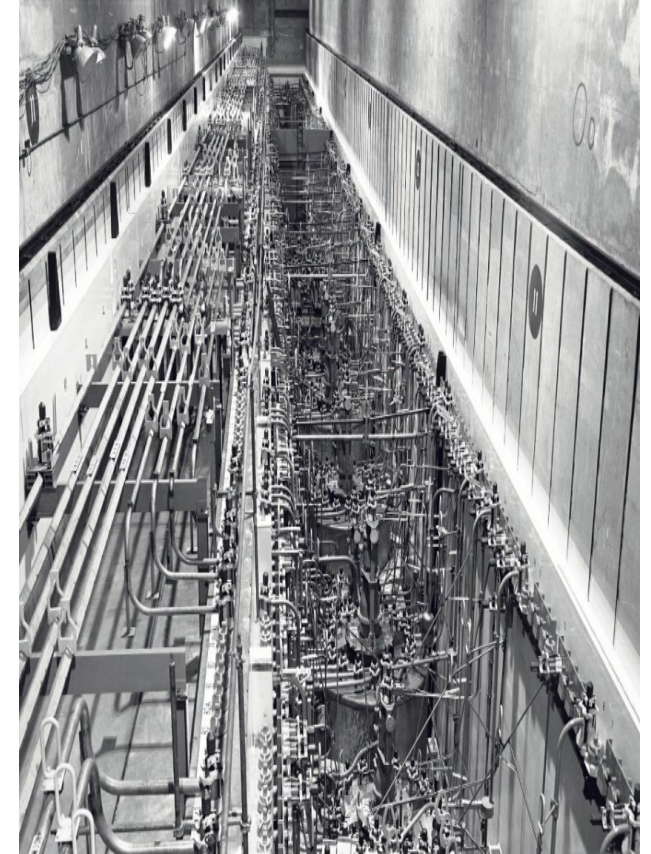
SRNL & the Nuclear Fuel Cycle — Enrichment

- Highly-Enriched Uranium Blend-Down (HEUBD)
 - NNSA Blended LEU Program
 - Historically 4.95% U²³⁵ Enrichment for TVA
- High Assay Low-Enriched Uranium (HALEU)
 - Needed for Advanced Reactors & Research Reactors
 - Nominally 10-19.75% U²³⁵ Enrichment
 - Developed Extensive Suite of Analyses for ASTM Specifications
 - Performed Sample Blends
 - Working on Shipping Package Certification
 - Uranyl Nitrate HALEU

SRNL develops and validates dissolution and processing flowsheets for SRS facilities



