

The TerraPower logo features the company name in a dark blue, sans-serif font. Above the text is a green, curved line that starts under the 'T' and ends under the 'P', resembling a stylized wave or a protective shield. The background of the slide is white with decorative elements: on the left, a large green graphic of concentric circles with dots inside, resembling a stylized atom or a reactor core; on the right, a faint green graphic of concentric circles with dots; and at the bottom, a blue graphic of concentric circles with dots.

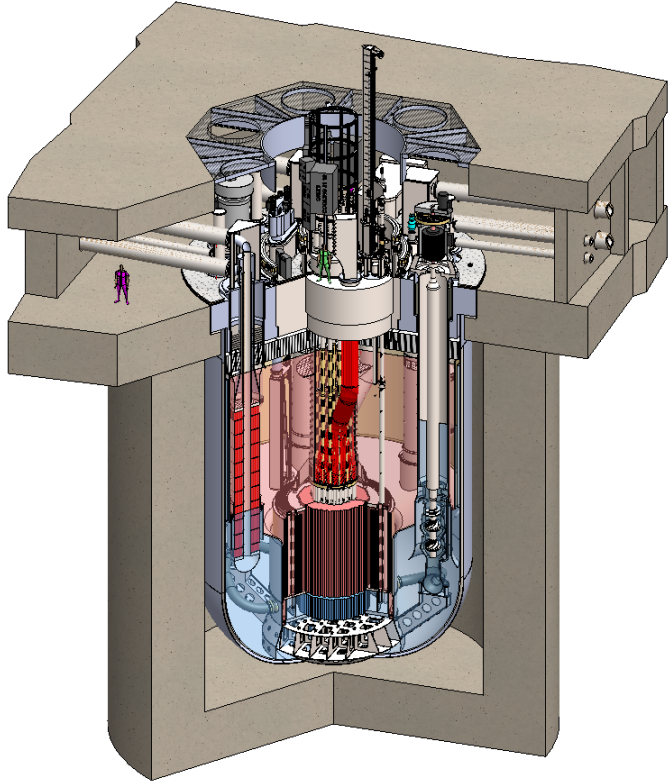
# **Radiological Accident Source Terms: Traveling Wave Reactor Design**

Jong E. Chang  
RAMP User Group Meeting  
October 31, 2019

# Mission and Vision

- Our mission is to invent and develop for commercialization new nuclear concepts and products, including the Traveling Wave Reactor and industrial and human health applications.
- Our vision is to be a world leader in new nuclear technologies that bring the world sustainable, affordable, and safe energy and create high benefit products.

# TWR Technologies

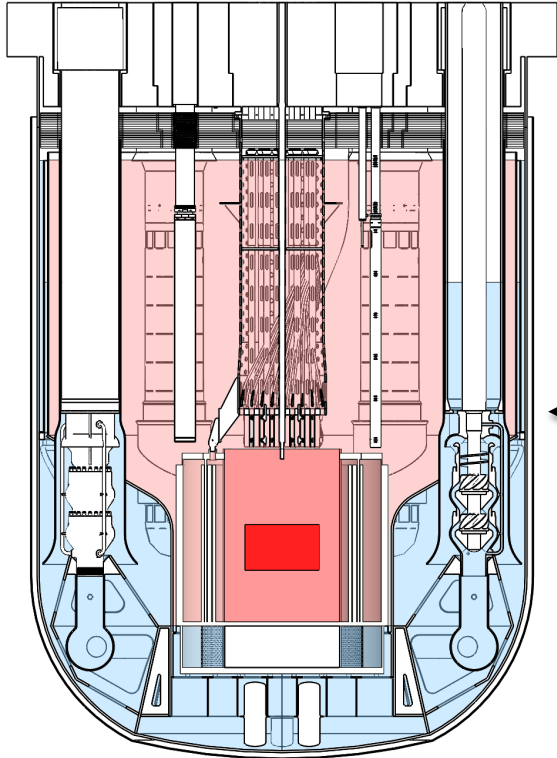


- Based on high-readiness sodium cooled fast reactor technology
- Deep-burn open fuel cycle with no reprocessing
- Strong inherent safety features and passive safety systems
- Flexible siting
- Production of high temperature heat
- Reduced waste

