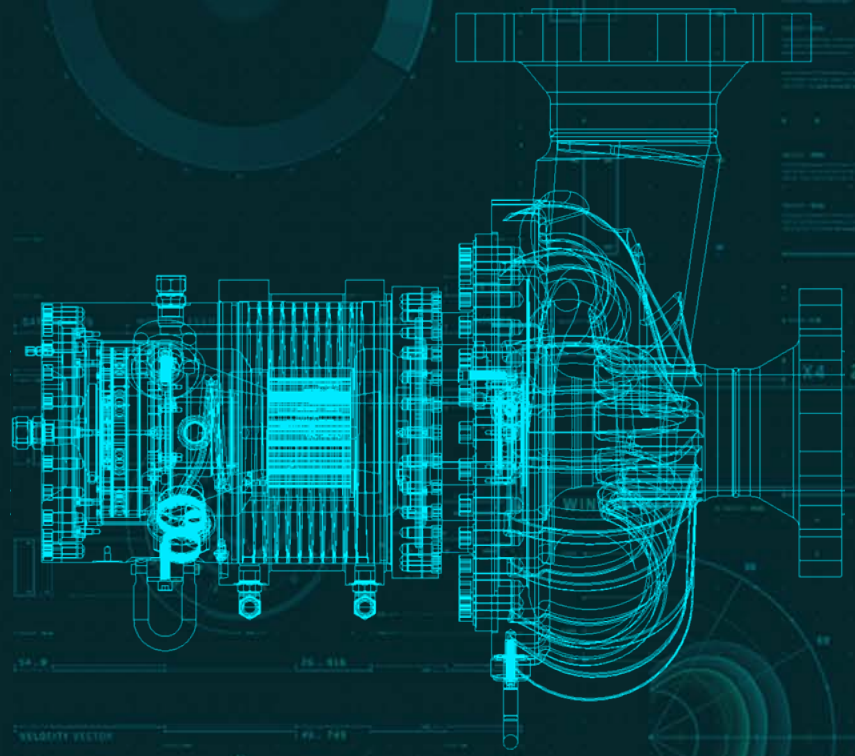


RADIANT

Building Earth’s first mass-produced nuclear reactor.

```
# Constants
reactivity = 0.005  # Reactivity (dimensionless)
beta = 0.0065  # Delayed neutron fraction (dimensionless)
lambda_d = 0.08  # Decay constant of delayed neutrons (1/s)
rho_temp_coeff = -0.0001  # Temperature coefficient of reactivity (1/K)
initial_temp = 300  # Initial temperature of the reactor (K)
heat_capacity = 1000  # Heat capacity of the reactor core (J/K)
power_initial = 1e6  # Initial power output (W)
time_step = 0.1  # Time step (s)
time_end = 500  # End time of the simulation (s)
```

Regulatory Engagement Plan Update - PUBLIC

September 4th, 2025, 9:00 – 9:40AM

Agenda

Topic
Radiant Overview
General Kaleidos Overview
Licensed Scope
Draft NRC Documents
Q&A

Radiant Industries, Inc.

- **Team:**
  - ~100 employees
  - former SpaceX, Naval Reactors, and National Labs
- **Investors:**
  - Andreessen Horowitz (a16z)
  - DCVC
  - Founders Fund
  - Chevron
  - IQT, and other leading capital providers
- **Headquarters:**
  - 38,000 ft^2 facility in El Segundo, California.
- **Factory:**
  - 350,000 ft^2 facility capable of 50 new reactor units/yr
  - Location announced Fall 2025
- **Commercial Readiness:**
  - Competitively selected by DOE as 1st nuclear reactor design to be tested in DOME in Spring 2026
  - Executed first-ever agreement to deploy mass-manufactured reactor at an AF base
  - Executed agreements with commercial customers for > 20 reactors

Passive Cooldown Demonstration: September 17, 2024

Radiant development is 95% funded by private capital

a16z · USV Union Ventures Square · DC Data Collective · FOUNDERS FUND · Chevron · iqt

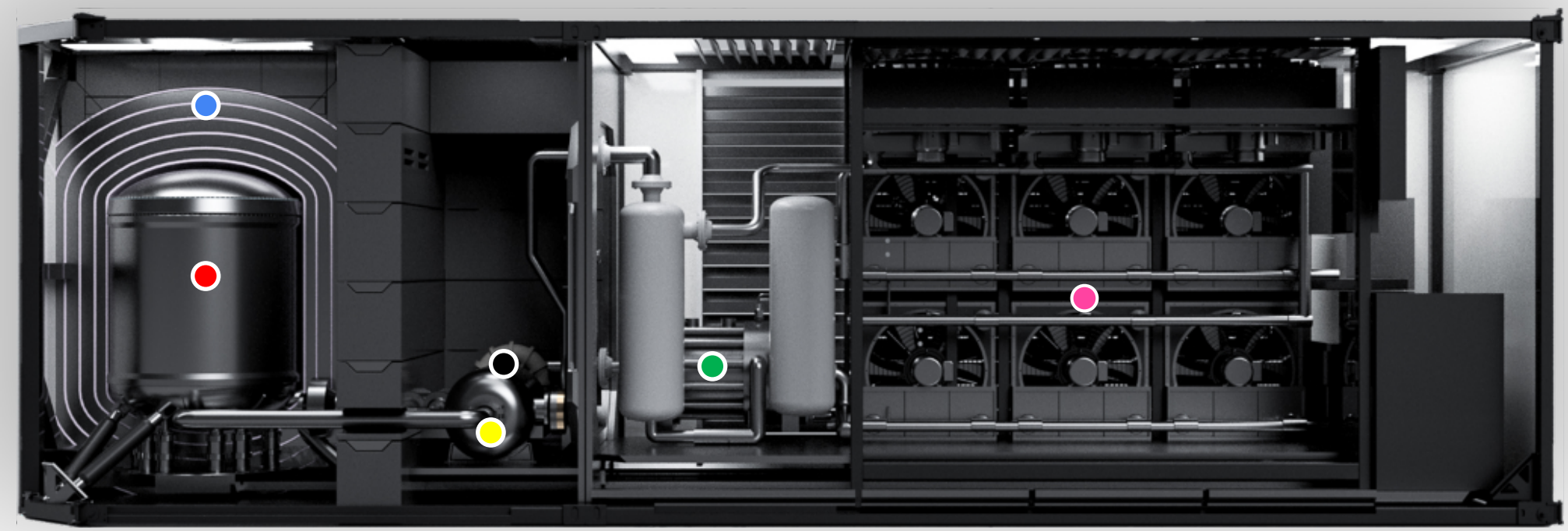
- An experienced team backed by the world's best investors -

