An Oklahoma Solution to a National Challenge

Oklahoma's Nuclear Lifecycle Innovation Campus

Jeff Starling, Oklahoma Secretary of Energy & Environment

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What Is a Nuclear Lifecycle Innovation Campus — and How Did We Get Here?

THE PATH TO TODAY

A national need for domestic nuclear capacity across the full lifecycle

Oklahoma's Response to Request for Information, backed by state leadership

Now one of five finalists

WHY OKLAHOMA ADVANCED

A campus of connected nodes, not a single facility

Including the end of the fuel cycle is what set Oklahoma apart

Co-location only works with local participation — that is why this room matters

NODE 1

Reactors & Isotopes

NODE 2

Fuel Cycle

NODE 3

Used Fuel Management

The Proposal: One Campus, Three Nodes

An integrated approach

NODE 1

Reactor Deployment and Isotope Production

Clean baseload power, co-located medical and industrial isotopes

NODE 2

Fuel Cycle: Enrichment Through Recycling

The full middle of the fuel cycle on one site

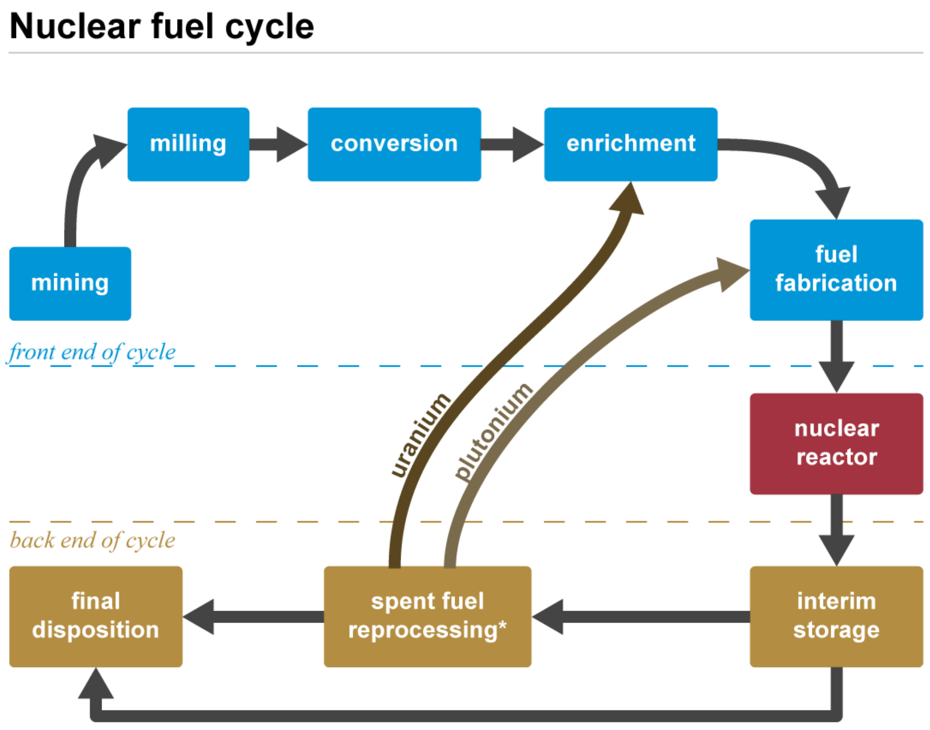
NODE 3

Used Nuclear Fuel Management

Permanent management via deep borehole technology

Named partners are anchor partners, not the full and final roster. Every figure in this deck is the floor, not the ceiling — each node is designed to support additional operators as the campus grows.

The Nuclear Fuel Cycle



*Spent fuel reprocessing is omitted from the cycle in most countries, including the United States.

The nuclear fuel cycle describes the sequence of activities required to produce nuclear fuel, generate electricity, and safely manage used nuclear materials.

Three Parts of the Fuel Cycle:

- **Front end:** produce the fuel
- **Reactor:** use the fuel to generate electricity
- **Back end:** manage the fuel once it is used

One Campus, Three Nodes

The full picture, combined across the campus

NODE 1	NODE 2	NODE 3
Reactor Deployment & Isotope Production	Fuel Cycle: Enrichment Through Recycling	Used Nuclear Fuel Management

COMBINED CAMPUS FOOTPRINT

~1,040 acres

SURFACE FOOTPRINT — COMBINED, FLOOR NOT CEILING

800–2,000 acres

SUBSURFACE FOOTPRINT — NODE 3 ONLY, DEPENDS ON SITING

CAMPUS REQUIREMENTS

- Grid interconnection and power access across all three nodes, with Node 2 carrying the highest demand
- Rail access in and out, for isotope distribution, fuel cycle materials, and Node 3 emplacement logistics
- Site footprint per node is a floor, not a ceiling — room to add operators and acreage as partners are finalized
- Thorough geological assessment and a defined transportation and licensing pathway for the disposal node

Figures combine current partner commitments across all three nodes and are floors, not ceilings. Requirements will be refined during site-specific engineering and community engagement.

Oklahoma's Process

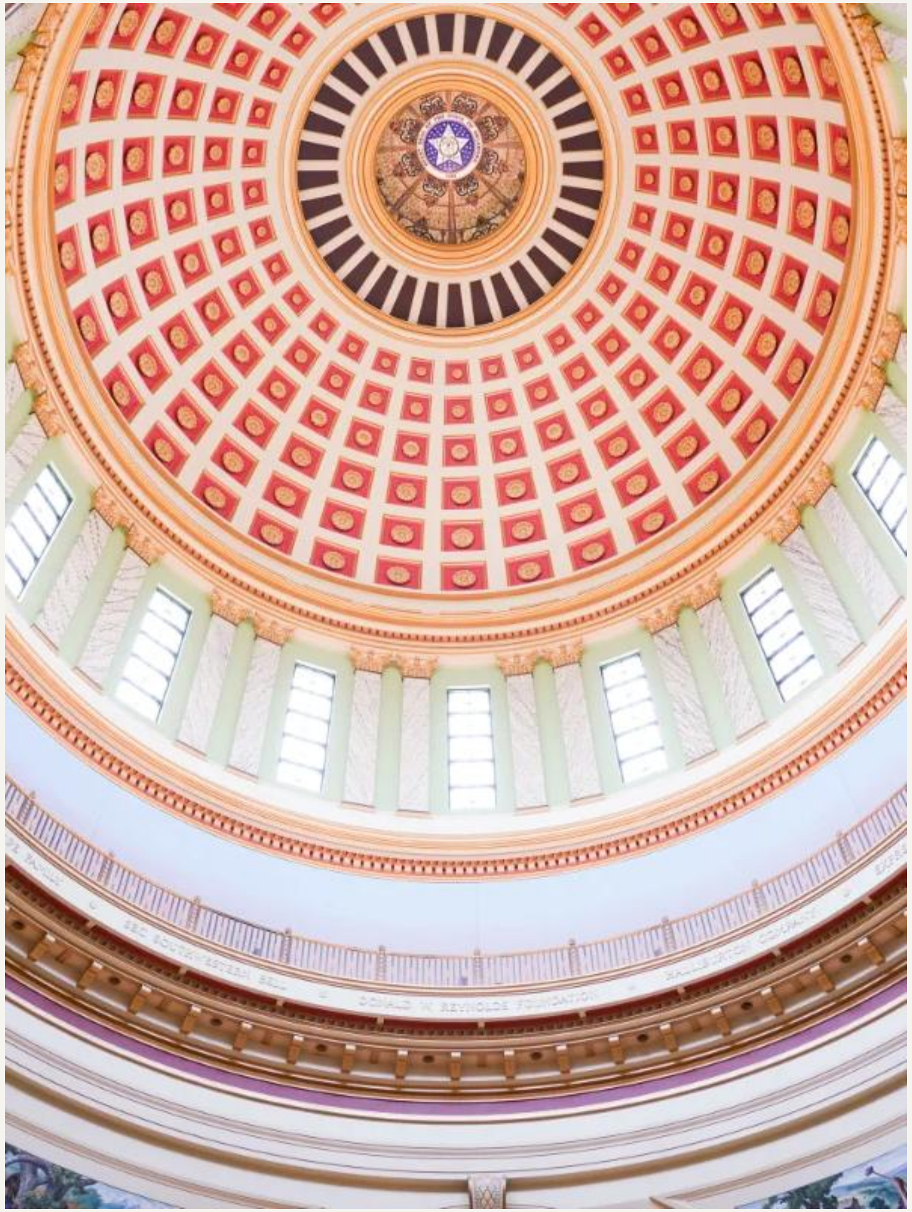
Voluntary and transparent

Widespread Support for NLIC by Oklahoma's Leaders

Substantial Economic Opportunity and Development

Community Needs and Social License

Oklahoma sought this opportunity to provide a solution —
and with Oklahoma communities we will succeed



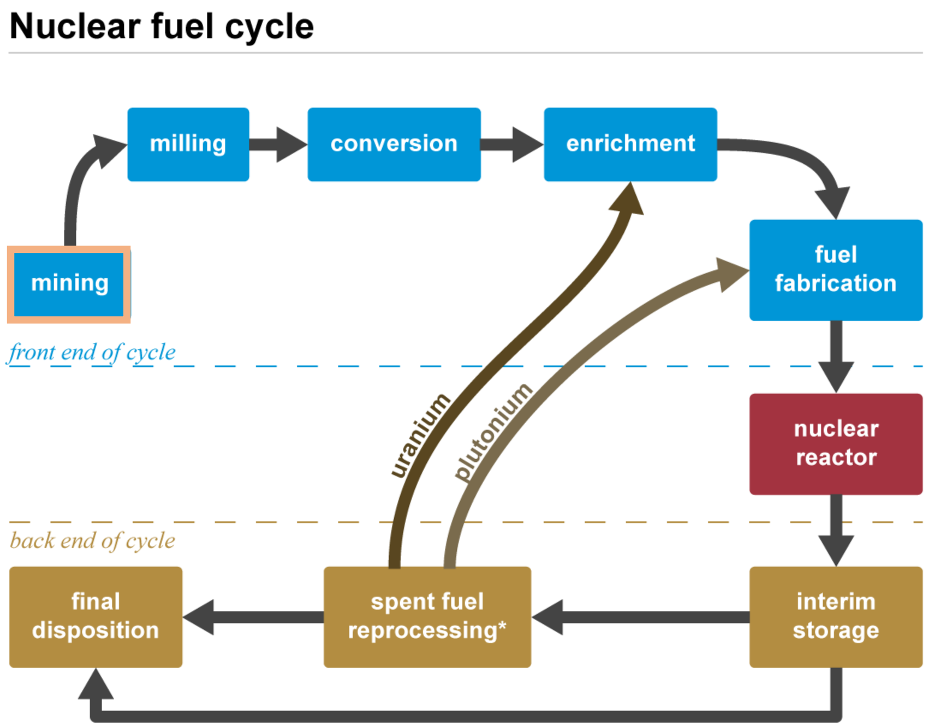
Understanding the Nuclear Fuel Cycle

An introduction to how nuclear fuel is made, used, and managed in the United States

Kuhika Gupta

Senior Research Fellow, Research Impact and Policy Translation
Office of the Vice President for Research and Partnerships
Research Scientist III, Institute for Public Policy Research and Analysis (IPPRA)

The Front End: Making Nuclear Fuel

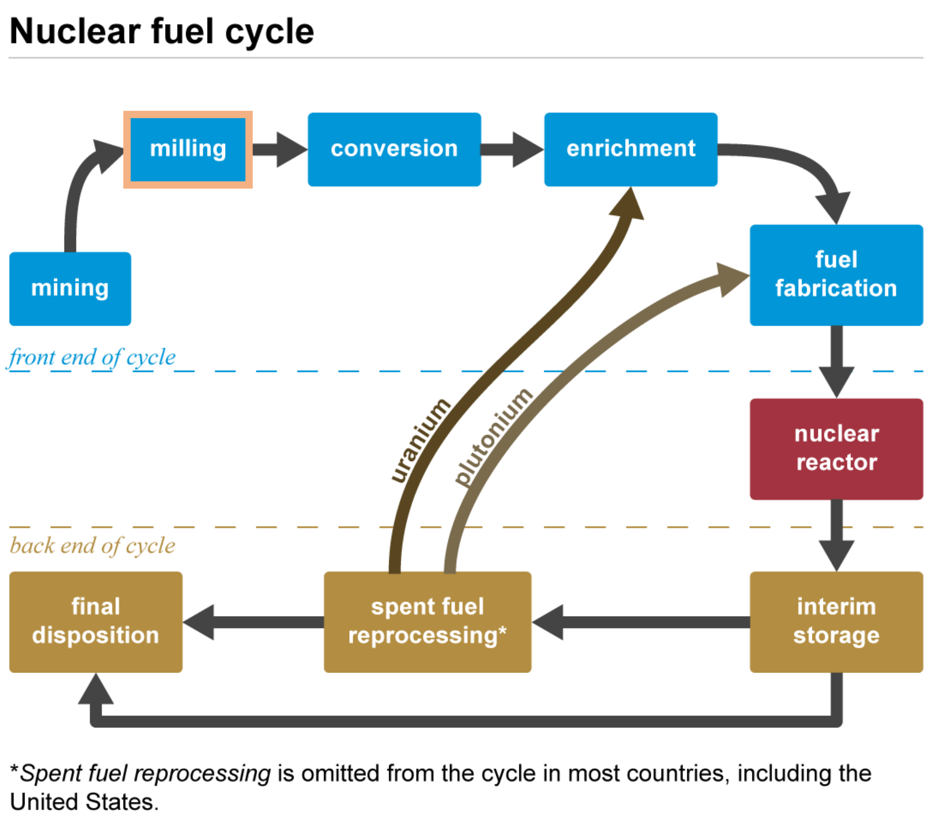


Spent fuel reprocessing is omitted from the cycle in most countries, including the United States.

