




Kairos Power

ENERGY SOLUTIONS ANNUAL CONFERENCE
PER PETERSON, CHIEF TECHNOLOGY OFFICER
JANUARY 2023

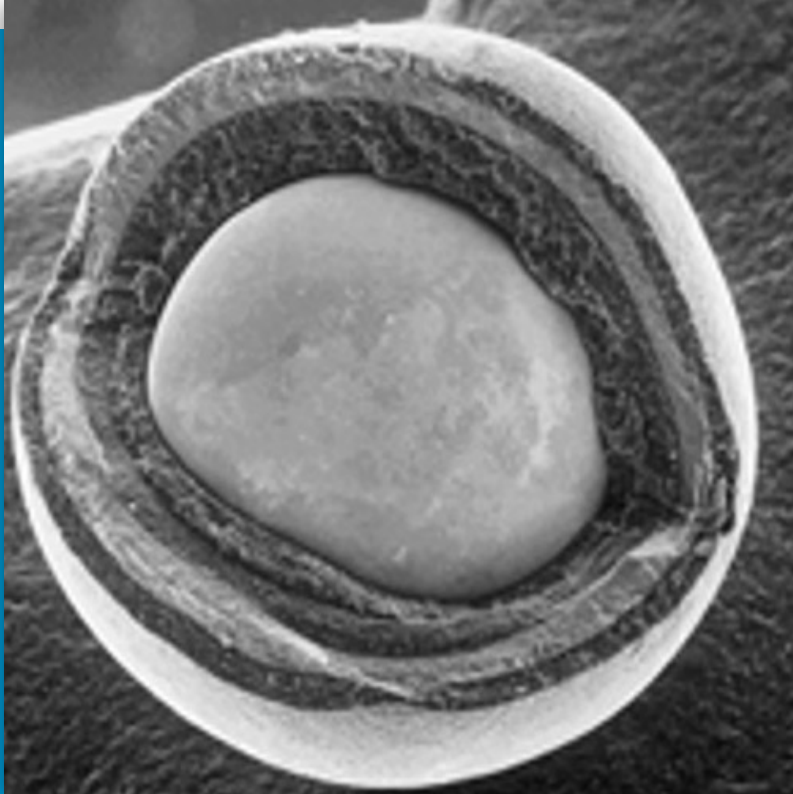


Kairos Power's mission is to enable the world's transition to clean energy, with the ultimate goal of dramatically improving people's quality of life while protecting the environment.

In order to achieve this mission, we must prioritize our efforts to focus on a clean energy technology that is *affordable* and *safe*.

