Kairos Power

Company Overview

EDWARD BLANDFORD, CTO & CO-FOUNDER

PER PETERSON, CNO & CO-FOUNDER

FEBRUARY 2022

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*.

Overview of Kairos Power

- Nuclear energy engineering and design company **singularly focused** on the commercialization of the fluoride salt-cooled high temperature reactor (FHR)
  - Founded in 2016
  - Current Staffing
    - 244 Employees
    - ~90% Engineering Staff
- Private funding commitment to engineering design and licensing program and physical demonstration through nuclear and non-nuclear technology development program
- 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

Kairos Power Headquarters

Kairos Power Team

Internal Milestones and Accomplishments:

R-Lab
Rapid Prototyping and Technology Development

S-Lab
Flibe Chemistry and Materials Testing Lab

T-Facility
Engineering Test Unit
New Mexico Expansion

Hermes Reactor
Site Selection
East Tennessee Technology Park

External Engagement:

Nuclear Regulatory Commission (NRC)
Construction Permit Application Under Review

DOE Advanced Reactor Demonstration Program (ARDP)
Risk Reduction Award

Kairos Power

TVA TENNESSEE VALLEY AUTHORITY

Cooperative Development Agreement
Development & Demonstration Collaboration for Hermes

Fluoride Salt-Cooled High-Temperature Reactor Technology Basis

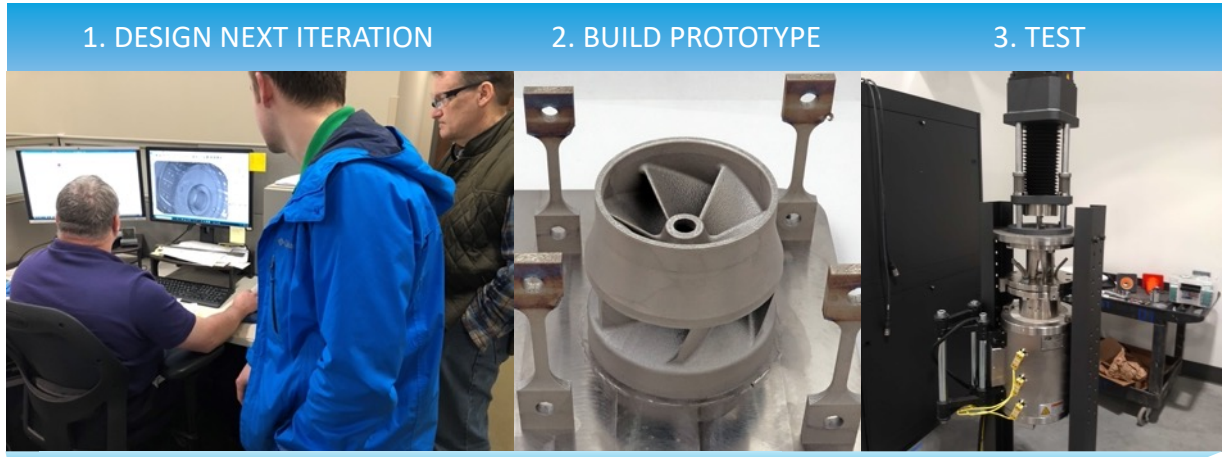
Coated Particle Fuel

TRISO

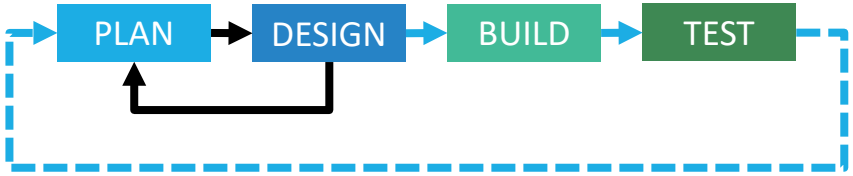
Liquid Fluoride Salt Coolant

Flibe ($2LiF\text{-}BeF_2$)

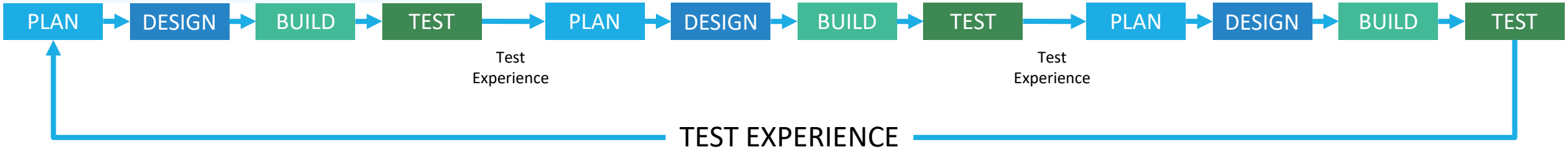
Kairos Power Nuclear Development Paradigm Shift



