Kairos Power

Company Overview

For the Commonwealth of Kentucky and the Kentucky Nuclear Energy Development Authority

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FRANKFORT, KY

Kairos Power

Our mission is to enable the world's transition to clean energy, while improving people's quality of life and protecting the environment.

To achieve this mission, we are focused on delivering a technology that is both **safe** and **affordable.**

Kairos Power Overview

- Nuclear energy engineering, design, and manufacturing company singularly focused on the commercialization of the fluoride salt-cooled high-temperature reactor (FHR)
  - Founded in 2016
  - 550+ Full Time Employees
- Novel approach to nuclear development that includes iterative hardware demonstrations and in-house manufacturing to achieve disruptive cost reduction and provide true cost certainty
- Schedule driven by US demonstration by 2030 (or earlier) and rapid deployment ramp in 2030s
- Cost targets set to be competitive with natural gas in the US electricity market

Alameda Headquarters

Albuquerque Manufacturing Development Campus

Oak Ridge Reactor Demonstration Campus

PROGRESSIVE REACTOR-SCALE TECHNOLOGY DEMONSTRATIONS

Kairos Power Locations

Headquarters
(Alameda, CA)
RAPID Lab, Salt Lab

Kairos Power | MATERION

Molten Salt Purification Plant
(Elmore, OH)

Los Alamos NATIONAL LABORATORY

Low Enriched Fuel Fabrication Facility
(Los Alamos, NM)

Oak Ridge Campus
(Oak Ridge, TN)
Hermes 1, Hermes 2, ETU 3, Module Integration

Manufacturing Development Campus
(Albuquerque, NM)
ETU 1 & 2, Manufacturing, Module Integration, Salt Production, TRISO Lab, Pebble Lab