H-Canyon Processing Facility

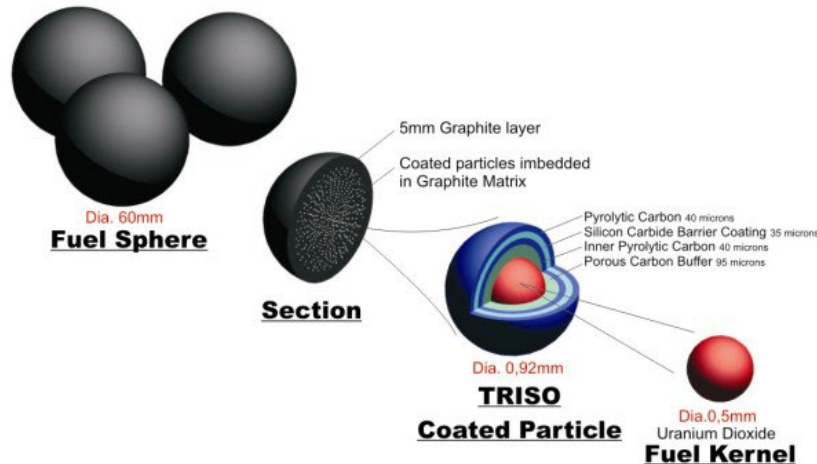


Inside H-Canyon

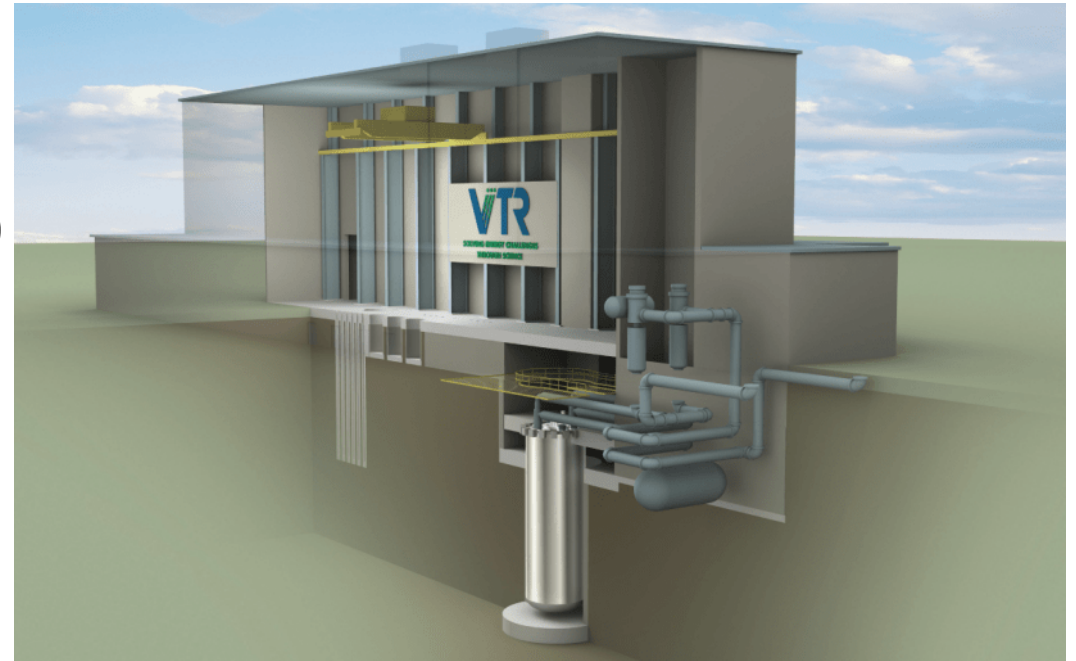


SRNL & the Nuclear Fuel Cycle — Fuel Fabrication

- Historical Competencies for SRS Production Reactors
- NNSA U.S. High Performance Research Reactor (USHPRR) Program
 - Scrap Recovery (HALEU)
- NE Accident Tolerant Fuel Design
- NE Versatile Test Reactor (VTR) Fuel Fabrication Process
- Advanced Nuclear Industry Interest in Fuel Fab & Siting (RFP)



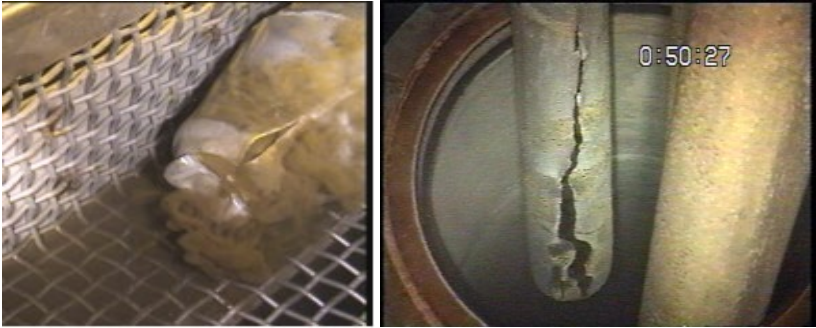
High Temperature Gas Reactor Fuel



<https://www.energy.gov/ne/versatile-test-reactor>

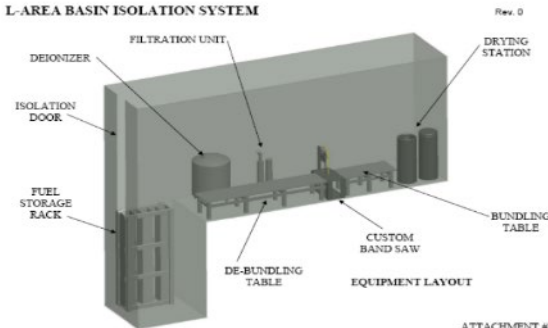
SRNL & the Nuclear Fuel Cycle — Interim Storage

- Spent Nuclear Fuel (SNF)
 - EM Augmented Monitoring & Condition Assessment Program (AMCAP)
 - Aluminum Clad — Fuel Corrosion
 - Non-Aluminum Clad — Container Galvanic Corrosion
 - NE Corrosion of Dried Commercial SNF
 - EM Aluminum SNF Drying for Repository
- Plutonium Storage
 - 3013 Surveillance Program
 - 9975 Surveillance Program