Mining: Uranium is recovered from naturally occurring deposits in the earth.

Most uranium used by U.S. nuclear power plants is imported, though domestic uranium production (7%) is increasing. Major suppliers include Canada (32%), Kazakhstan (28%), and Australia (15%).

The Front End: Making Nuclear Fuel

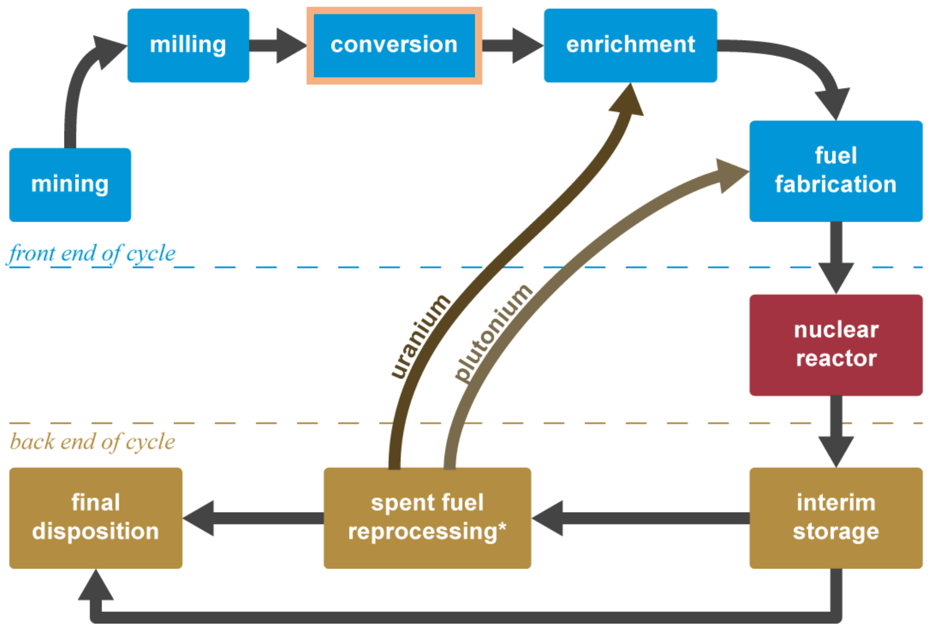


Milling: Uranium is separated from mined ore or uranium-bearing solutions and concentrated into a powder called yellowcake.

Most milling for uranium used by U.S. nuclear power plants occurs outside the United States, typically near the mine where the uranium is produced.

The Front End: Making Nuclear Fuel

Nuclear fuel cycle



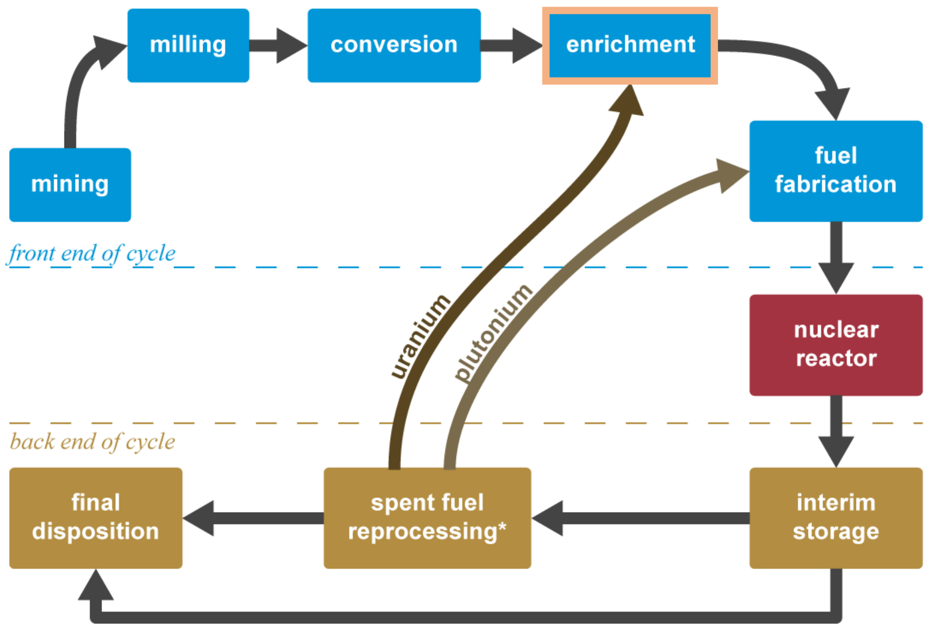
**Spent fuel reprocessing* is omitted from the cycle in most countries, including the United States.

Conversion: Yellowcake is purified and converted into uranium hexafluoride (UF_6), a chemical form that can be heated into a gas for enrichment.

Much of the uranium conversion for U.S. commercial reactor fuel occurs outside the United States, though domestic conversion capacity is expanding.

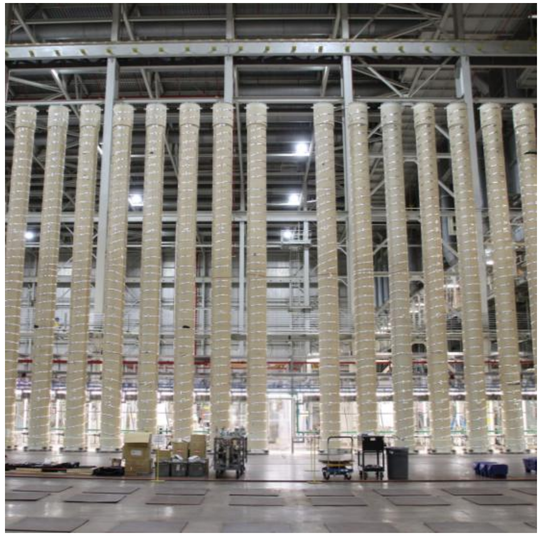
The Front End: Making Nuclear Fuel

Nuclear fuel cycle



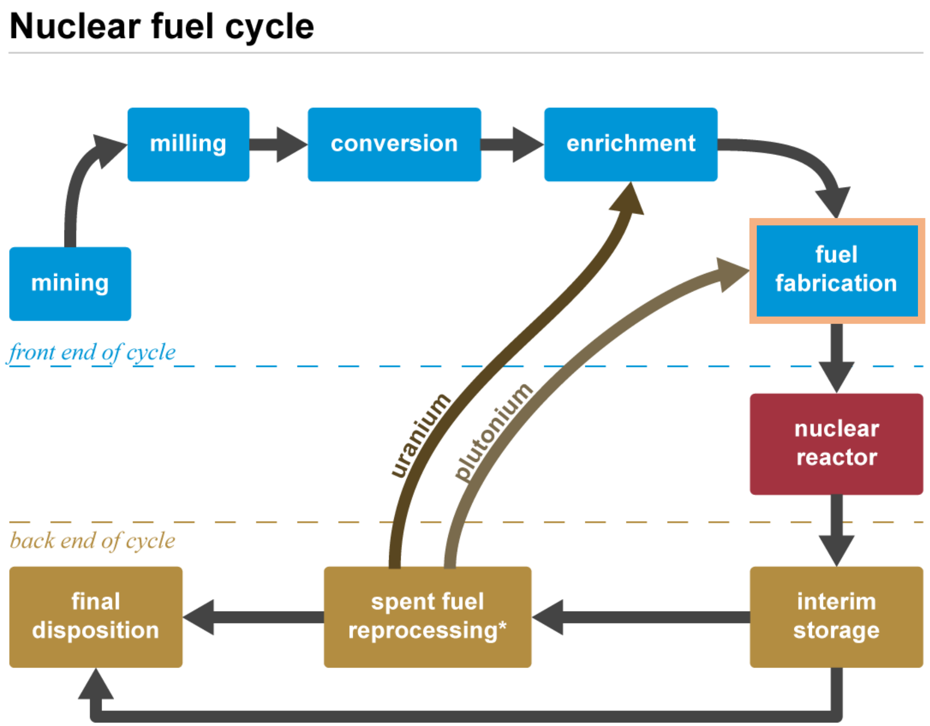
**Spent fuel reprocessing* is omitted from the cycle in most countries, including the United States.

Enrichment: Uranium hexafluoride (UF_6) gas passes through centrifuges that increase the concentration of uranium-235 from about 0.7% to about 3-5% for most commercial reactors.



Much of the uranium enrichment for U.S. commercial reactor fuel occurs outside the United States, though domestic enrichment capacity is expanding.

The Front End: Making Nuclear Fuel

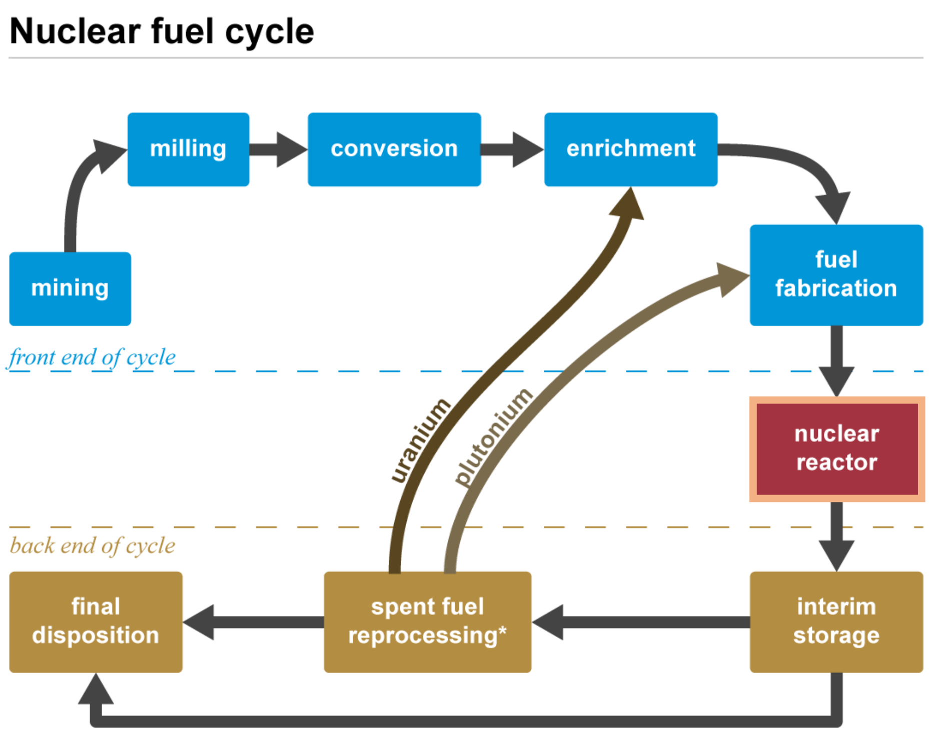


Fuel fabrication: Enriched uranium is converted into uranium dioxide, pressed into ceramic pellets, sealed in fuel rods, and assembled into fuel assemblies.

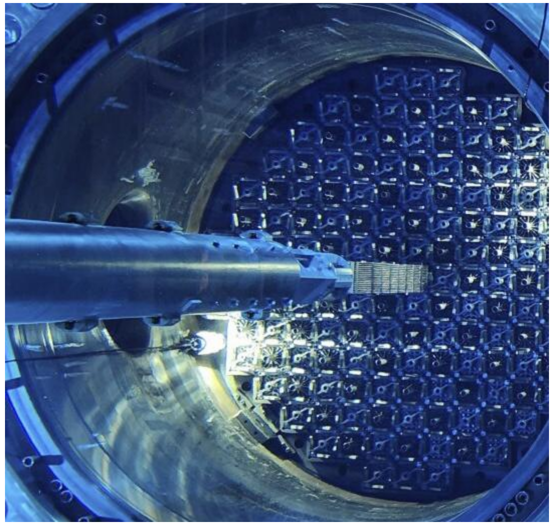
**Spent fuel reprocessing* is omitted from the cycle in most countries, including the United States.

Most fuel fabrication for U.S. commercial reactor fuel already takes place in the United States, with additional capacity being developed to support advanced reactors.

The Reactor: Generating Electricity



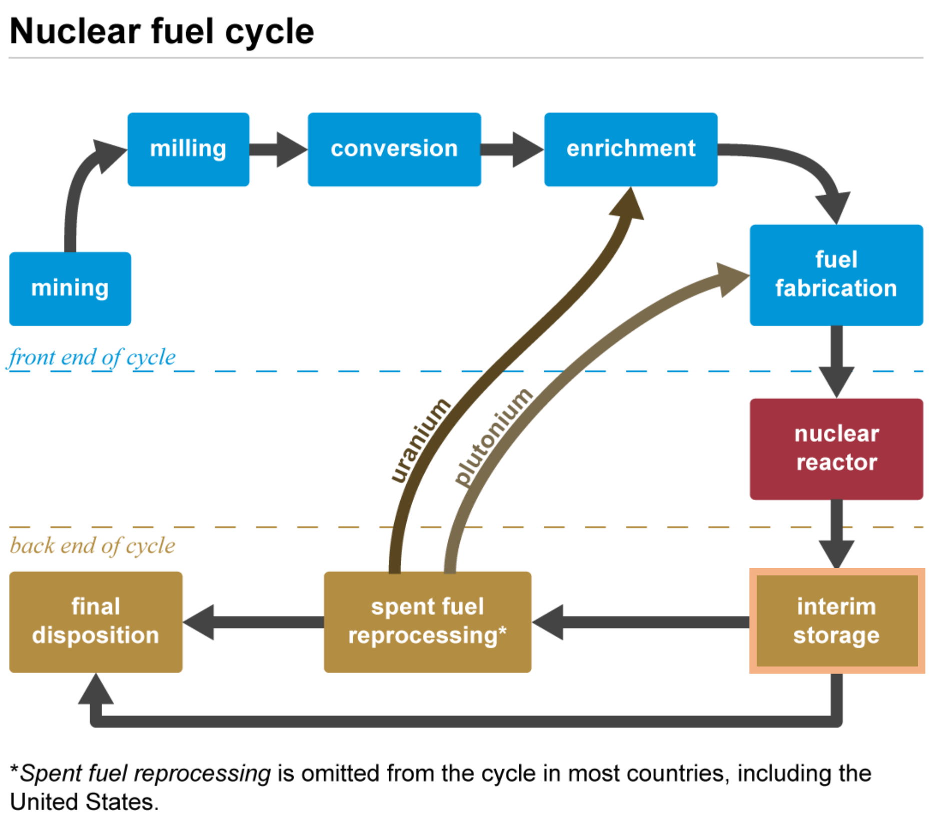
Nuclear Fission: Fuel assemblies are loaded into the reactor core, where uranium atoms split in a controlled chain reaction. The heat released produces steam, which spins a turbine to generate electricity.