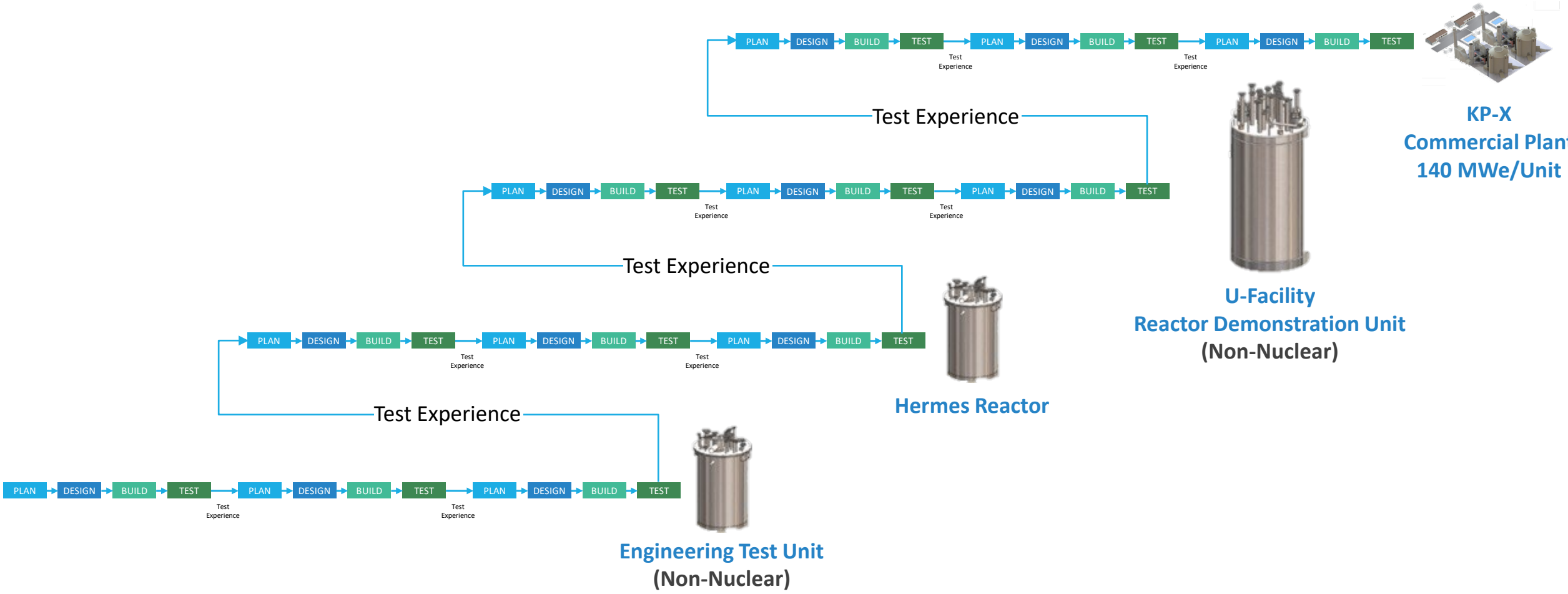
Conventional Nuclear Development Cycle



Kairos Power Accelerated Test Cycles for Innovation and Optimization



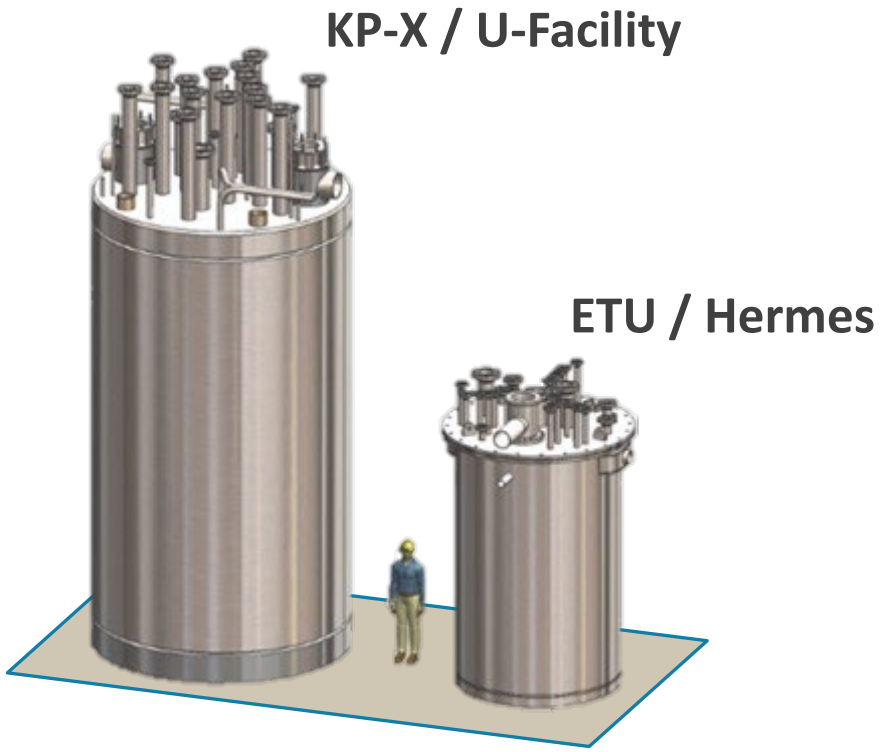
Kairos Power Path to Commercialization: Successive Large-Scale Integrated Demonstrations



Engineering Test Unit

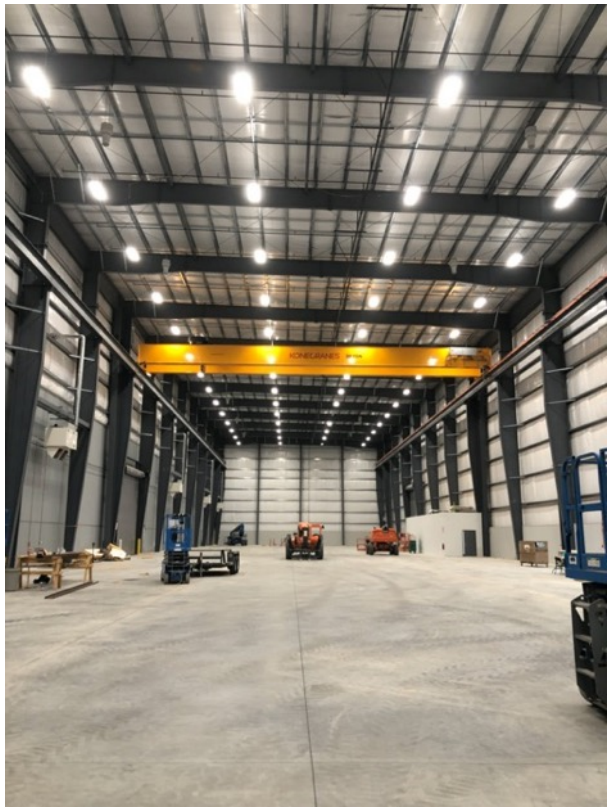
Kairos Power Engineering Test Unit (ETU) Overview

- What?
  - A **non-nuclear, unenriched Flibe-wetted,** and **isothermal** integrated test for principal SSCs (e.g., vessel, pump, pebble handling, CRDMs, etc.)
  - Full-scale version of Hermes and proportional to KP-X Commercial Reactor
- Why?