Fluoride Salt-Cooled High Temperature Reactor

Technology Basis



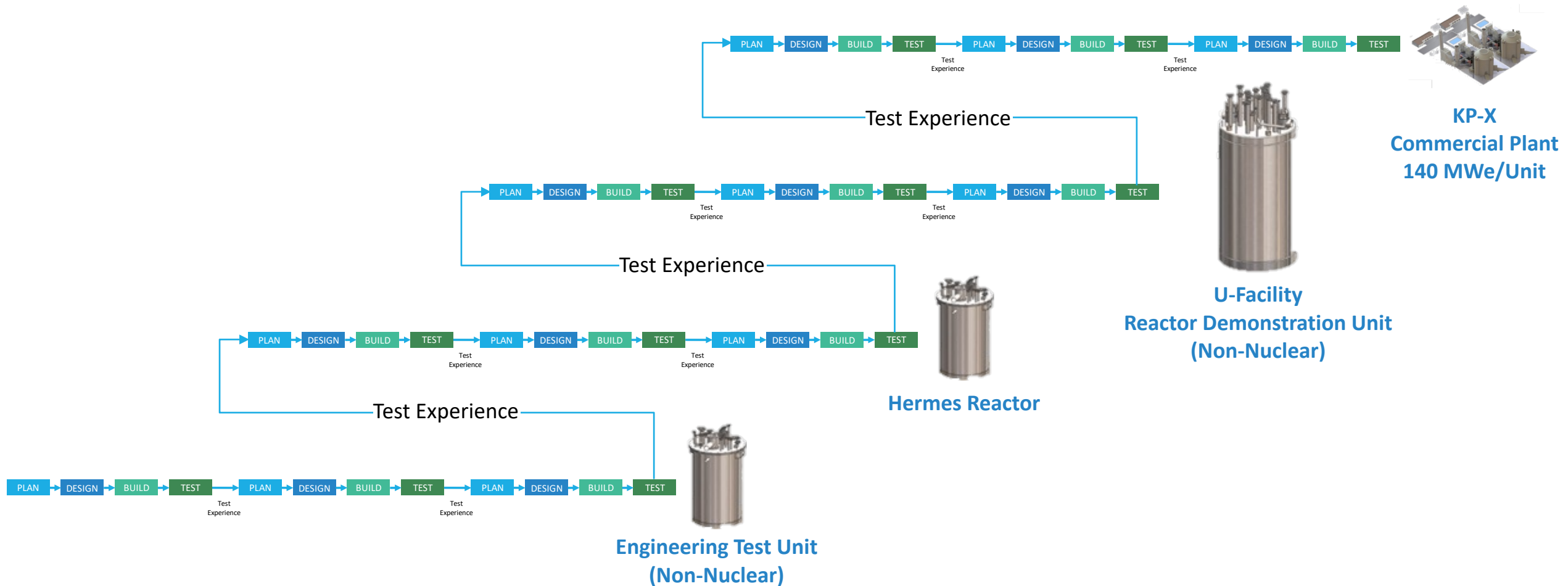
Coated Particle Fuel
TRISO



Liquid Fluoride Salt Coolant
Flibe ($2\text{LiF}\cdot\text{BeF}_2$)

Kairos Power Path to Commercialization

Successive Large-Scale Integrated Demonstrations



Kairos Power Locations and Infrastructure



HQ / R-Lab / S-Lab
Alameda, CA



T-Facility / Engineering Test Unit
Production Development Facility
Albuquerque, NM



Molten Salt Purification Plant
Elmore, OH

Instrumentation Labs
Rexford, NY

Hermes Reactor
Oak Ridge, TN

Licensing Office
Charlotte, NC



Kairos Power Facilities

- RAPID Lab
- Salt Lab
- Testing Facility

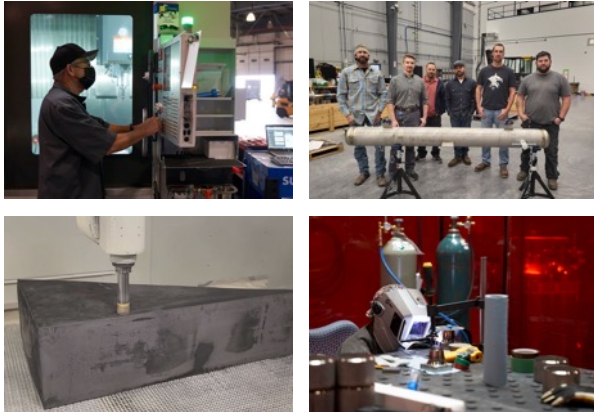
Vertical Integration

Delivering Cost Certainty

Kairos Power has made significant investments in infrastructure to de-risk the supply chain, vertically integrating production of all components that:

- 1) Touch salt
- 2) Are safety-related
- 3) Are not available off-the-shelf

KP Southwest Manufacturing Facility



In-house manufacturing of specialized components

Pebble Development Lab & TRISO Development Lab



Non-nuclear fuel development

Molten Salt Purification Plant



Commercial-scale Flibe production

Building the Engineering Test Unit

Albuquerque, New Mexico



Construction complete / hot commissioning in progress
November 2022

Assembling the graphite reflector
April 2022



Adding the 30,000th simulated fuel pebble
May 2022

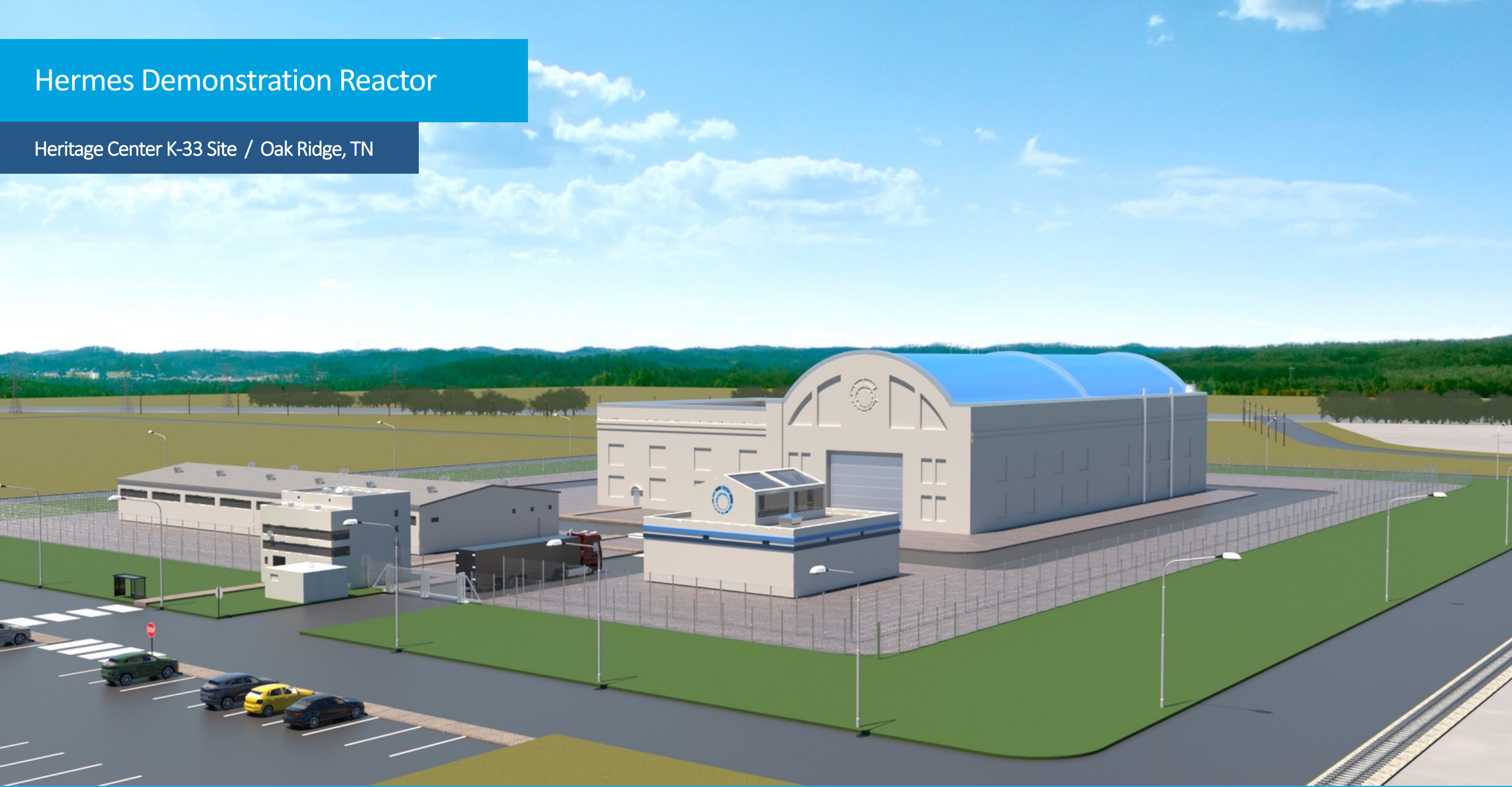


ETU Control Room
Albuquerque, NM



Hermes Demonstration Reactor

Heritage Center K-33 Site / Oak Ridge, TN



Enabling the world's transition to clean energy

Improving people's quality of life and protecting the environment

• Kairos Power's Commitment to Environmental Justice

- Mission driven
- Engaging and supporting local communities
- Diversity, equity and inclusion program
- Priority in building on brownfield sites
- High energy density / low land use



1 fuel pebble = 4 tons of coal



Headquarters
Alameda, CA



KP Southwest
Albuquerque, NM



K-33 Site
Oak Ridge, TN

Kairos Power Waste Strategy

- Kairos Power's waste strategy is aligned with our mission and supports environmental justice objectives
- Applying a **rapid iterative approach** to deactivation and decommissioning (D&D) activities
 - Learnings from **ETU 1.0, 2.0** and **3.0** will be integrated into D&D plans for the **Hermes demonstration reactor**
- **Goal to keep D&D costs in-line with current LWR fleet using four key strategies:**
 - Minimize waste generation
 - Efficient classification of waste
 - Reduce the volume of waste in each category by:
 - Separating radioactive from conventional waste
 - Interim storage to decrease radioactivity of short-lived nuclides
 - Utilize existing low-level waste disposal path consistent with LWR nuclear end-cycle



Used fuel from Hermes will be suitable for interim storage / transport to a federal disposal facility using standard casks, and could potentially be re-used in future KP-FHRs



Learn more at kairospower.com

Visit our virtual open house at kairospower.consultation.ai