



Office of  
Nuclear Energy

# 2022 ID Accomplishments

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Office of Nuclear Energy

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# New Reactor Projects

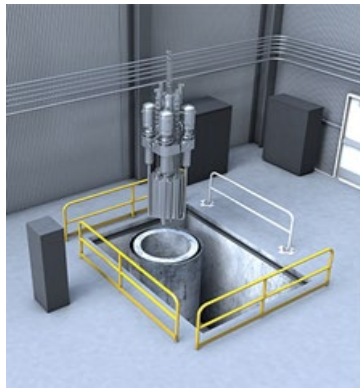
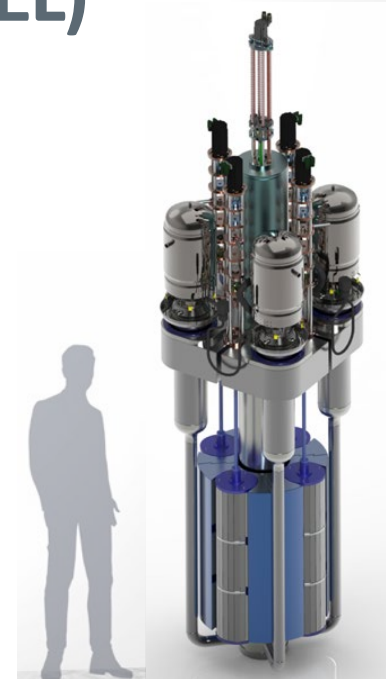
## ■ Pele

- Record of Decision– April 2022
- BWXT began TRISO fuel production
- Startup in 2025.



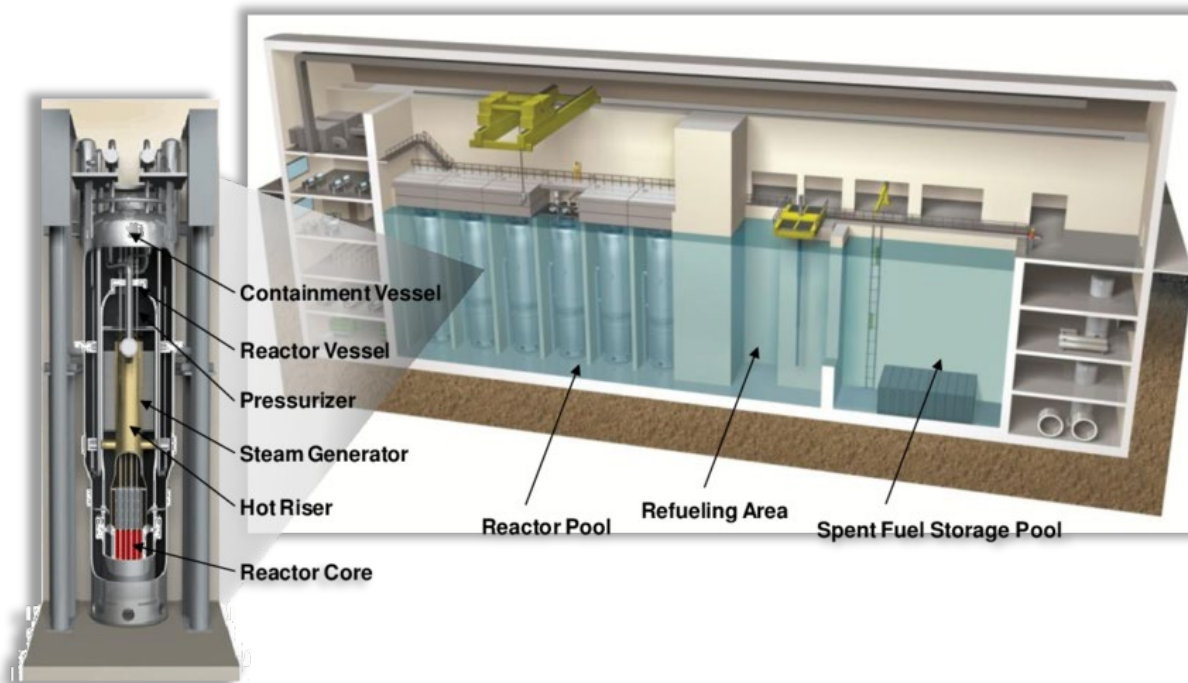
# Microreactor Applications Research Validation and Evaluation Project (MARVEL)

- Sept 2022, completion of the 90% design review.