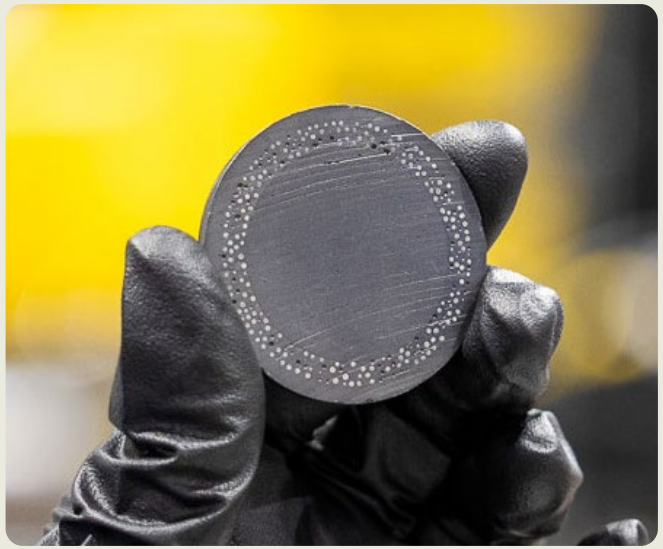
KAIROS POWER LOCATIONS

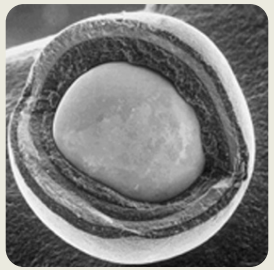
PARTNER LOCATIONS

TECHNOLOGY BASIS

Fluoride Salt-Cooled High Temperature Reactor

1 golf-ball-sized fuel pebble
= 4 tons of coal



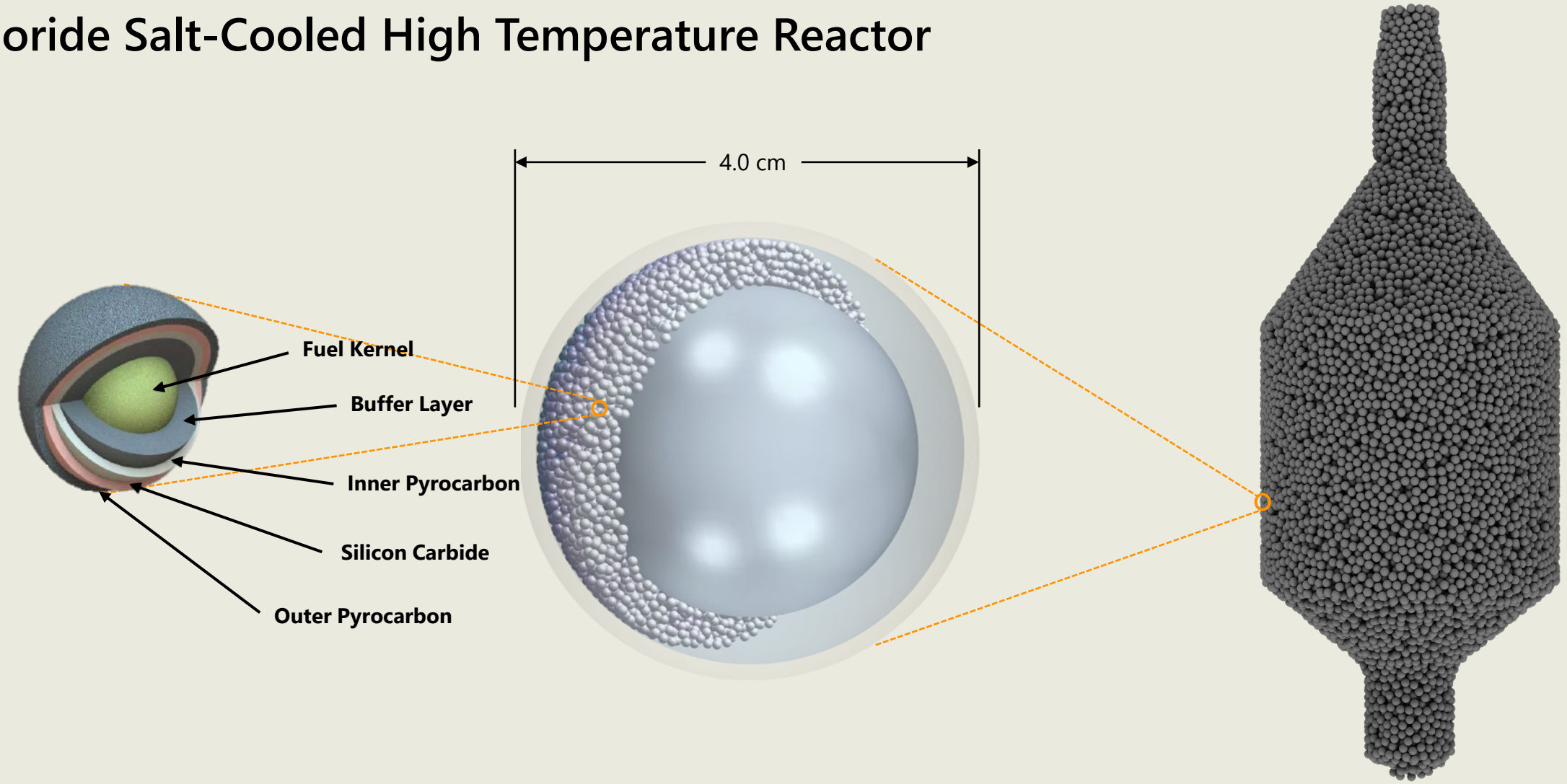


TRISO
Coated Particle Fuel

Flibe (2LiF-BeF2)
Liquid Fluoride Salt Coolant

TECHNOLOGY BASIS

Fluoride Salt-Cooled High Temperature Reactor



PROGRESSIVE REACTOR-SCALE TECHNOLOGY DEMONSTRATIONS

Kairos Power Path to Commercialization

PLAN → DESIGN → BUILD → TEST

Commercial Fleet

PLAN → DESIGN → BUILD → TEST

Hermes 2 Demonstration Plant

PLAN → DESIGN → BUILD → TEST

Hermes Low-Power Demonstration Reactor

PLAN → DESIGN → BUILD → TEST

ETU 1 ETU 2 ETU 3

Engineering Test Unit Series
(Non-Nuclear)