Testing at DOME in 2026 - On track for delivery in 2028.

- Selected first to test at Idaho National Laboratory
  - On track to deliver unit
  - Procurement activities ongoing
  - Approved ASME NQA-1 Quality Program

Nuclear / Heat Generation

Electricity Generation



Shielding

Reactor Core

Helium Circulator

Primary Heat Exchanger

Turbine Alternator Compressor

Heat Sinks

Nuclear reactor splits uranium atoms which generates heat

Pumped helium transfers heat to spin turbine

Turbine generates electricity

Core shielding allows for shipment back to factory

Kaleidos – 1MW nuclear in a box

Weeks to Install

Up to 4 units for 4MW on 4,000 square feet of space. Fence and shielding box allow public-adjacent operation.

Flexible Generator

Can operate at down to 30% electric output to conserve fuel. Co-generates 1.9MW heat at 80C.

Zero On-Site Waste

Reactors return to factory for refueling every 5 years. Ships from factory by land, sea, or air.

Resilient and Clean

72,000 tons of CO2 avoided over the 20-year reactor life. Site returns to greenfield within 24 months.

Factory Operations

Production

New reactors assembled, fueled, and tested.

Transport

Each Kaleidos fits on a single trailer. Radiant to execute escorted transport licensed by the NRC, US DOT, and WY DOT.

Refueling

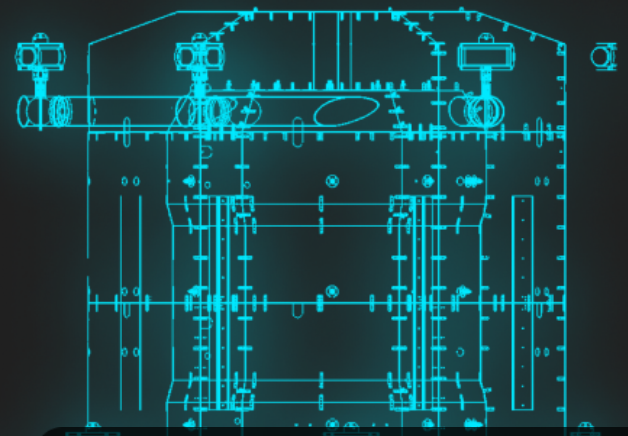
Reactors shipped back to factory for maintenance and refueling.

Temporary Storage

Spent fuel temporarily stored in secure, above ground concrete casks.

Safety by Design

Inherent safety features ensure that disaster is never an option.



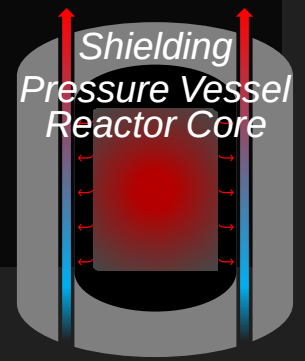
The protective coating of TRISO fuel tolerates 1,600C, preventing the release of radioactive material.

Meltdown-proof

Helium gas coolant does not become radioactive and safely dissipates into the atmosphere in the event of a leak.

Leak-safe

In the event of loss of power, reactor simply shuts down and cools-off.



Power failsafe

Power 1,000 homes.

Power 2,000 servers.

Replace 1,200 gallons of diesel per day.

Provide 99.99% resilient power to installations.

Licensed Activities

- Production Site (factory location)
  - Fuel receipt, storage and handling
  - Reactor unit operational testing
  - Reactor unit initial and re/defueling
  - Spent fuel storage

- Kaleidos Unit (FOAK – NRC)
  - Reactor unit operation
  - Reactor unit transportation (fresh & irradiated fuel)

NRC Draft Documentation

- Interactions with NRC Staff have indicated draft documentation should be used to structure the license application.
  - NUREG-2249, Generic Environmental Impact Statement for Licensing of New Nuclear Reactors, Draft
  - NURES-2212, Standard Review Plan for Applications for 10 CFR Part 70 Licenses for Possession and Use of Special Nuclear Materials of Critical Mass but Not Subject to the Requirements in 10 CFR Part 70, Subpart H, Draft
  - SECY-25-0052, Nth-of-a-Kind Microreactor Licensing and Deployment Considerations
  - Part 73 Rulemaking for Advanced Reactors (NRC-2017-0227) – Approval pending 3/2026

- Timeline for endorsement?


RADIANT