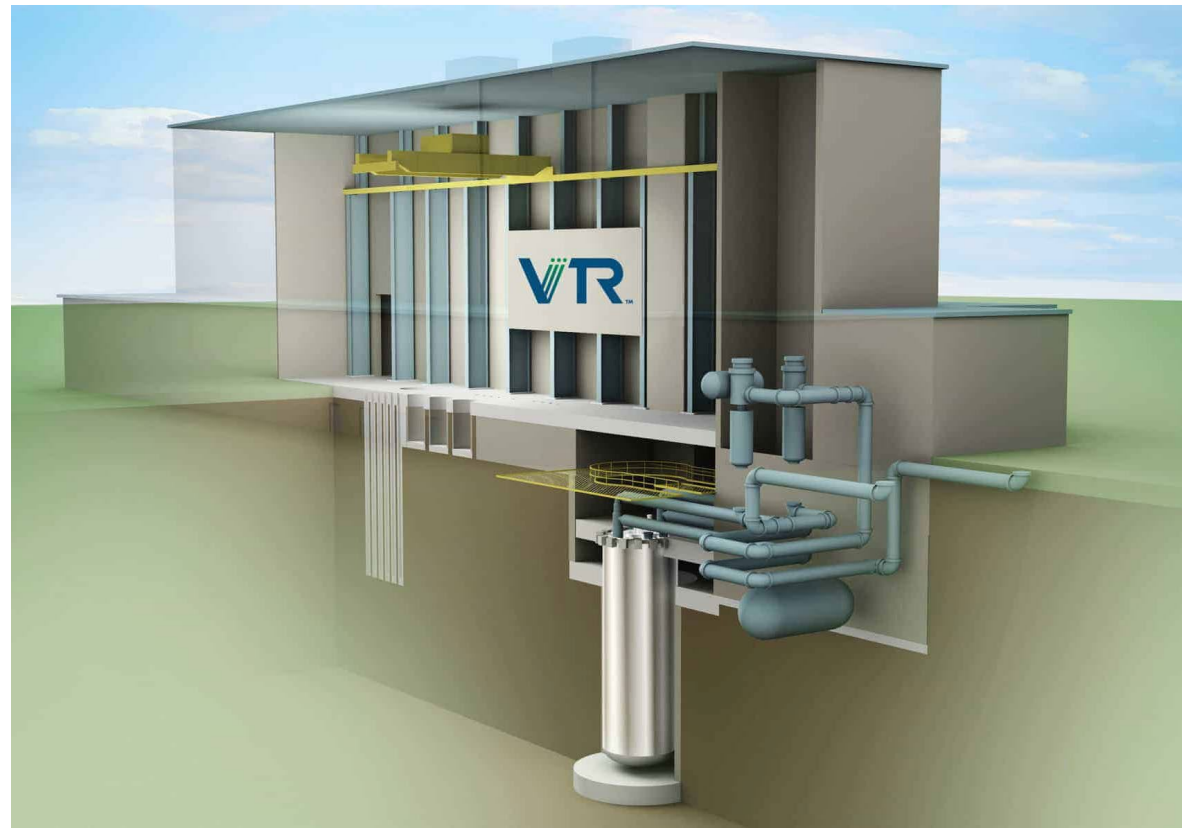
# Carbon Free Power Project (CFPP)

- Completed all onsite investigations of preferred site.
- Coordinating working with UAMPS and commercial utilities for power transmission and distribution.