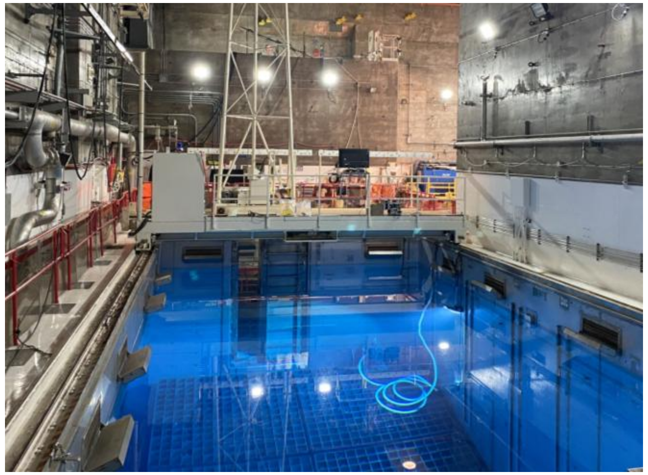
**Spent fuel reprocessing* is omitted from the cycle in most countries, including the United States.

Nuclear power plants generate about 19% of U.S. electricity. Several new reactors are now under construction or planned, including TerraPower's Natrium reactor in WY and TVA's proposed SMR project at the Clinch River site in TN.

The Back End: Managing Used Nuclear Fuel

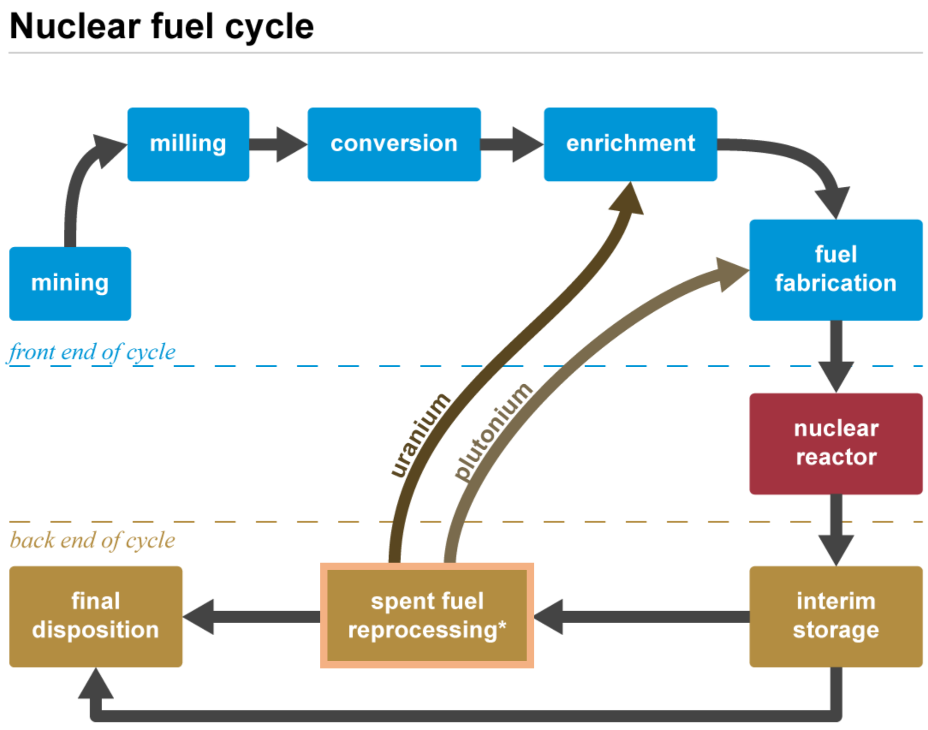


Used Fuel Storage: After 5-10 years in a reactor, used fuel assemblies are removed and placed in deep pools of water, where they cool and are safely shielded. After several years, they are transferred to dry storage casks designed for safe long-term storage.



The US does not currently have a centralized interim storage or a final disposition facility for commercial used nuclear fuel. As a result, nearly all used fuel is stored safely at the nuclear power plants where it was generated.

The Back End: Managing Used Nuclear Fuel



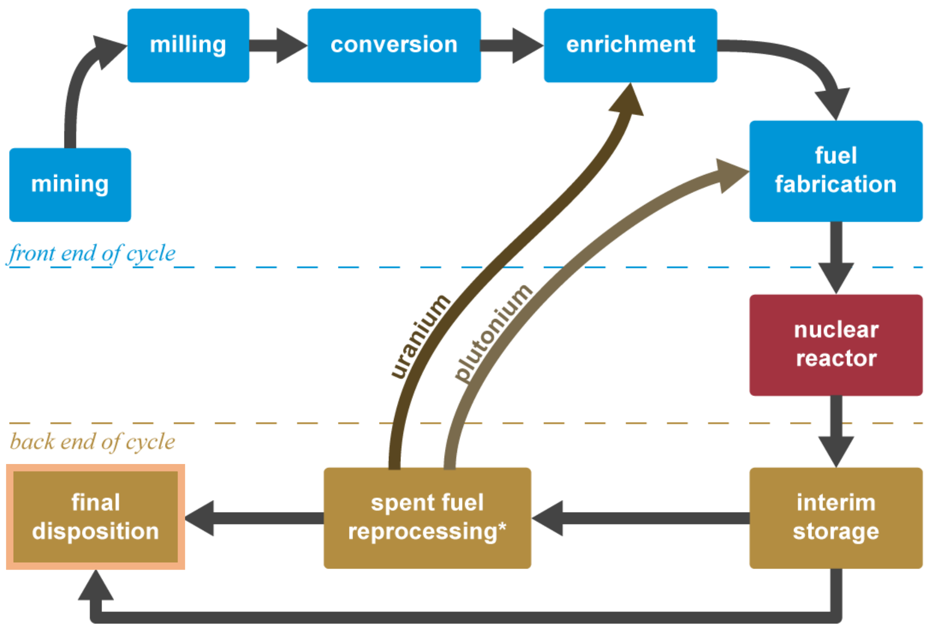
**Spent fuel reprocessing* is omitted from the cycle in most countries, including the United States.

Used Fuel Reprocessing: Used nuclear fuel can be chemically processed to recover uranium and plutonium that can be recycled into new reactor fuel. This reduces the amount of material requiring long-term disposal.

The United States does not currently reprocess commercial used nuclear fuel. However, renewed federal and private-sector interest in advanced fuel recycling is driving the development of new recycling technologies.

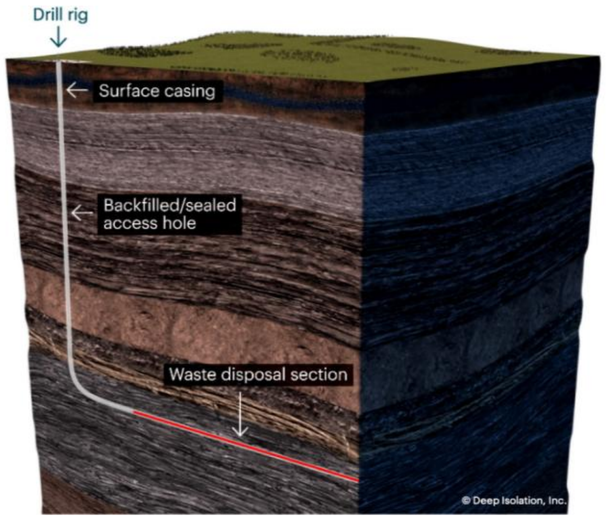
The Back End: Managing Used Nuclear Fuel

Nuclear fuel cycle



Spent fuel reprocessing is omitted from the cycle in most countries, including the United States.

Final Disposition: Materials that cannot be recycled are prepared for permanent disposition in deep geologic disposal systems designed to isolate radioactive materials from people and the environment.



The United States does not currently have a permanent disposal system for commercial used nuclear fuel. Internationally, several countries are developing deep geologic disposal systems, and Finland has become the first to implement one.

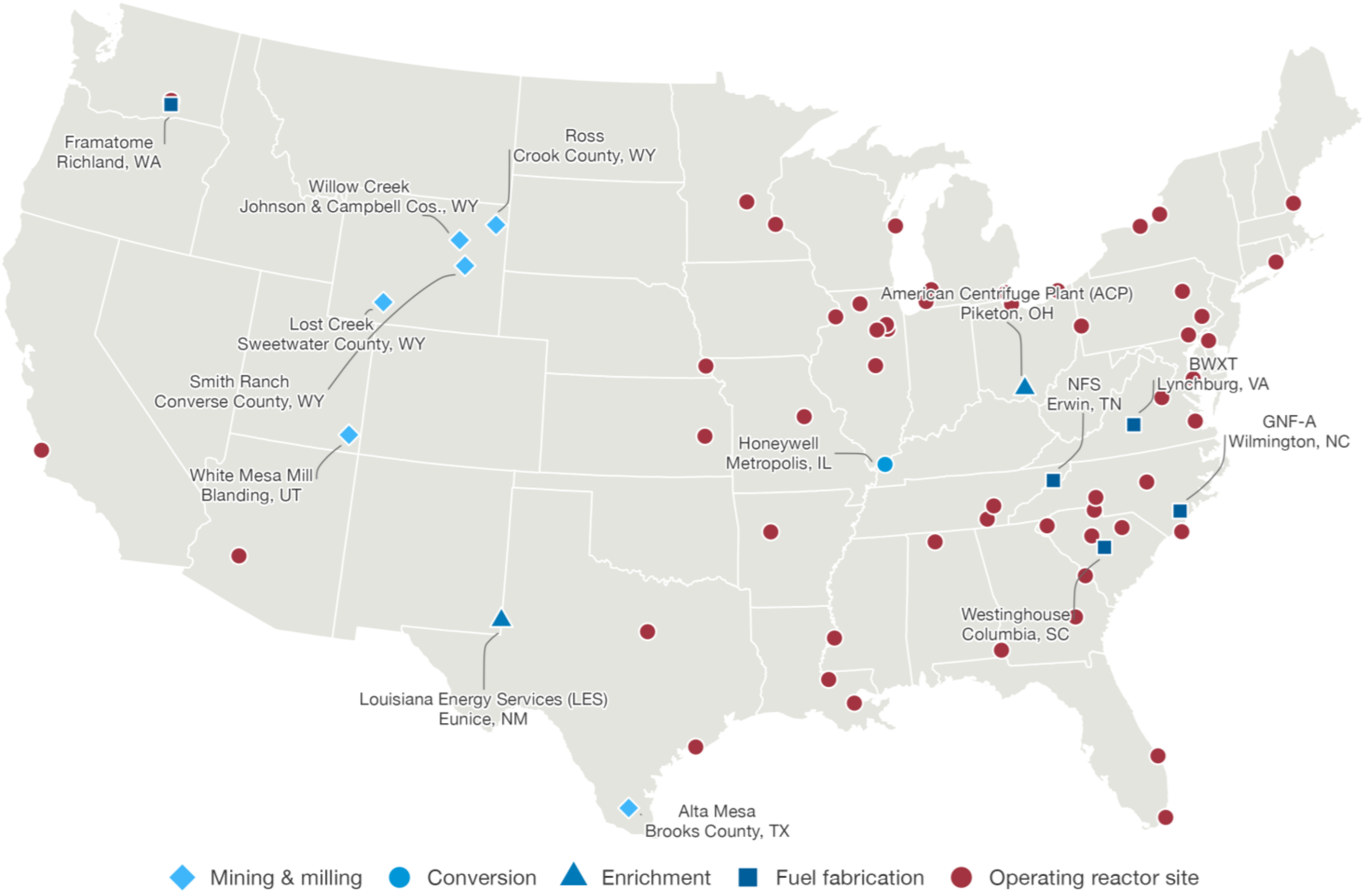
Resources

World Nuclear Association
U.S. Nuclear Fuel Cycle
world-nuclear.org

U.S. Energy Information Administration
Nuclear Explained
eia.gov/energyexplained

U.S. Nuclear Regulatory Commission
Nuclear Materials and Fuel Cycle
nrc.gov/materials