NUCLEAR

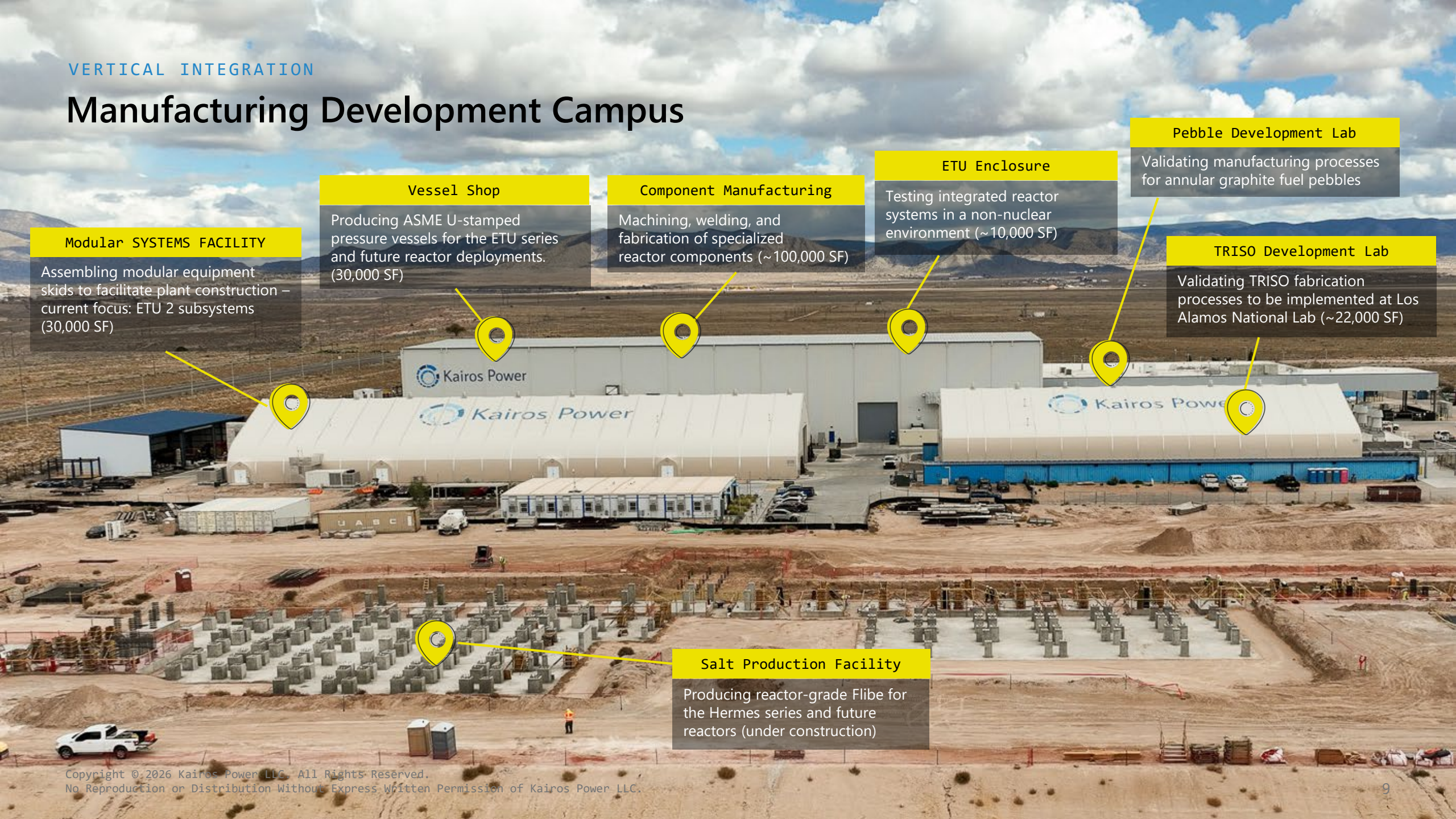
GENERATES ELECTRICITY

NRC PERMITTED

Iterative Development & Vertical Integration

VERTICAL INTEGRATION

Manufacturing Development Campus



Modular SYSTEMS FACILITY

Assembling modular equipment skids to facilitate plant construction – current focus: ETU 2 subsystems (30,000 SF)

Vessel Shop

Producing ASME U-stamped pressure vessels for the ETU series and future reactor deployments. (30,000 SF)

Component Manufacturing

Machining, welding, and fabrication of specialized reactor components (~100,000 SF)

ETU Enclosure

Testing integrated reactor systems in a non-nuclear environment (~10,000 SF)