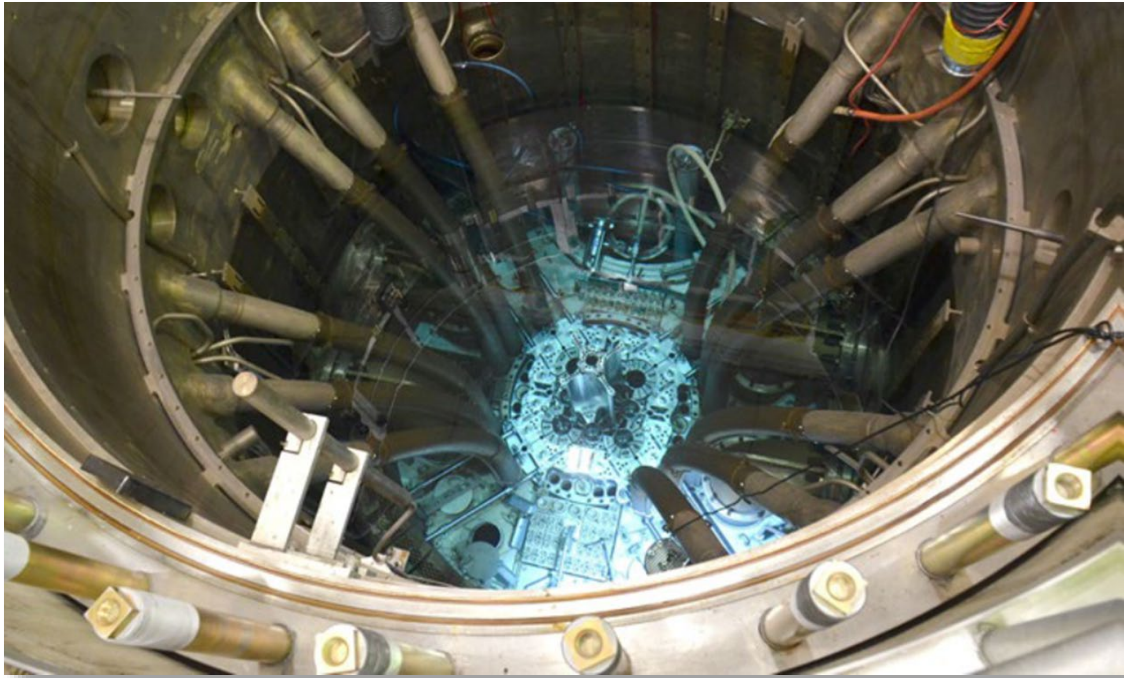


# Versatile Test Reactor (VTR)

- July 2022- DOE signed the Record of Decision.



# ATR Core Internals Changeout VI

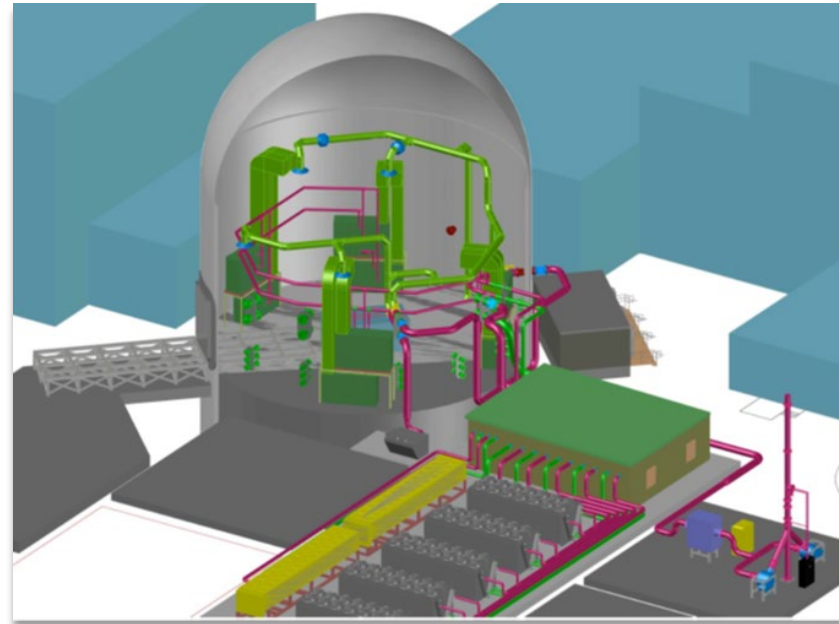


- March 2022- Core Internals Changeout (CIC) VI completed
- Longest and most complex outage in ATR history CIC .



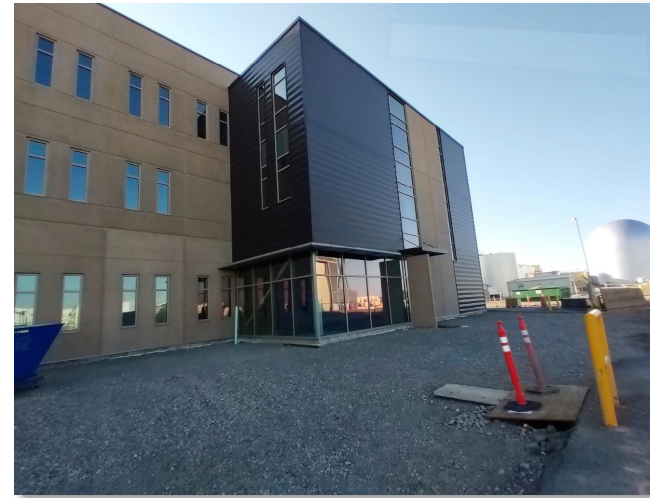
# DOME

- Final conceptual design
- Preliminary Documented Safety Analysis to DOE for review and approval.