Where the U.S. Nuclear Fuel Cycle Operates Today



Nuclear Lifecycle Innovation Campus in Oklahoma

August 2026

Oklo Overview and Background

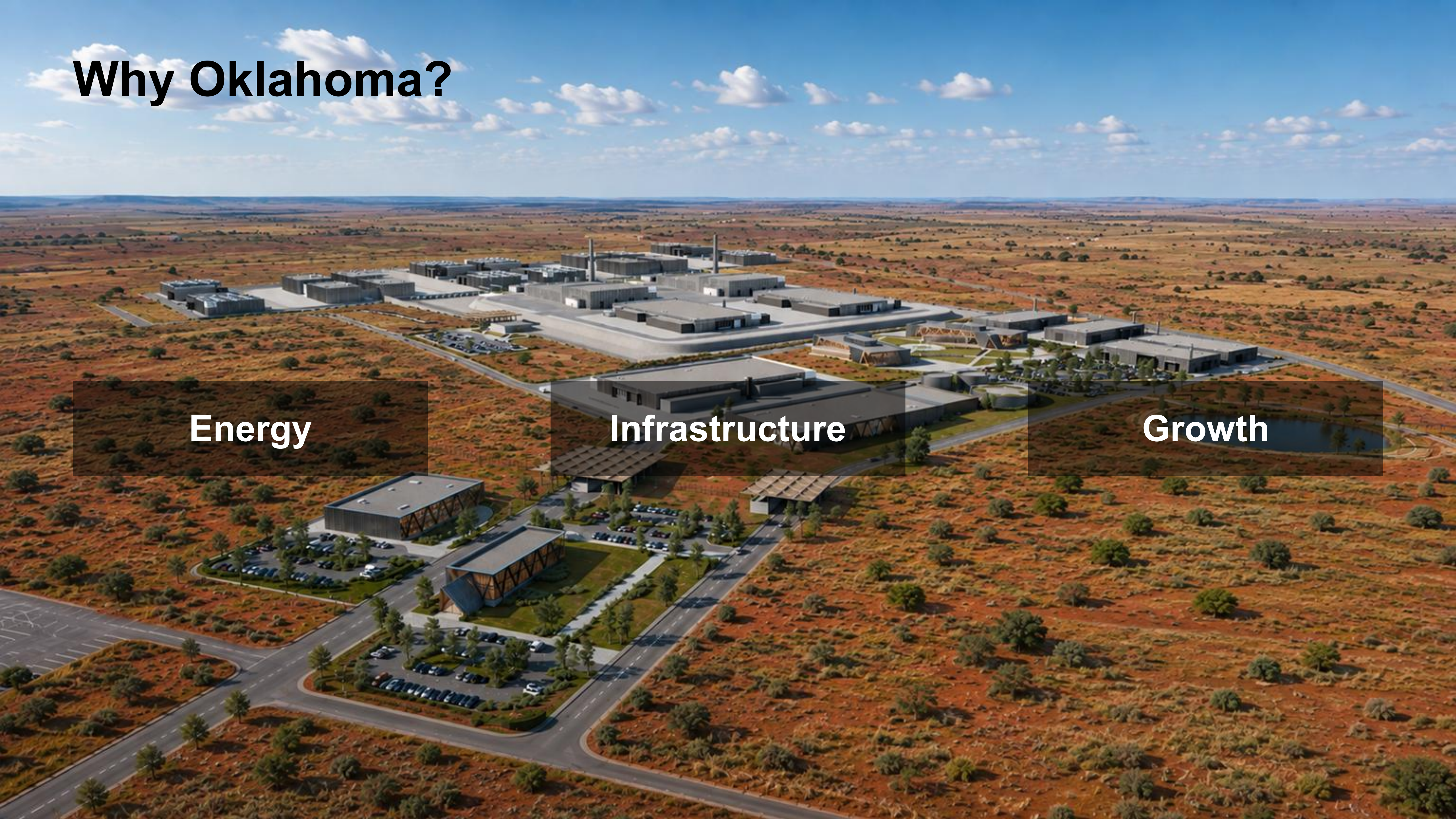
Oklo is a nuclear technology company dedicated to the transformative potential of the atom.

Our platform is organized around three integrated business lines: power, fuel, and isotopes.

Company overview

- Number of employees: Over 400
- Founders: Jacob and Caroline DeWitte, Oklahoma residents!
- Publicly traded: NYSE: OKLO

Why Oklahoma?



Energy

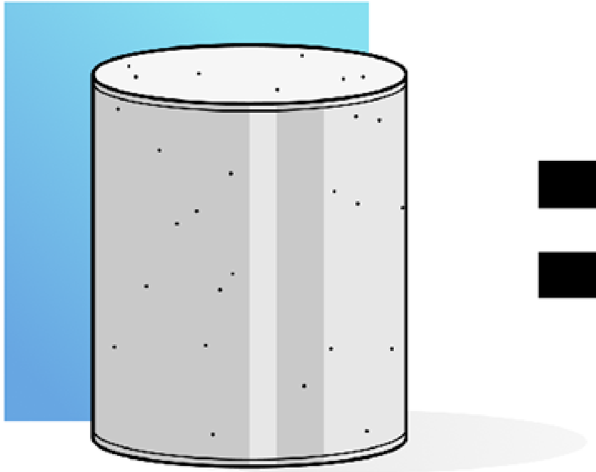
Infrastructure

Growth

Recycle Used Nuclear Fuel
Recharge America

closed fuel cycle reduces both the amount of material requiring permanent disposal and how long the remaining waste stays radiotoxic.

1 lb of used nuclear fuel



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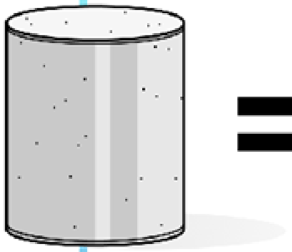
1 lb ≈ the weight of a water bottle



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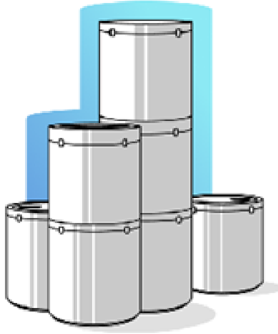
- $300,000 worth of electric power
- 6,000 barrels of oil worth of energy
- $1,000 worth of rare isotopes and critical minerals



There are 220 million pounds of it in the U.S.

What a Nuclear Lifecycle Innovation Campus can be

One of the largest critical minerals mines in the world

A source of crucial isotopes for healthcare, exploration, and defense

A world leading nuclear technology research and development center

An energy abundance driven economic superhub

Oklo’s three business lines create one scalable, integrated nuclear platform.

Power creates demand, fuel enables deployment, and isotopes expand value through shared nuclear capabilities

Power

Reliable
baseload power

Fuel

End-to-end
fuel fabrication and
recycling platforms

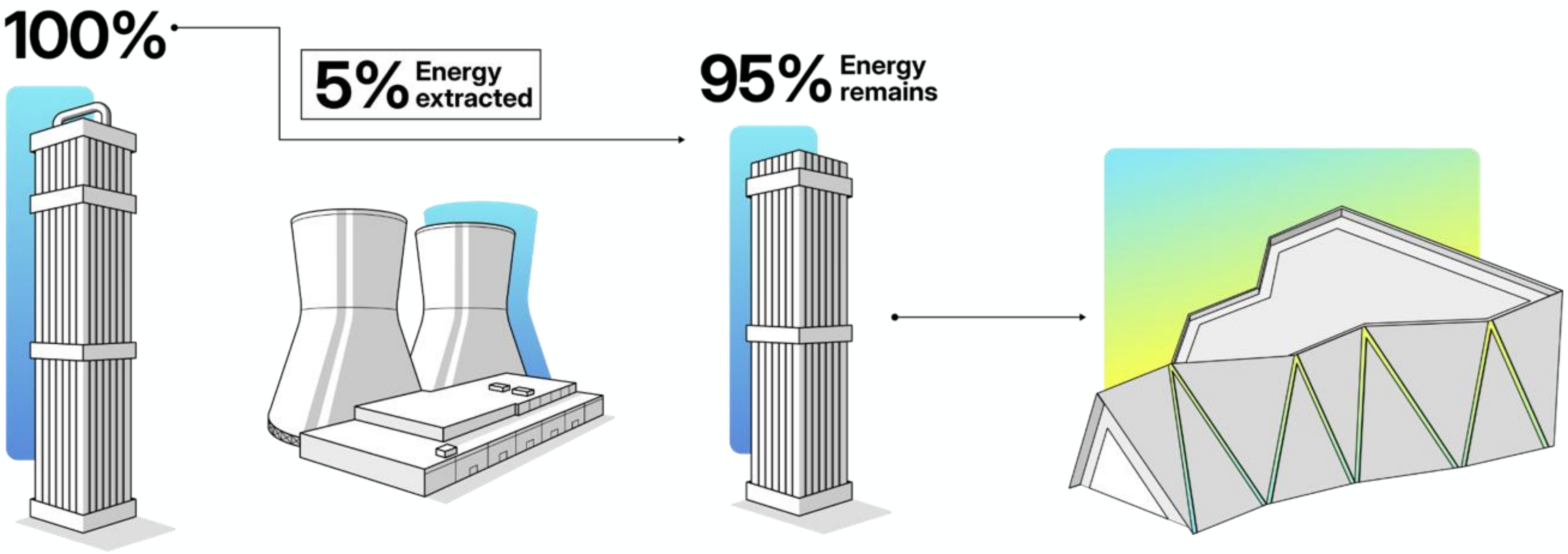
Isotopes

High-value domestic
supply for critical uses

The business lines strengthen each other by sharing capabilities across licensing, fuel, siting, procurement, construction, and operations.

Most of the energy in nuclear fuel is never used

In traditional light water reactors (LWRs) today, fuel is removed after a single use even though around 95% of the energy remains.



Currently, used nuclear fuel in the U.S. is the equivalent of 1.2 trillion barrels of oil.

The bottom line: Nuclear waste is manageable, and recycling makes it more so

Oklo's fuel recycling approach turns existing material into decades of clean energy, reduces the long-term waste burden

Source: International Atomic Energy Agency | https://www-pub.iaea.org/MTCD/publications/PDF/PUB2111web.pdf

What recycled waste looks like

- Recycling recovers over 90% of the material to be used as fuel
- The remaining material is vitrified and metallized for disposal
- This allows us to optimize form factors for drilling and disposal

Container

Stainless steel
Height: 1 m 338
Diameter: 43 cm
Mass: 92.5 kg

Package

Borosicilate glass
Volume: 175 litres
Waste mass: 400 kg
Radioactive products: 11 kg

One of Oklahoma’s advantages:

Drilling!

Recycling with boreholes changes the game with respect to waste disposition

Optimize safest, most efficient borehole designs because the waste streams can be tailored to diameter and height for optimal disposition

About Nuclear Lifecycle Innovation Campuses

Why now?

The current models for energy and power don't work. Electricity bills are rising, the grid is strained, supply chains are increasingly vulnerable to geopolitical disruption, and power demand is growing.

The world is looking for reliable nuclear power to help meet that demand. But in the United States, we still have not solved the back end of the nuclear fuel cycle. For decades, the country has been stuck in a nuclear waste stalemate, with Yucca Mountain stalled and nearly 100,000 metric tons of used nuclear fuel stored at sites around the country. **That fuel contains the energy equivalent of over 1.2 trillion barrels of oil.**

Innovation campuses offer a new path forward: convert used fuel into new fuel, permanently dispose of what cannot be recycled, and use that fuel to generate new power — while creating jobs, investment, and tremendous economic growth in the United States.

Why a campus model?

Innovation campuses provide a dedicated geographic area where reliable clean power, fuel production, and major industrial users are planned together from the outset.

By co-locating energy production with large electricity consumers along with fuel, enrichment, and other key lifecycle components, these campuses reduce infrastructure constraints (utilities, security, fenceline, transportation) while enabling long-term investment in a community.

Oklo's contribution to a campus – power, isotopes, recycling, and fuel fabrication — are only a part of what is possible at an NLIC. Significant follow on investments are expected.

What Innovation Campuses bring to Oklahoma

Create a new energy corridor. Building on Oklahoma's legacy of energy leadership.

Innovation campuses can make the state a national hub for advanced nuclear, fuel recycling, and next-generation power.

Bring a new energy resource to Oklahoma.

Turn used nuclear fuel into new fuel and reliable power. Oklo's model could generate 363 million MWh annually — nearly 4x Oklahoma's current annual electricity generation.