Pebble Development Lab

Validating manufacturing processes for annular graphite fuel pebbles

TRISO Development Lab

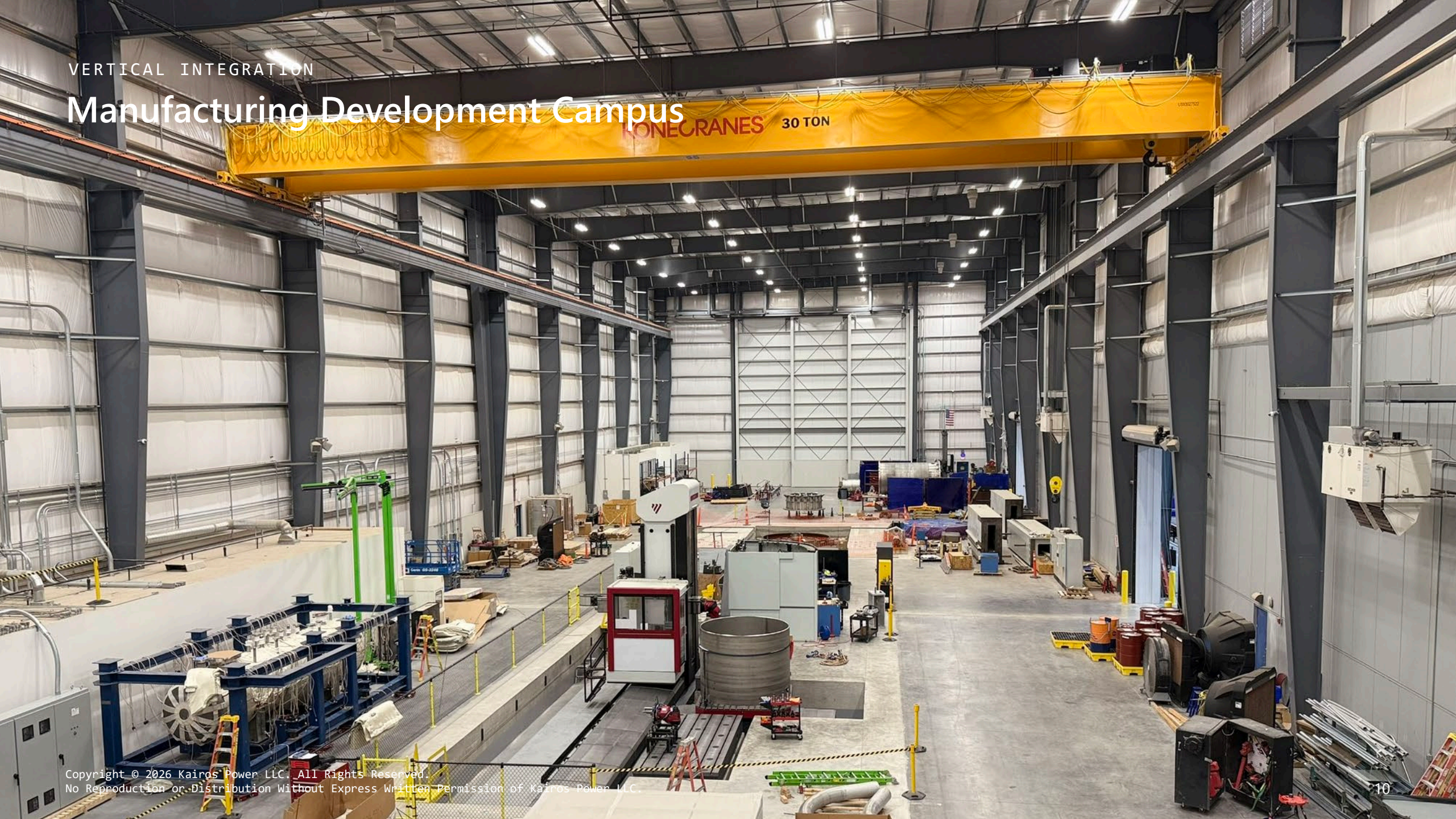
Validating TRISO fabrication processes to be implemented at Los Alamos National Lab (~22,000 SF)

Salt Production Facility

Producing reactor-grade Flibe for the Hermes series and future reactors (under construction)

VERTICAL INTEGRATION

Manufacturing Development Campus



ALBUQUERQUE, NM

Engineering Test Unit 1

Engineering Test Unit 2

- ETU 2 builds on learnings from ETU 1 to further mitigate development risk and accelerate operational experience in a large-scale Flibe facility
- ETU 2 firsts:
  - Modular design comprising 30+ plant equipment skids
  - First U2-stamped reactor vessel produced in-house by Kairos Power
  - Automated production of surrogate fuel pebbles

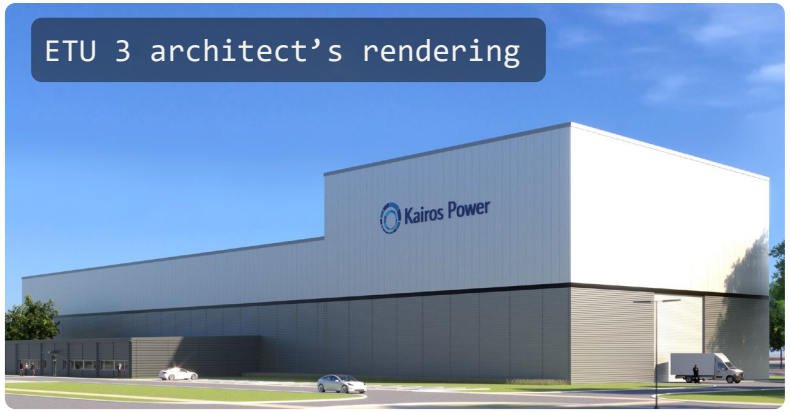
The pre-commission, install, test, and assemble (PITA) team is building ETU 2 equipment skids in Kairos Power's Albuquerque modular systems facility