  - **Cost:** Establish competitive cost through vertical integration
  - **Supply Chain:** Initiate and exercise supply chain for KP-FHR specialized components and materials
  - **Design / Test**: Demonstrate design and integration of principal KP-FHR technologies
  - **Operations:** Accelerate experience base of large-scale Flibe facility and initial plant operations



ETU should provide confidence in Kairos Power's ability to design, build, and operate high-temperature Flibe systems

KP-Southwest T-Facility Annex Completed March 30th

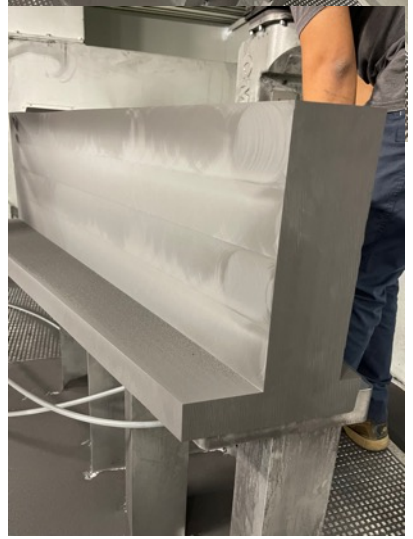


40,000 sq ft high bay annex to support state-of-the-art, large-scale Flibe development and qualification testing