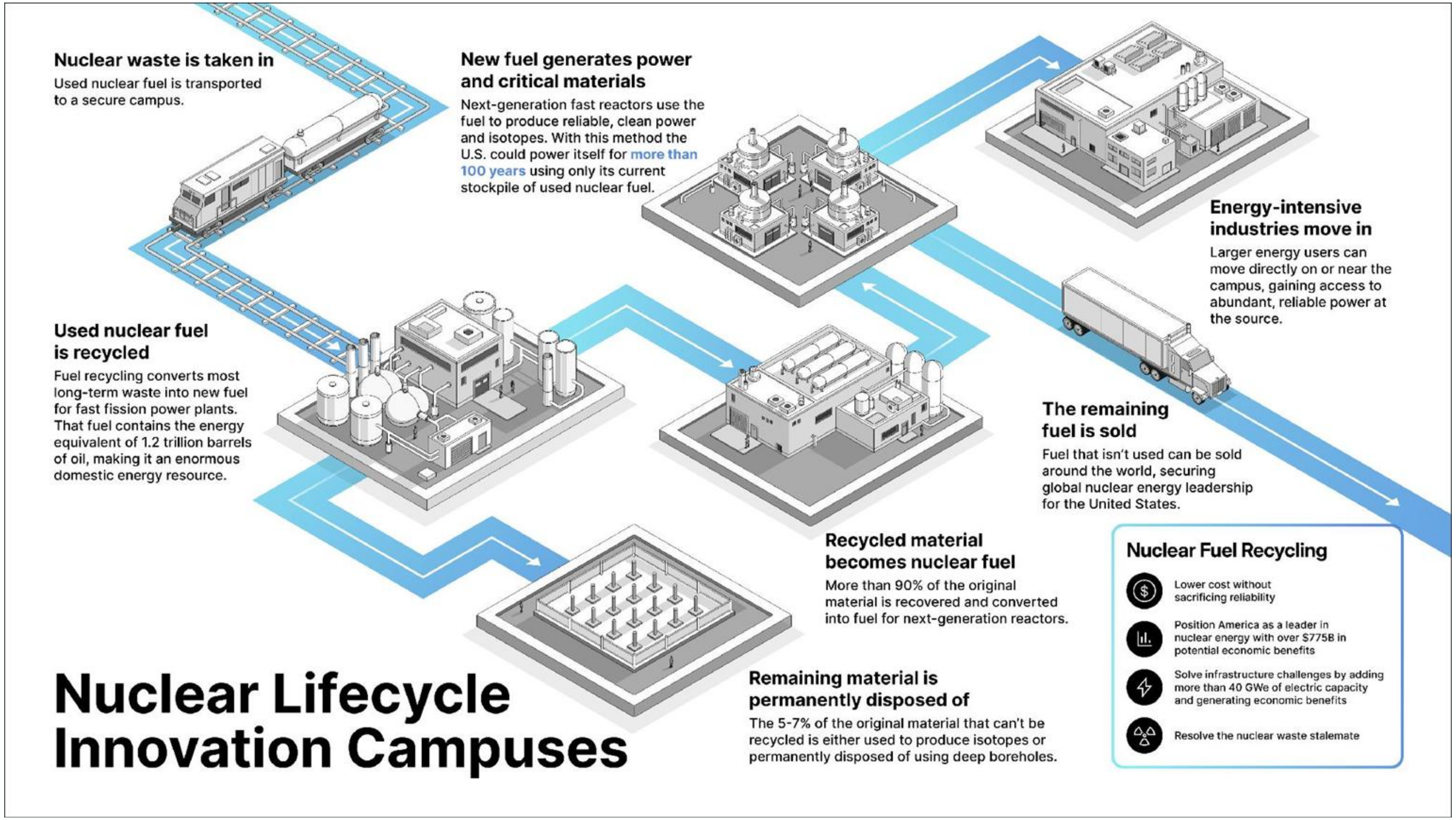
Attract the industries America is racing to build.

Abundant, reliable power can bring large offtakers, advanced manufacturing, critical minerals, defense production, and other energy-intensive industries — and their investment — to Oklahoma.

Lower costs while creating long-term economic value.

Innovation campuses can reduce taxpayer waste-management costs while creating skilled jobs, private investment, state and local revenue, and a stronger domestic energy supply chain.

Innovation Campus will bring industry to Oklahoma



Innovation Campuses build a new industrial ecosystem

Nuclear Fuel Cycle

- Fuel recycling
- Waste disposition
- Fuel fabrication
- Conversion & deconversion
- Uranium enrichment
- Uranium mining & milling

Power & Industry

- Advanced nuclear reactors
- Data centers
- Advanced manufacturing
- Medical, industrial & national security isotopes

Infrastructure & Workforce

- Secure transportation
- Workforce development
- Decommissioning & site remediation

Safety & Stewardship

- Nuclear safeguards & material security
- Safety
- Environmental stewardship

Innovation Campus by the numbers

Nationally

- Under Oklo's model, over an initial 20-year period, recycling existing used fuel could support 43.6 gigawatts of electric capacity (GWe) and generate roughly 363 million megawatt-hours (MWh) of clean electricity each year.
- By turning waste into a resource, the U.S. has the ability to create $776.4 billion in direct economic value over 20 years — roughly $726 billion from electricity generation and approximately $50 billion from recovered uranium and valuable isotopes.
- Innovation campuses save taxpayers hundreds of billions of dollars, shrinking costs from $300 billion for a deep geologic repository program to $32 billion for recycling and borehole disposal — a roughly 90% reduction in capital costs.
- Ratepayers will see between $10–20 billion in annualized savings

In Oklahoma

- Oklahoma alone could produce the energy equivalent of 25 billion barrels of oil using the current supply of used nuclear fuel
- Create nearly 20,000 jobs for the campus, over 4,300 of which will be Oklo

Community engagement across the project lifecycle

Continuous engagement — before permitting, through construction, and into operations.

1 Early Development & Permitting

- Identify key stakeholders and build initial relationships
- Listen early to community priorities and concerns
- Share project information and intent transparently
- Incorporate feedback into project planning
- Establish recurring engagement channels

2 Pre-Construction & Construction

- Provide regular project updates
- Coordinate closely with local government
- Engage continuously on environmental stewardship
- Invest in workforce and training
- support public safety and preparedness
- Maintain a visible local presence

3 Operations & Long-Term Presence

- Maintain open, two-way communication
- Strengthen workforce and education pipelines
- Advance environmental stewardship
- Invest in the community for the long term
- Build a legacy of trust and partnership

Engagement Principles — These guide every decision we make

Listen first. Respect always.

Be transparent. Communicate plainly.

Show up consistently.

Build trust before asking for anything.

Follow through. Do what we say we will do.

Create long-term value together.

Oklo Existing Projects

Oklo is already advancing multiple sites to build out domestic isotope production

Idaho

Radiochemistry Laboratory | De-risk and accelerate

Timing: 2026

Generate early isotope output at this NRC-approved laboratory

Build operational experience

Bridge the gap from pilot validation to commercial production

Idaho

Multi-reactor isotope foundry | Scale domestic supply

Timing: 2027+

Deliver sustained, commercial-scale isotope production for healthcare, industry, research, and national security

Texas

Groves Isotope Test Reactor | Demonstrate execution

Timing: 2026

Demonstrate rapid reactor deployment by reaching criticality within a year under the DOE Reactor Pilot Program

Oak Ridge, TN

Advanced Fuel Center | Expand output

Timing: 2030+

Extract high-value isotopes during advanced fuel recycling. This approach integrates isotope production into the fuel cycle and expands long-term domestic supply.

Aurora powerhouse in Idaho

Small and simple design
Fewer parts | Highly repeatable factory fabrication

Proven technology
Reduced supply chain complexity & risk | Readily available components

Low cost
Cost competitive & capital efficient | Standardized factory fabrication

24/7 clean, reliable power
Unique fuel flexibility (fresh or recycled)

Inherently safe
Inherent safety attributes (enabling passive safety systems) | Non-pressurized environment



Oklo's first isotope facility went from greenfield to operational in just over 11 months.

September 2025 | **March 2026** | **July 2026**

Validates Oklo's ability to efficiently site, construct, and operationalize nuclear infrastructure at industry-leading speed.(1)


OKLO

DEEP ISOLATION®

Deep Isolation:
Oklahoma’s NLIC Stakeholder Workshop

Deep Isolation:
Oklahoma’s NLIC Stakeholder Workshop

August 20, 2026

U.S. NUCLEAR POLICY MOMENTUM

Nuclear energy plays a vital role in America's future energy mix: clean, stable and always on

Executive Orders	2025 U.S. Executive Orders direct DOE to accelerate the operation of nuclear energy and expand U.S. nuclear fuel cycle
Policy Focus	The federal policy direction is clear: build more nuclear, secure the fuel cycle, and create a regulatory framework that allows deployment to happen faster.
Bipartisan Support	Support for nuclear in Congress is broadly-based, bicameral, and bipartisan

"The Potential for nuclear energy in Oklahoma is a conversation that's long overdue." (Sen. Burns)

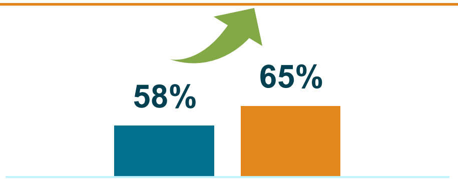
AMERICANS WANT A PERMANENT NUCLEAR WASTE SOLUTION

SURVEY METHODOLOGY

- Conducted by YouGov
- 1000 nationally representative U.S. adults
- April 3-8, 2026
- Margin of error: ±3.7%

61% agree it is safer to place radioactive waste in deep borehole disposal, compared with 31% who agree excavated repositories are safer.

Support for DBD vs. excavated repositories increases after receiving objective information



■ Before Receiving Information
■ After Receiving Information

Trust is higher in scientists and engineers than Government

68% trust scientists and engineers to assist the government in selecting the best option for geologic disposal

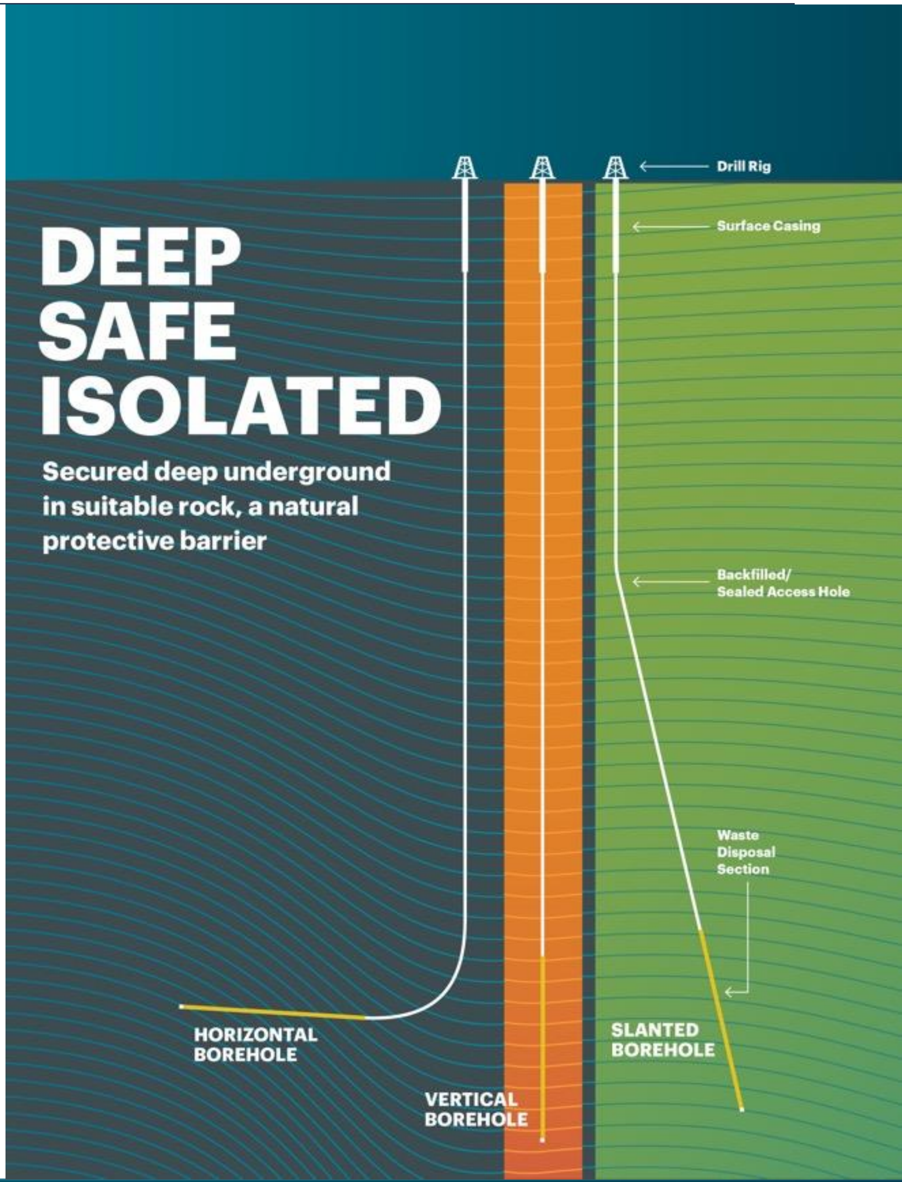
37% trust government to act in the best interests of the public

THE DEEP ISOLATION SOLUTION: OVERVIEW

Deep Isolation's mission is to provide the world's safest and most cost-effective solution for the permanent disposal of nuclear waste