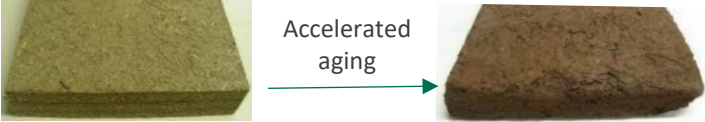
B-Can 2319

HWCTR Oversized Can A5



Page 1 of 1

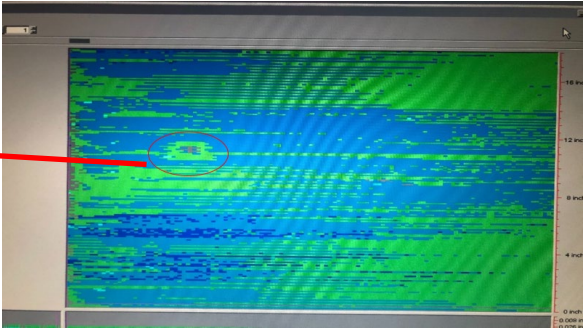
ATTACHMENT # M-ESR-L-00028



Accelerated aging

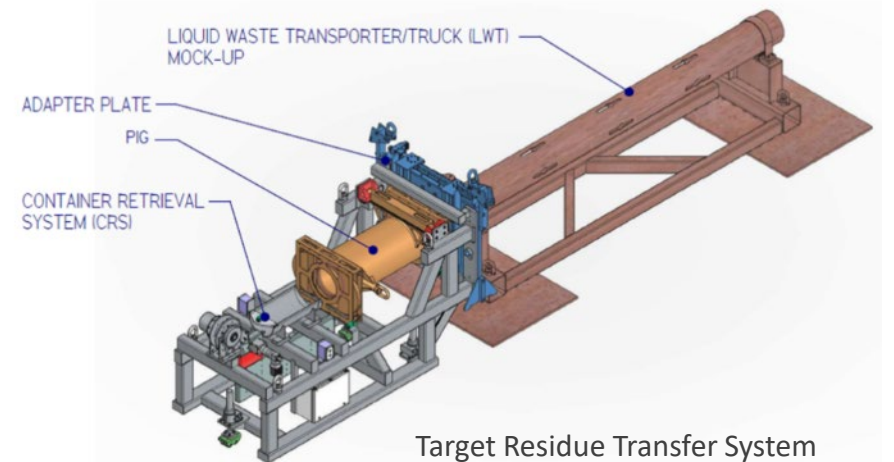


Accelerated aging



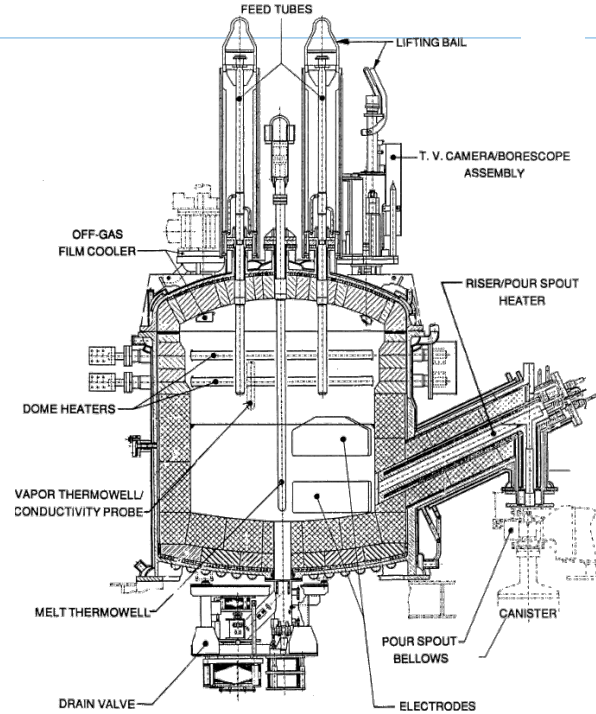
SRNL & the Nuclear Fuel Cycle — Processing

- SRS Canyon Processing Flowsheets
 - Pu, HEU, Isotope (Element) Recovery — Numerous Campaigns
 - Recent Target Residue Material
- Electrolytic Dissolution — Non-Aluminum Fuels
- MK18A Target Processing — Pu²⁴⁴, Heavy Curium
- Graphite TRISO Processing Patents
- ARPA-E Programs
- RFP, RFI, RFA...
- Next Generation Processing



SRNL & the Nuclear Fuel Cycle — Final Disposition

- Wasteforms — Grout, Vitrified Glass, Alloys
- SRS Flowsheet Optimization
 - Defense Waste Processing Facility (DWPF)
 - Salt Waste Processing Facility (SWPF)
 - Tank-Side Cesium Removal (TCCR)



- The DWPF started processing radioactive waste in 1996
 - Melter 1 operated from 1996-2002 and poured more than 1300 canisters of glass
 - Melter 2 operated from 2003-2017 and poured 2,818 canisters of glass
 - Melter 3 is currently in operation



- TCCR started processing radioactive waste in 2019
 - Bridged salt waste treatment between MCU (modular solvent extraction) closure and SWPF startup
 - Successful operation continues beyond initial demonstration
- Hanford & SRS Tank Waste Disposition
 - Supplemental Low Activity Waste Treatment (SLAW)
 - R&D Roadmap
 - Organic Removal/Treatment
- SRNL led NDAA Mandated FFRDC Teams with NAS in 2017 and 2021