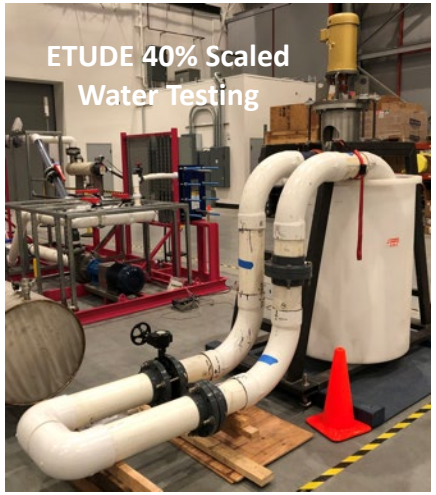
(l-r): Kairos Power CEO and co-founder Mike Laufer with Secretary Jennifer Granholm (DOE) and U.S. Senator Martin Heinrich (NM) at KP-Southwest in August 2021

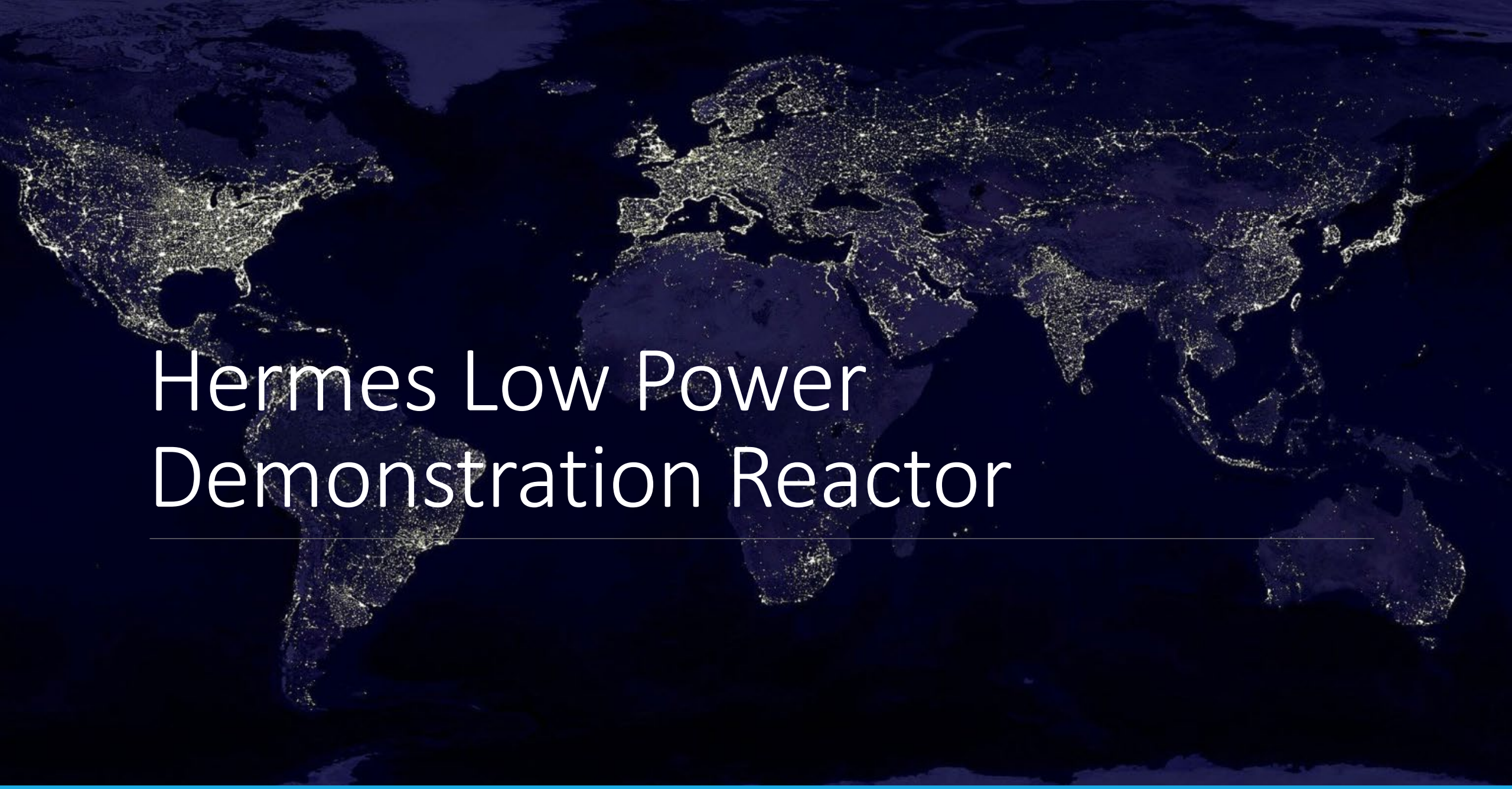
ETU Vessel Status