# Sample Preparation Lab Project

- **Construction is 73% complete**
  - Expected to complete in 2024.
- **Exterior:** (ahead of schedule) all exterior building systems (i.e., windows, pre-cast walls, roofing) providing a weathered-in structure
- **Interior:** Installed mechanical equipment such as HEPA filter housings, freight elevator, and stainless-steel exhaust ductwork





# Nuclear Energy and Space

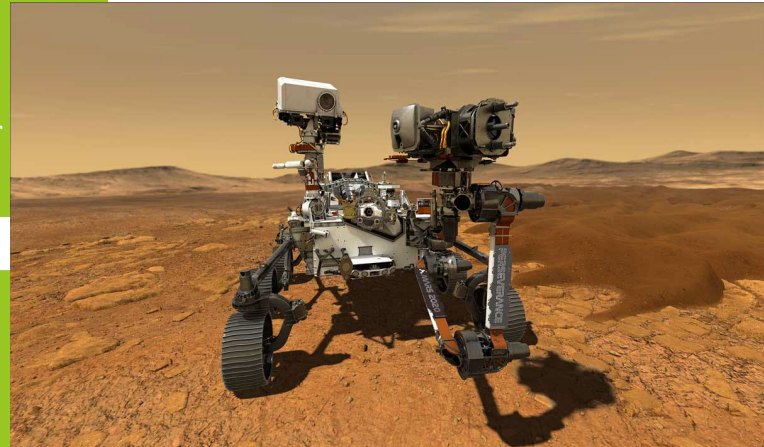
- **NASA and DOE collaboration**
  - Partners with NASA to design, develop and deploy nuclear technologies to power space exploration missions

## Radioisotope Power Systems

- Constant Rate Production (Pu-238)
- Mars 2020 Mission
- Dragonfly Mission
- Radioisotope Thermoelectric Generator Development

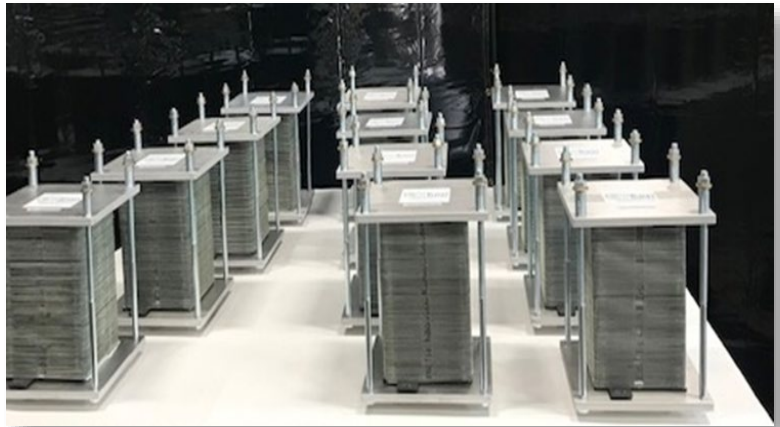
## Nuclear Fission Power Systems

- Nuclear Thermal Propulsion Demonstration
- Fission Surface Power
- Common Fuel Development



# Hydrogen Production

Produced gaseous H<sub>2</sub> using a **solid oxide electrolysis cell (SOEC)** at a rate of ~2kg/hr for over 2,000 hours using simulated waste heat from a nuclear power plant



# National Security Programs

- Wireless Security Leadership
- Power Grid Testbed Expansion
- Special Manufacturing Capability
- National Cyber Director visit



# FY22 vs FY23 Reimbursable Work Funding

**FY 2022  
Funding  
Level**

**Ceiling \$805M**

**FY 2023  
Funding  
Level**

**Ceiling \$1.1B**



# Idaho Settlement Agreement

**OVER 1000 –**  
REGULATORY  
MILESTONES AND  
DELIVERABLES  
HAVE BEEN MET ON  
SCHEDULE SINCE THE  
BEGINNING OF THE  
CLEANUP MISSION

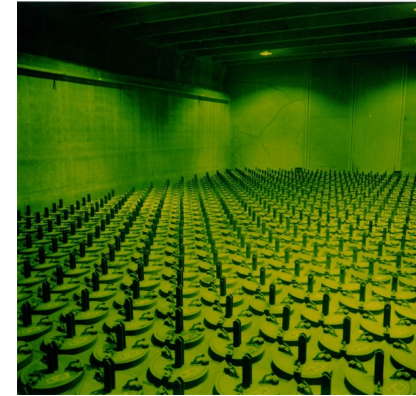
**18 MILESTONES**  
EXPERIENCED  
DELAYS,  
11 HAVE SINCE  
BEEN COMPLETED,  
RENEGOTIATED, OR  
RESCHEDULED.



**46,574 cubic meters of stored transuranic waste** sent out of Idaho for disposal at WIPP

**14,884 cubic meters of legacy mixed low-level waste** sent out of Idaho

**219 facilities and structures** (including five reactor vessels and two massive hot cells) **demolished**



**1,000 spent nuclear fuel elements** from the Advanced Test Reactor transferred to dry storage





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