Our Solution

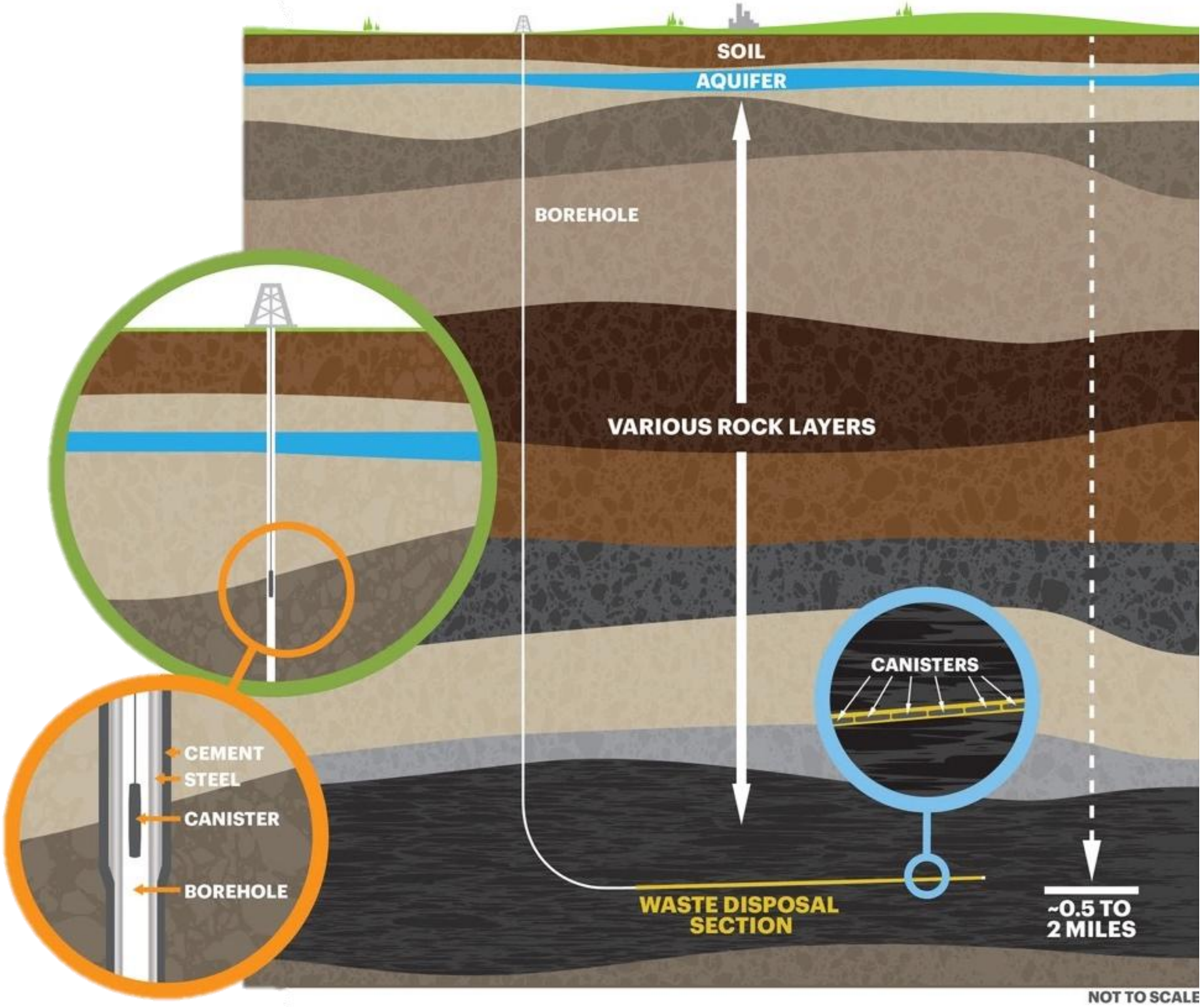
- Deep Isolation's solution places corrosion-resistant canisters containing waste in deep boreholes, greater than thousands of feet below the surface – far deeper than is feasible with a mined repository
- Boreholes terminate in stable geological formations that have been out of contact with the biosphere for millions of years
- Key features of the solution include:
  - ✓ **Inexpensive Proven Drilling:** Remarkable advances in directional drilling technology have made such deep boreholes reliable and relatively inexpensive; leverages existing technology
  - ✓ **Permanent Isolation:** Our corrosion resistant canisters serve as an engineered barrier – and the billion metric tons of rock above them create the final impermeable barrier
  - ✓ **Time to Implement:** The technology and know-how exist and are ready to be deployed quickly
  - ✓ **Remote Handling:** Deep borehole emplacement does not require human involvement underground
  - ✓ **Minimal Transportation:** Disposal can take place at or near sites where nuclear waste is produced and currently stored, minimizing the cost and risk associated with waste transportation



THE DEEP ISOLATION SOLUTION: HOW IT WORKS

Deep Isolation's repeatable process leverages combines proven technologies used on a daily basis in the oil & gas and nuclear waste handling sectors

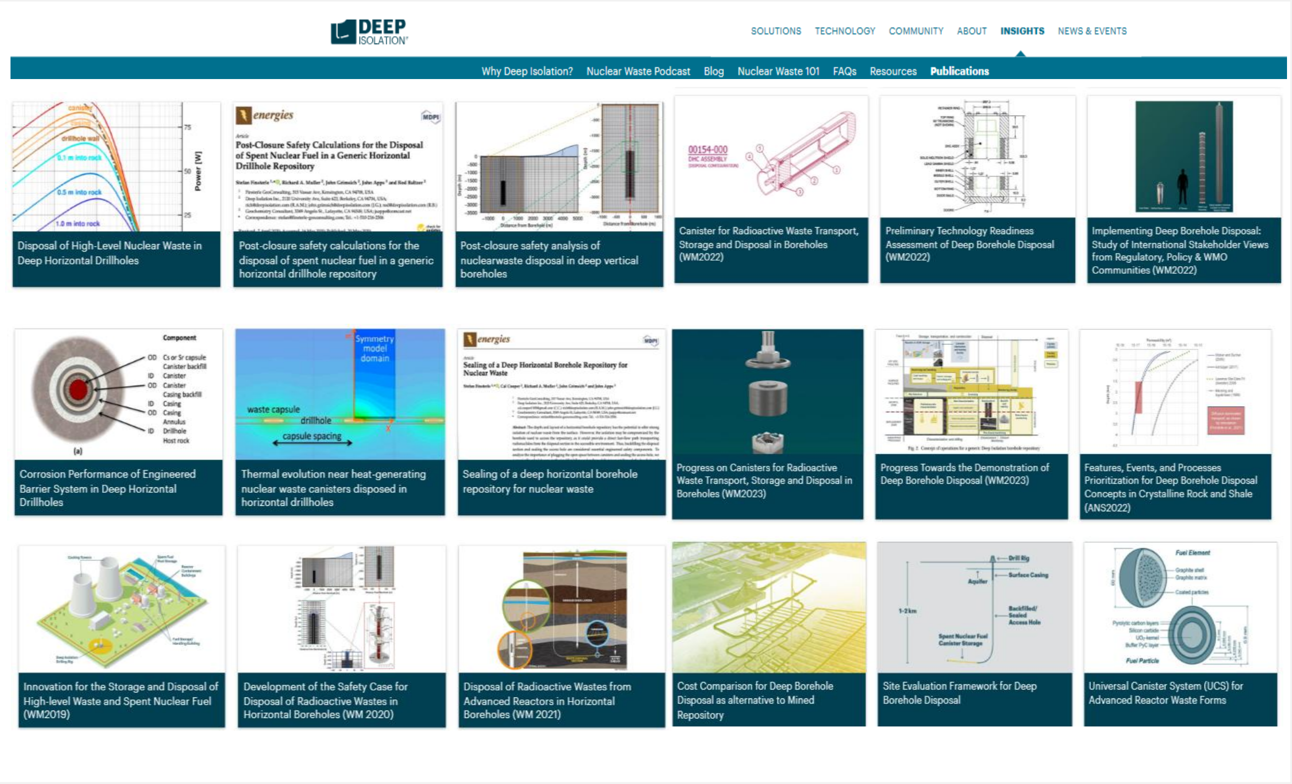
- A drilling rig lowers canisters containing spent fuel assemblies or other waste into the borehole
- The borehole is reinforced with steel casing and cement
- Standard drilling equipment maneuvers canisters around the bend and into the horizontal disposal section
- The disposal section is located in an isolated layer of rock, such as shale, that has been stable for millions of years
- Once the canisters are emplaced, the access hole is backfilled and sealed



THE DEEP ISOLATION SOLUTION: SAFETY IN DEPTH

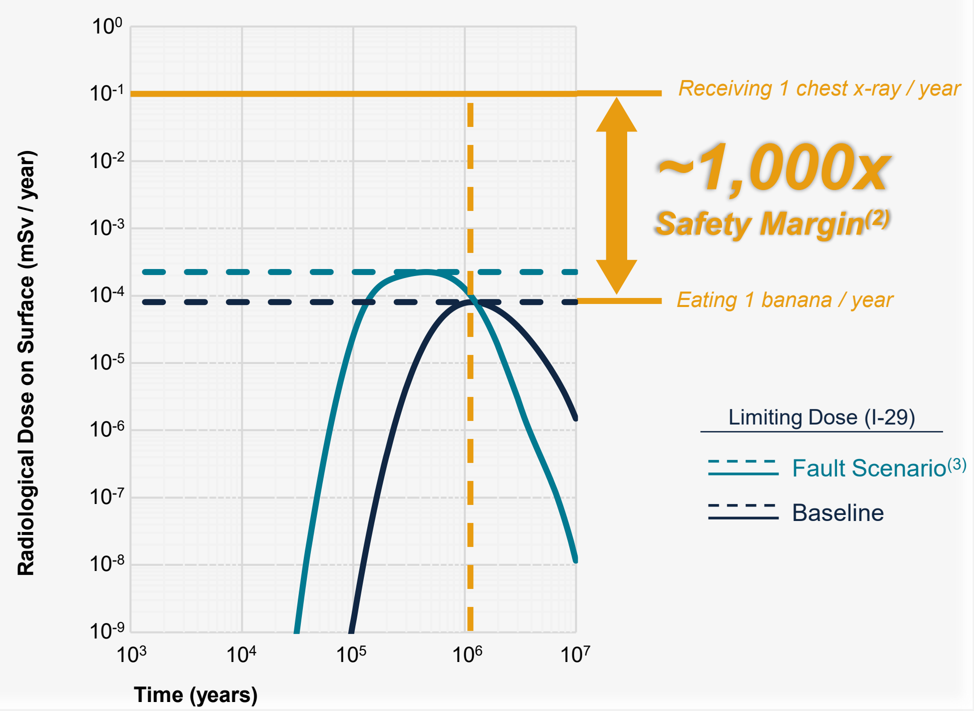
Our generic designs in shale and granite surpass the strictest safety requirements by a factor of 1,000, with very high levels of passive safety and low sensitivity to modeled accident scenarios

Deep Isolation has published extensively on safety performance of our technology



Modeled Results(1)

Key Takeaway:	Peak dose is not for over 1 million years – and then will be below background radiation and 1,000x below the strictest regulatory limit



1) Post-Closure Safety Calculations for the Disposal of Spent Nuclear Fuel in a Generic Horizontal Drillhole Repository (2020) published by *Energies*.
2) Safety margin for this Generic Reference Repository is compared to a regulatory dose standard of 0.1 mSv/year. This is the strictest individual dose limit we know of that has been set for a geologic repository, by the Swiss Federal Nuclear Safety Inspectorate (ENSI, 2009). Note that when compared to requirements set by the U.S. Congress for Yucca Mountain in 40 CFR Part 191 (0.15 mSv/year) and by the IAEA in SSR 5: Specific Safety Requirements for Disposal of Radioactive Waste (1 mSv/year) the safety margin for this Generic Reference Repository is 1,500 x and 10,000 x, respectively.
3) Even in the circumstances of a catastrophic earthquake immediately after repository closure that shears through the disposal section of the repository up to the aquifer, peak dose does not appear for 0.5 million years and 450x below the strictest regulatory limit.

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- ✓ Stable, isolated lithological settings
- ✓ Extensive sub-surface data
- ✓ World-leading oil & gas supply chain

DEEP BOREHOLE DISPOSAL SITE EVALUATION FRAMEWORK

1 Guiding principles

Community consent
The site must be in a host community which understands and supports the repository

Long-term environmental safety
An isolated and stable geologic environment

Strategic and political alignment
The site meets wider policy criteria that are important for stakeholders but are not related to long-term environmental safety

2 Geological data considerations

Safety factors aligned with IAEA Safety Standard “SSG-14: Geological Disposal Facilities for Radioactive Waste”

Palaeohydrology	Has the hydrological environment at depth remained isolated from surface waters over geological timescales? Can suitable rock formations isolated from aquifers be accessed?
Geothermal / volcanism	Are there risks of the repository being affected by geothermal and volcanic activity?
Climate processes	Do near and long-term climate related events and processes compromise operational safety or long-term safety?
Seismicity / rock mechanics	Is the deep geosphere historically stable from disruptive seismic events?
Regional proximity	Can the repository be sited sufficiently far from activities and resources that impact construction, operations, and long-term performance?

Deliverability
Can the repository be licensed, constructed, and operated in a cost-effective manner?

3 Geological site evaluation criteria

Quantified criteria recommended by Deep Isolation for screening out sites where the host rocks are unlikely to provide a long-term safe environment for borehole disposal of higher-activity radioactive waste

National screening criteria (IAEA Generic Design stage) → Site-specific evaluation criteria (IAEA Conceptual Design stage) → Detailed site characterization data (IAEA Licensing Design stage)

4 Target outcomes for selected site

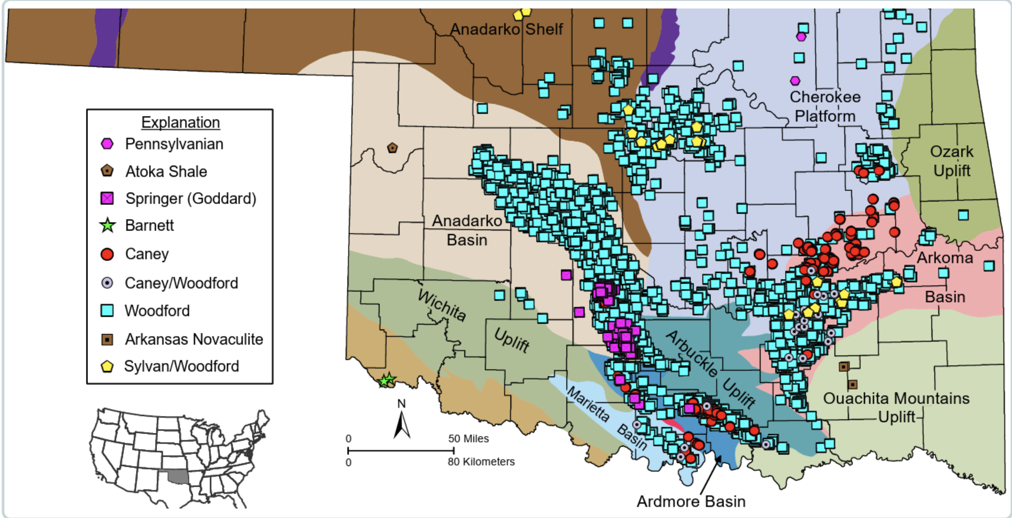
A geological environment which can be demonstrated to the local community, relevant regulators and other stakeholders to be:

Isolated | Stable | Deliverable

OKLAHOMA GEOLOGY: IDEAL FOR BOREHOLE DISPOSAL

Oklahoma's extensive oil-and-gas dataset and drilling base can accelerate characterization for deep borehole disposal.