Graphite Block Manufacturing at KP-SW



ETU Primary Salt Pump

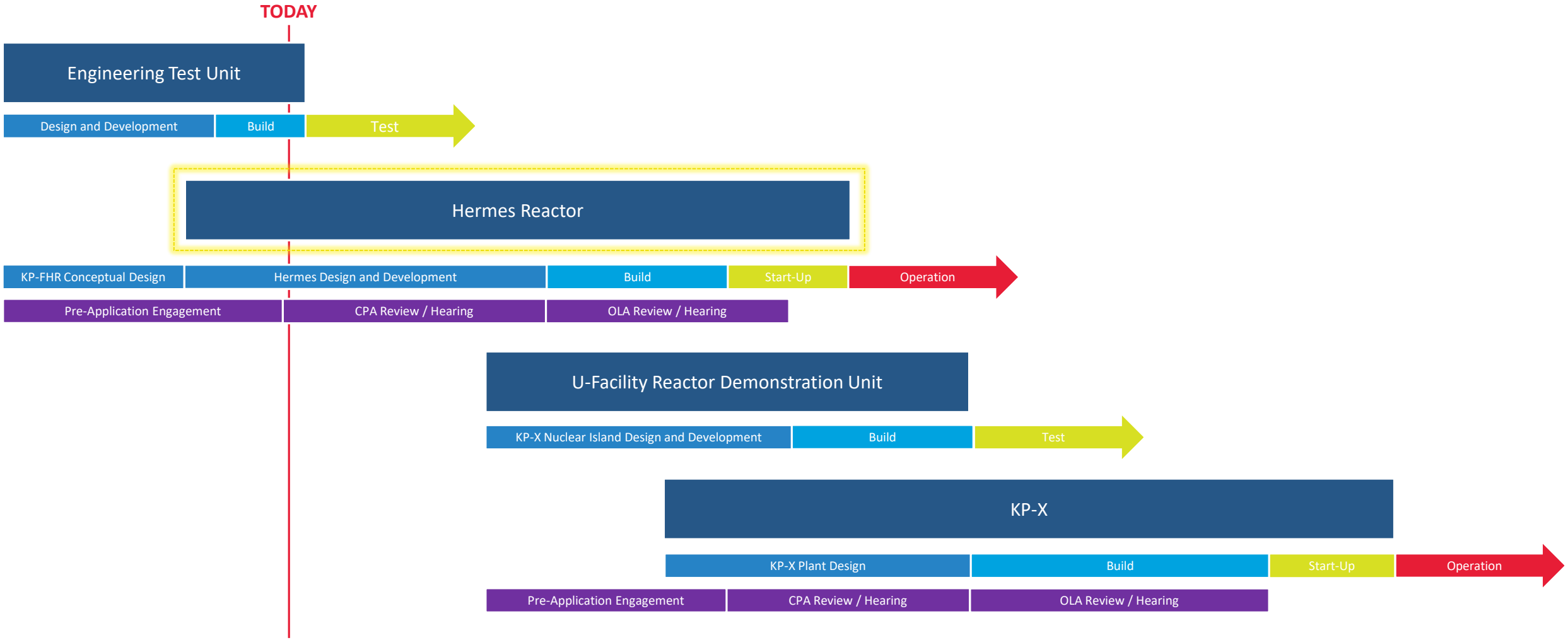




Hermes Low Power Demonstration Reactor

Artist’s rendering of the Hermes facility

Kairos Power Development Schedule



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