OAK RIDGE REACTOR DEMONSTRATION CAMPUS

Construction Progress

Engineering Test Unit 3

- ETU 3 serves as a test bed for new construction and manufacturing methods, a training platform for plant operators, and a testing facility for remote handling and maintenance equipment
- The ETU 3 drilled pier campaign helped refine processes and QA checklists to enable the successful installation of the Hermes foundation
- The ETU 3 reactor vessel was our first to be fabricated using electron beam welding



ETU 3 is a steppingstone from non-nuclear to nuclear hardware demonstration

Hermes 1 Demonstration Reactor

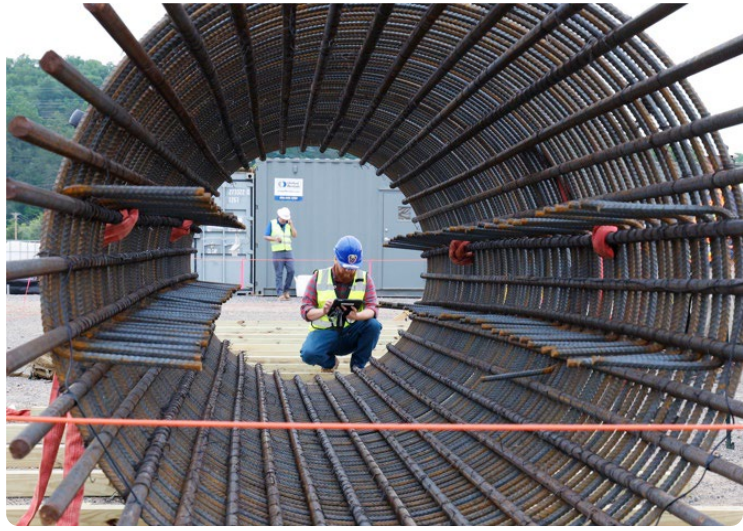
PIONEERING NUCLEAR CONSTRUCTION

- Kairos Power is the first U.S. Gen IV reactor developer to commence nuclear safety related construction under an NRC permit
- Hermes 1 will demonstrate Kairos Power's ability to produce affordable nuclear heat.
- The U.S. Department of Energy is investing up to $303 million in the project through a performance-based milestone agreement under the Advanced Reactor Demonstration Program.


Architect's rendering

Construction began July 2024


Foundation progress



U.S. DEPARTMENT of ENERGY

OAK RIDGE REACTOR DEMONSTRATION CAMPUS

Hermes 1 Construction Progress

First nuclear concrete placed May 2025

Hermes 2 Demonstration Plant

ENABLING THE COMMERCIAL FLEET

- Power Purchase Agreement with TVA to supply up to 50 MWe of clean electricity to the Tennessee Valley, helping to decarbonize Google data centers in the region
- First deployment under Kairos Power's order book agreement with Google to deploy a U.S. fleet of advanced nuclear power projects totaling 500 MW by 2035

TVA TENNESSEE VALLEY AUTHORITY

Google

Delivering clean electricity to the Tennessee Valley

Building Partnerships

FIRST CORPORATE AGREEMENT FOR MULTIPLE ADVANCED REACTOR DEPLOYMENTS

Google and Kairos Power Partner to Deploy 500 MW of Clean Electricity

- In Oct. 2024, Kairos Power and Google signed a Master Plant Development Agreement, creating a path to deploy a U.S. fleet of advanced nuclear power projects totaling 500 MW by 2035
  - The first 50 MW of the commercial fleet for Google will be in TVA's service territory
- Under the agreement, Kairos Power will develop, construct, and operate a series of advanced reactor plants and sell energy, ancillary services, and environmental attributes to Google under Power Purchase Agreements (PPAs)
- This innovative, multi-plant agreement supports technology development by extending Kairos Power's iterative demonstration strategy through its first commercial deployments

Google | Kairos Power

EMBEDDED IN OUR MISSION

Our Commitment to the Community

- Everything we do at Kairos Power is driven by our mission to improve people's quality of life while protecting the environment
- Our Commitment:
  - Deliver clean, reliable, affordable energy
  - Minimize our impact on the land, water, and natural resources
  - Engage and support local communities by:
    - Investing in workforce development and education
    - Offering high-paying, highly skilled jobs
    - Creating business opportunities for a diverse local supplier base


Headquarters


K-33 site

Kairos Power

THE CHALLENGE IS GREAT, BUT
SO TOO IS THE OPPORTUNITY