Why Oklahoma is unique



Illustrative Oklahoma geologic provinces and shale/tight-oil well completions; highlights the depth of statewide subsurface data.

Subsurface data advantage — Thousands of oil and gas wells provide logs, formation data and geophysical records that can accelerate characterization.

Favorable initial screening — RFI materials identify low geothermal gradient, no quaternary volcanism and stable deep-basement target conditions.

Drillability & workforce — Oklahoma's oil and gas sector brings directional drilling crews, equipment and operational know-how.

Proposed evaluation sequence: PLUSUP-informed characterization pathway

1. **Study underway**
   Statewide geological evaluation using available datasets
2. **18-month PLUSUP**
   Site characterization pilot: screening, community input, characterization well
3. **Reusable toolkit**
   State/DOE briefing toolkit, QA records, and a repeatable workflow for NLIC planning

We have already started a State-wide evaluation — but decisions will require extensive, regulatorily-credible site characterization and extensive community dialogue and engagement

OKLAHOMA NUCLEAR INNOVATION CAMPUS (ONIC)

Oklahoma's proposal treats disposal as a core enabler of the campus — designing recycling, interim storage and deep borehole disposal as one integrated back-end fuel-cycle system

Advanced reactors + fuel cycle
Oklo and Deep Isolation together connect advanced reactors, fuel recycling and permanent disposal into one integrated fuel-cycle pathway.

Fuel recycling + waste reduction
Recycling reduces volume, heat load and long-term hazard before disposal.

Interim storage + UCS
Universal Canister System supports storage, transport and final disposal without costly repackaging.

Deep borehole permanent disposal
Residual HLW/GTCC is isolated thousands of feet below ground in stable formations.

Integrated Back-end

Back-end system

Fuel recycling, interim storage and permanent disposal are treated as a coordinated system rather than separate policy problems.

Deep Isolation + Occlusion

Deep Isolation leads the disposal system; Occlusion provides Oklahoma-based subsurface execution.

A rapidly-deployable and scalable system

1–3
initial boreholes

2–5 per yr
ramp-up additions

70–94
boreholes for the full lifecycle waste output from Oklo's recycling facility

15-21 acres
subsurface footprint (Equivalent to 12-16 football fields; less than 1% of Will Rogers World Airport)

FUTURE SCALABILITY: DOE and Oklahoma can decide together how to scale the pathway —as needs evolve — with Deep Isolation supporting planning, evaluation and implementation.

OKLAHOMA NUCLEAR INNOVATION CAMPUS (ONIC)

Oklahoma is not starting from scratch — ONIC will put into practice extensive DOE-supported work to integrate Oklo's advanced recycling outputs with Deep Isolation's disposal technology

ONIC builds on a foundation established by ARPA-E, Deep Isolation, Oklo, industry partners and national laboratories

1 Universal Canister System (UCS)

UPWARDS project established the disposal-ready canister platform: waste acceptance, packaging, storage, transport, and disposal interfaces.

2 Waste form + canister interface

Two ARPA-E projects have Oklo validated the interface between OKLO's recycling-derived waste forms and the UCS and established techno-economic analysis for the integrated backend system:

1. ONWARDS project designed a recycling process for used fuel from Oklo's fast reactor design; supported by DBD to dispose of residual HLW
2. CURIE project designed a recycling process to recover uranium from LWR SNF, supported by DBD to dispose of residual HLW

3 Full-scale, end-to-end, at-depth demonstration in Texas

Once finalized, we believe that the SCALEUP project will deliver first UCS customer integration & licensing, plus full scale demonstration of UCS deployment and deep borehole disposal technology.

4 Characterization pilot at a potential candidate site in Oklahoma

Our UPWARDS PLUSP proposal brings all this into the real-world, characterizing a potential site in Oklahoma and developing a reusable toolkit for other Campuses

BENEFITS FOR OKLAHOMA

Integrating deep borehole disposal into the State's nuclear vision from the outset delivers five key benefits for Oklahoman citizens

1	**Safety in depth**	The safest way of managing spent nuclear fuel and high-level radioactive waste - put it far below ground, under a billion tons of rock, in stable, isolated rock formations that have been out of contact with ground water over geological time periods.
2	**Flexibility and control**	No need to decide at the outset how large a repository may be needed. The inherently modular nature of a borehole repository means the State can disposal operations with a single borehole, then decide how and when to scale.
3	**Jobs**	Around 200-250 highly-skilled repository jobs, split broadly equally between borehole construction and repository operations. (* Source: Deep Isolation planning estimate based on prior work with **SLB/Halliburton + Bechtel)**
4	**Exports**	Position Oklahoma as a first mover in an emerging global deep borehole disposal market, creating opportunities for U.S. expertise in drilling, engineering, manufacturing and nuclear services.
5	**Responsible leadership**	The opportunity for Oklahoma to leverage its strengths in oil and gas to become the first State in the U.S. to establish a permanent solution for its nuclear waste before it starts generating nuclear power

“Oklahoma proposes to be the first state in the United States, and the first jurisdiction anywhere in the world, to establish a permanent nuclear materials management solution before commercial nuclear deployment begins. No country has done this.”

*(*from the Oklahoma Proposal for the U.S. Department of Energy Nuclear Lifecycle Innovation Campus)*

Thank you!

Deep Isolation, Inc.

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BERKELEY, CA, USA | RICHLAND, WA, USA | LONDON, UK

An Oklahoma Solution to a National Challenge

www.ee.ok.gov/nlic

NLIC@ee.ok.gov

Appendix

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NODE 1

Reactor Deployment and Isotope Production

The power engine of the campus

PROPOSED

Advanced nuclear reactors providing clean, reliable baseload power

Co-located medical and industrial isotope production

Room for research and academic reactor use as the node expands

REQUIRES

Grid interconnection

Reactor fleet site footprint

Rail access for isotope distribution

PARTNER STATUS

Anchor partner in place

Sized to add operators — the ~500 acres is a floor, not a ceiling

1,050 MW

Total generation capacity

~500 acres

Site footprint — floor, not ceiling

NODE 2

Fuel Cycle: Enrichment Through Recycling

The function that closes the domestic fuel loop

Enrichment	Conversion & Deconversion	Fuel Fabrication	Reactor (Node 1)	Used Fuel Recycling

RECYCLED MATERIAL RETURNS TO FABRICATION — THE LOOP CLOSES ON ONE SITE

REQUIRES

Rail access in and out

~500 acres combined, and the highest grid demand of any node

Room for additional acreage, to be determined as the enrichment partner is determined

PARTNER STATUS

Fuel fabrication and recycling: anchor partner in place

Enrichment and conversion: active conversations, near-term priority — this is where the node grows

NODE 3

Used Nuclear Fuel Disposition

Permanent, safe management using deep borehole technology

KEY ASPECTS

Thorough geological assessment

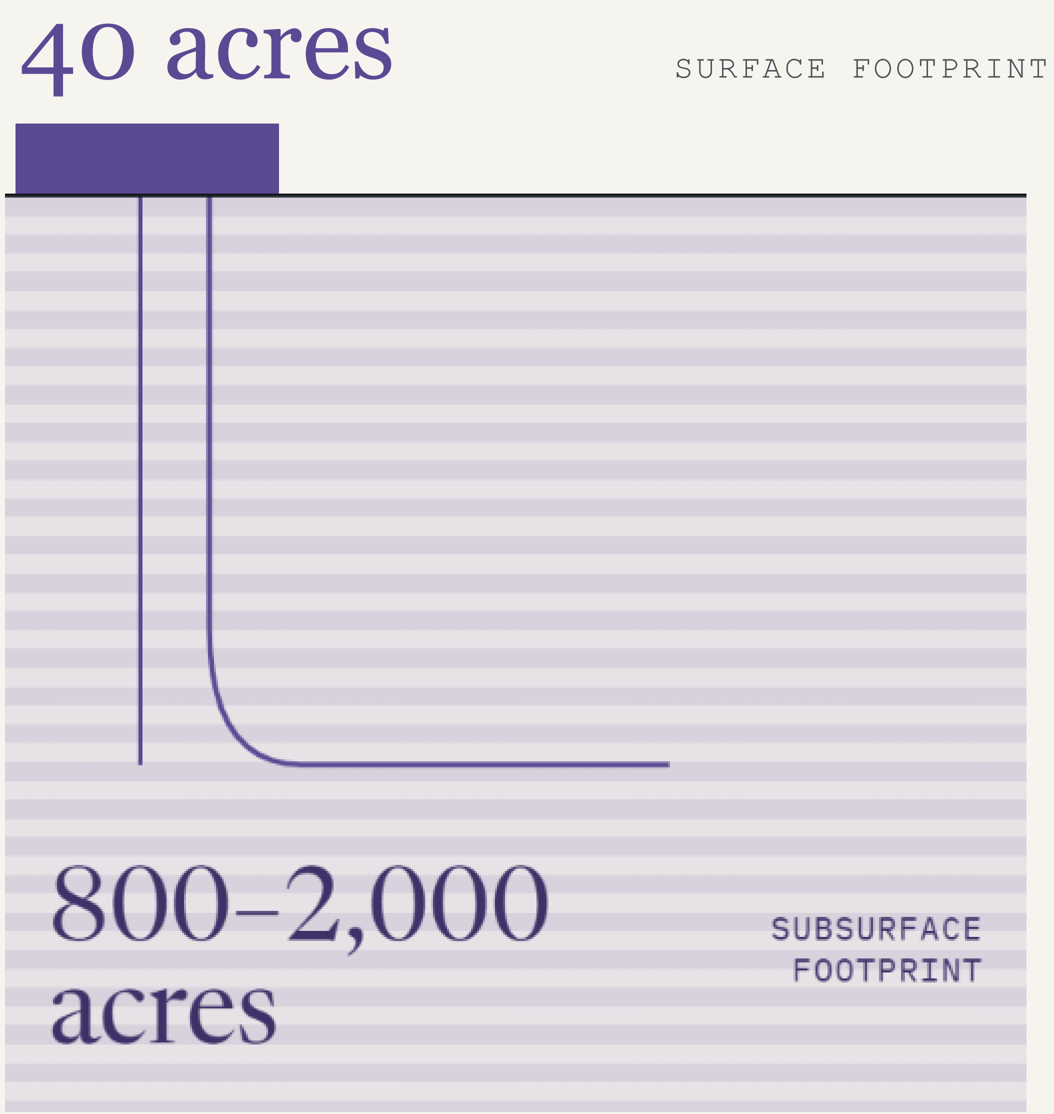
A defined transportation and licensing pathway

Rail and power access

This effort will be the most collaborative with key stakeholders

PARTNER STATUS

Named technology and execution partners in place



SUBSURFACE RANGE DEPENDS ON SITING — FLOOR, NOT CEILING. SCHEMATIC, NOT TO SCALE

Oklahoma Geological Survey: Oklahoma's NLIC Stakeholder Workshop

- Dr. Nicholas W. Hayman, State Geologist, hayman@ou.edu

- Oklahoma Geological Survey (OGS) is a science & information state agency in the University of Oklahoma
- Collaborates w/ state & federal agencies: monitor & mitigate subsurface hazards
- Massive dataset on subsurface geology from >100 years of oil & gas activity

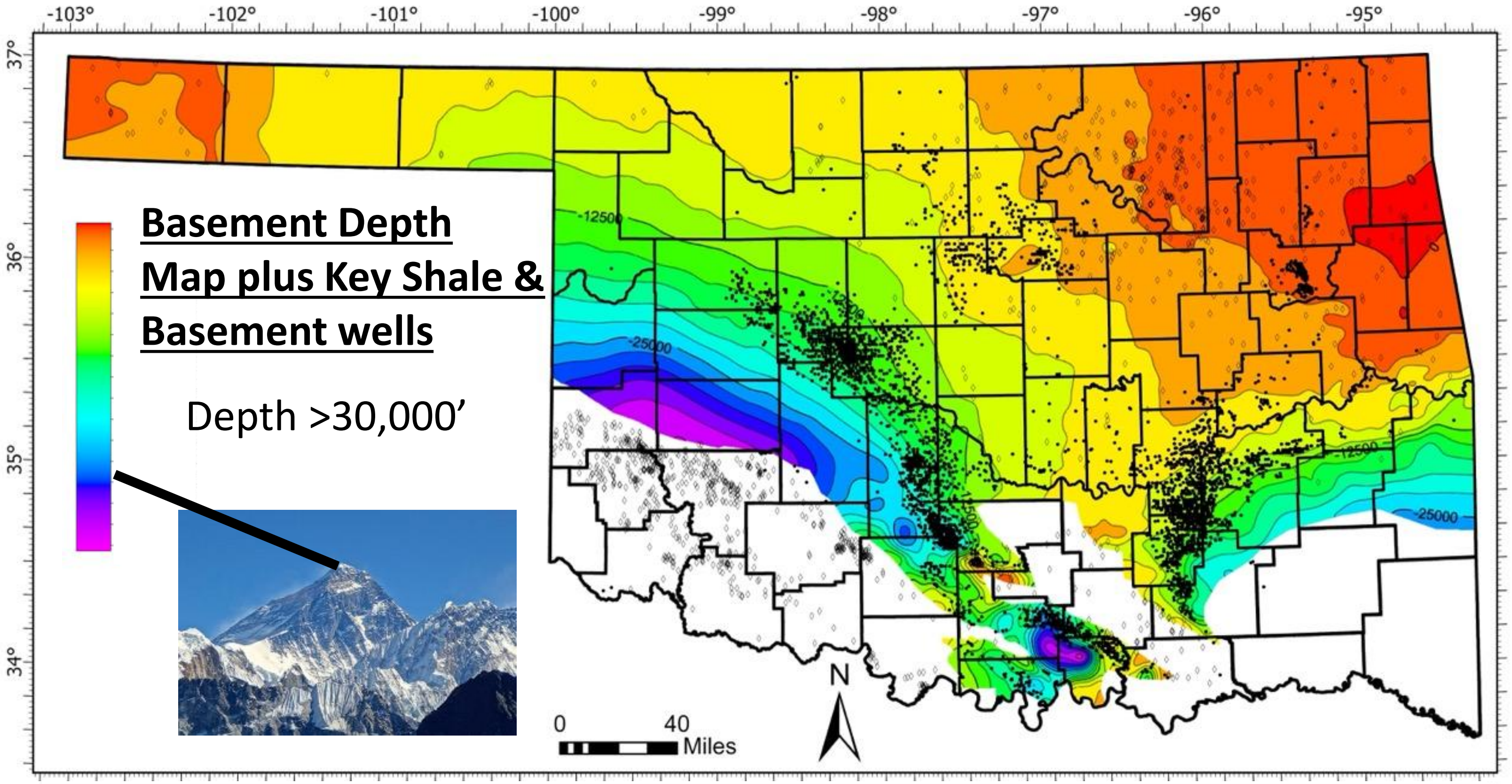
GEOLOGICAL OKLAHOMA SURVEY OGS 1908

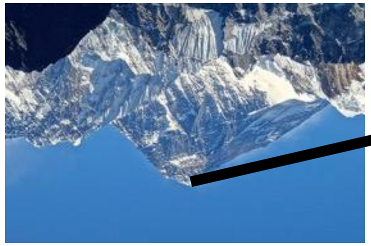
MEWBOURNE COLLEGE OF EARTH AND ENERGY The UNIVERSITY of OKLAHOMA

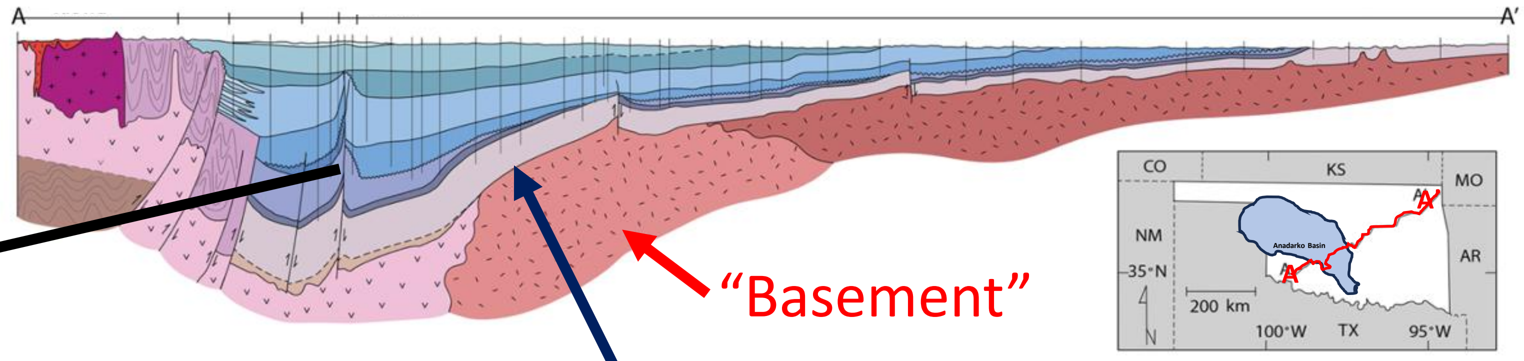
OKLAHOMA SECRETARY OF ENERGY & ENVIRONMENT

Oklahoma Geology:

- It's a BIG DEAL ….. Underground…
- Sedimentary rocks cover the "Basement" (often referred to as "granite")
- Well penetrations of deep, key shale formations ~ central OK & basement wells in southwestern OK.





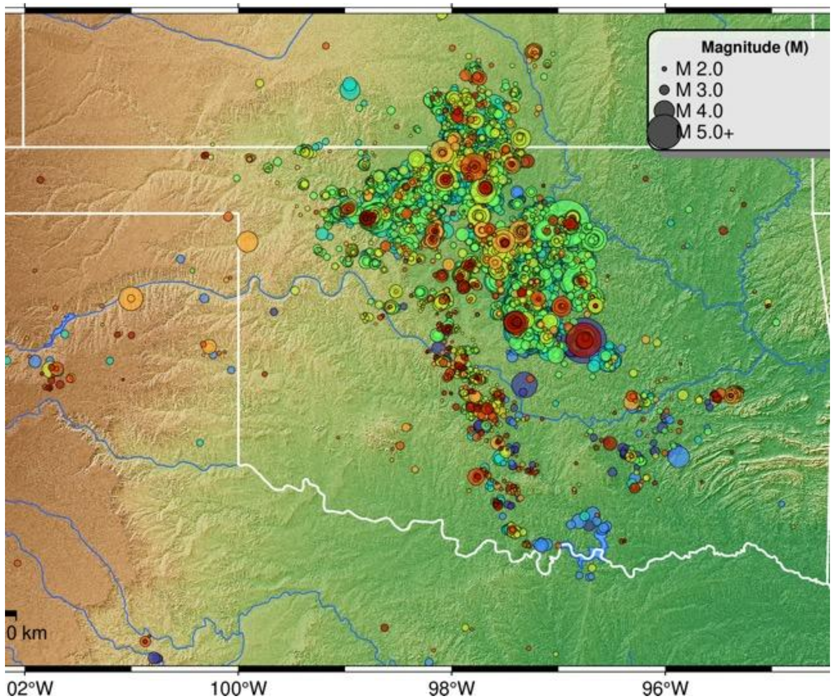


"Basement"

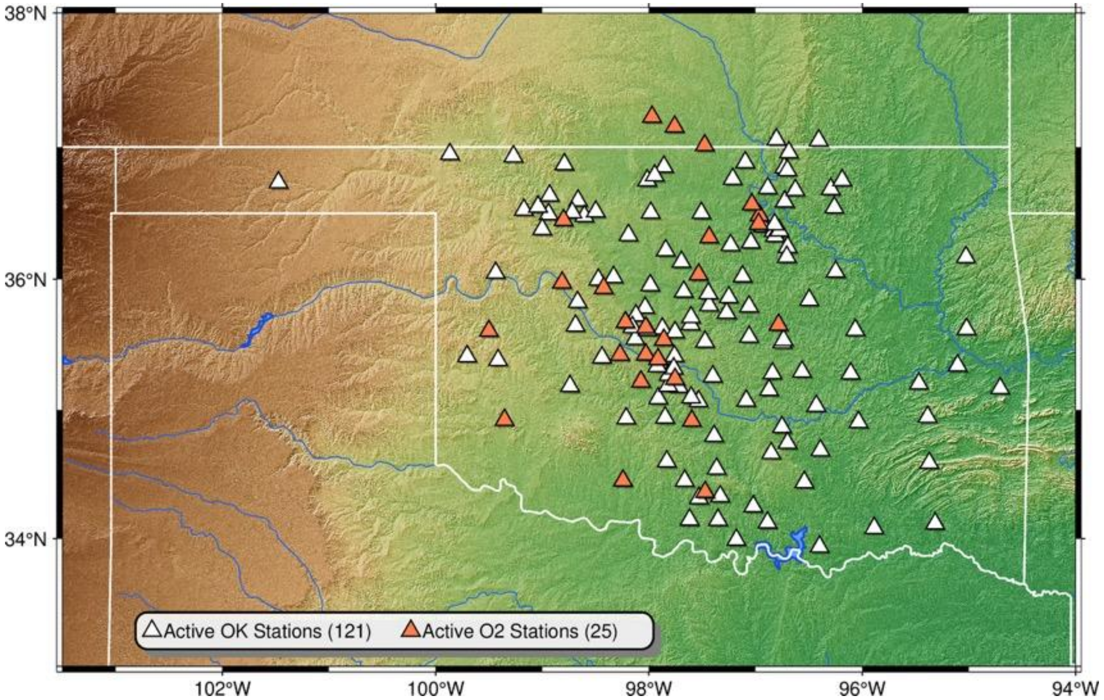
"Sedimentary Cover"

Oklahoma's Monitoring & Mitigation Capacity

Earthquakes >2, 2010-2025

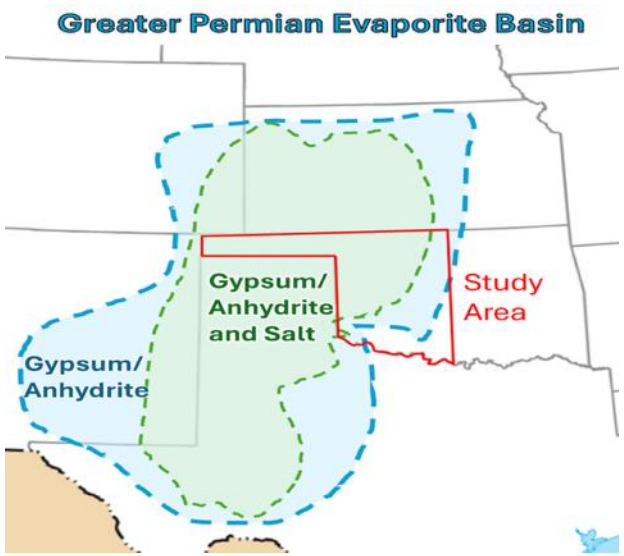


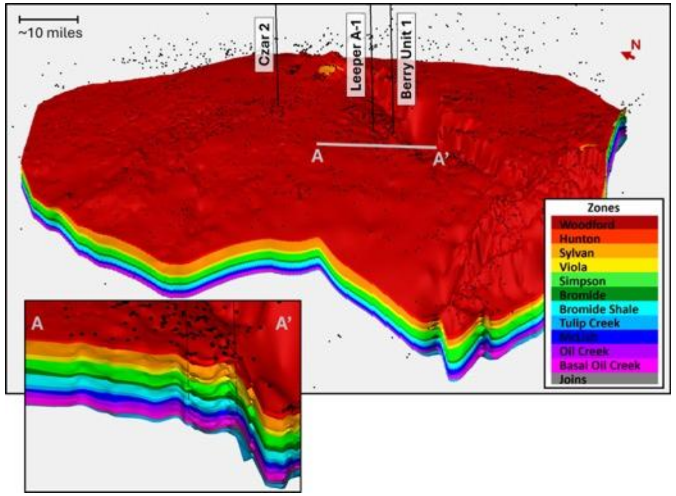
Oklahoma Seismic Network



- Earthquake distribution is partly controlled by geology, partly by industry activity
- State response to industry-linked earthquakes led to overall reduction
- State investment of $4M (2024-2026) to upgrade the seismic network

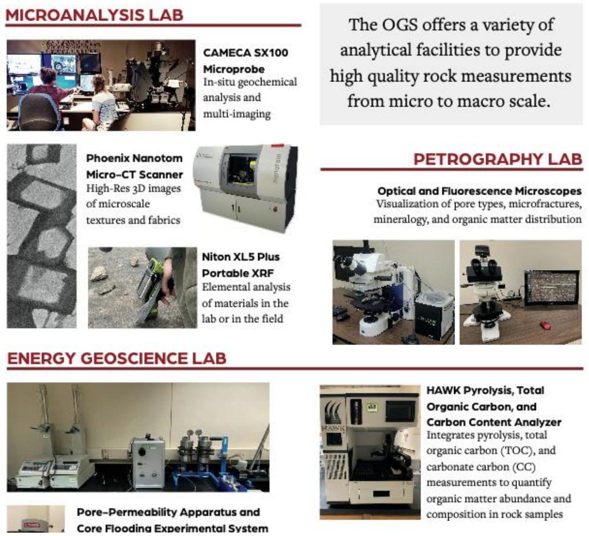
Oklahoma Geological Survey: Resources (Final Slide)





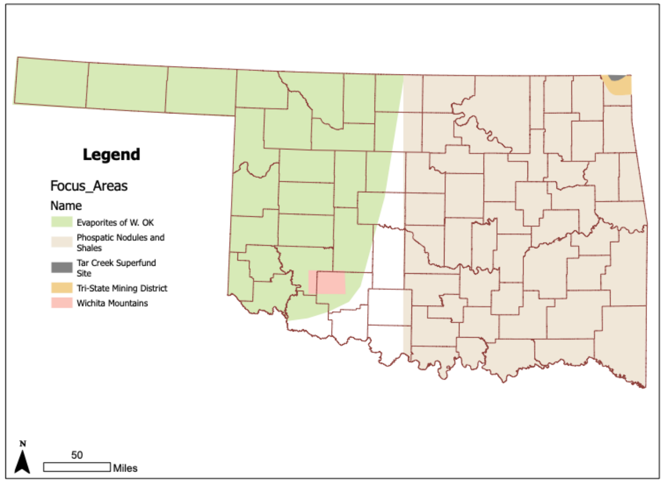
Facilities: Rock characterization to facilitate Oklahoma energy programs, inc. the state data and core repository

Current: U.S. Geological Survey Earth-MRI evaluation of critical minerals



Geomodeling & Simulation: recent DOE projects & partnerships with industry

Legacy studies: early 1980's geologic salt distribution for nuclear waste disposal



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