**Our goal is planetary-scale sustainable energy**

# Multiple Barriers – Design Basis Accidents

Section A

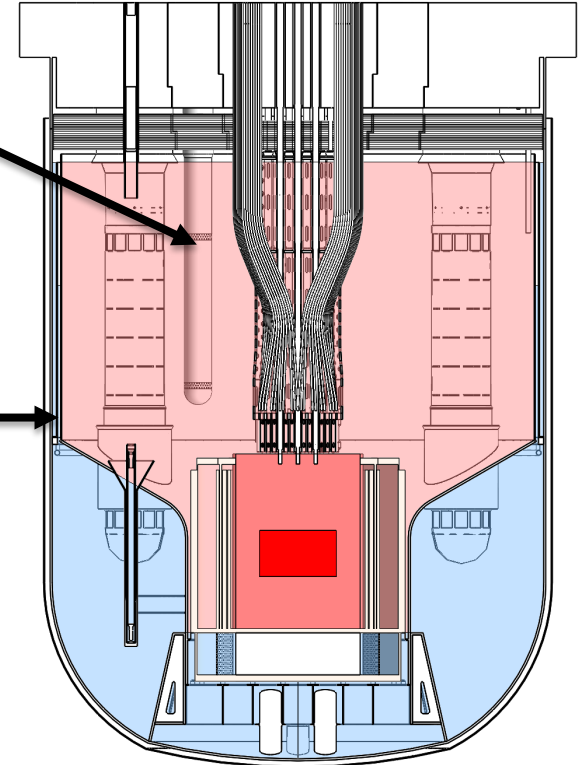


Passive Heat Removal

No Reactor Vessel Penetrations

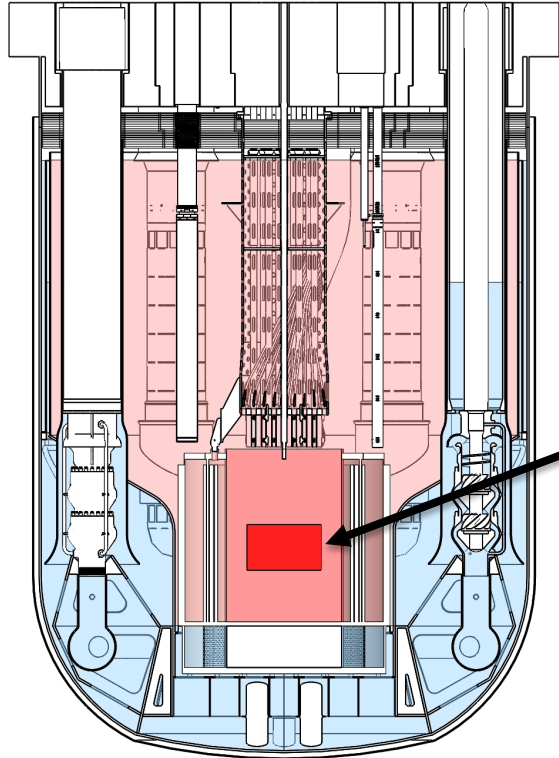
Resistance to Software  
Common Cause Failure

Section B



# Multiple Barriers – Severe Accidents

Section A



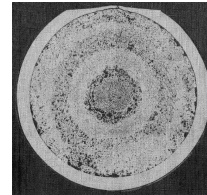
Reactor Hall  
Containment

Extra Fission Products  
Barriers

Metal Fuel Extrusion

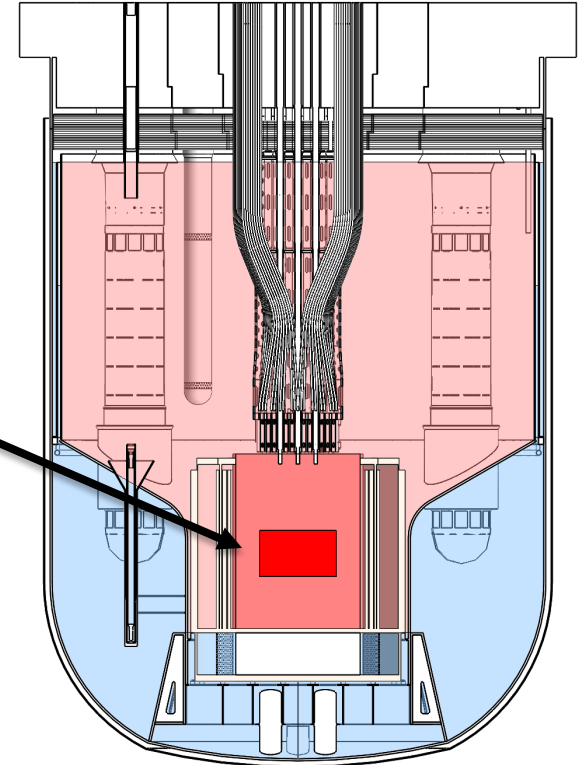


Oxide Fuel  
(9% burnup)

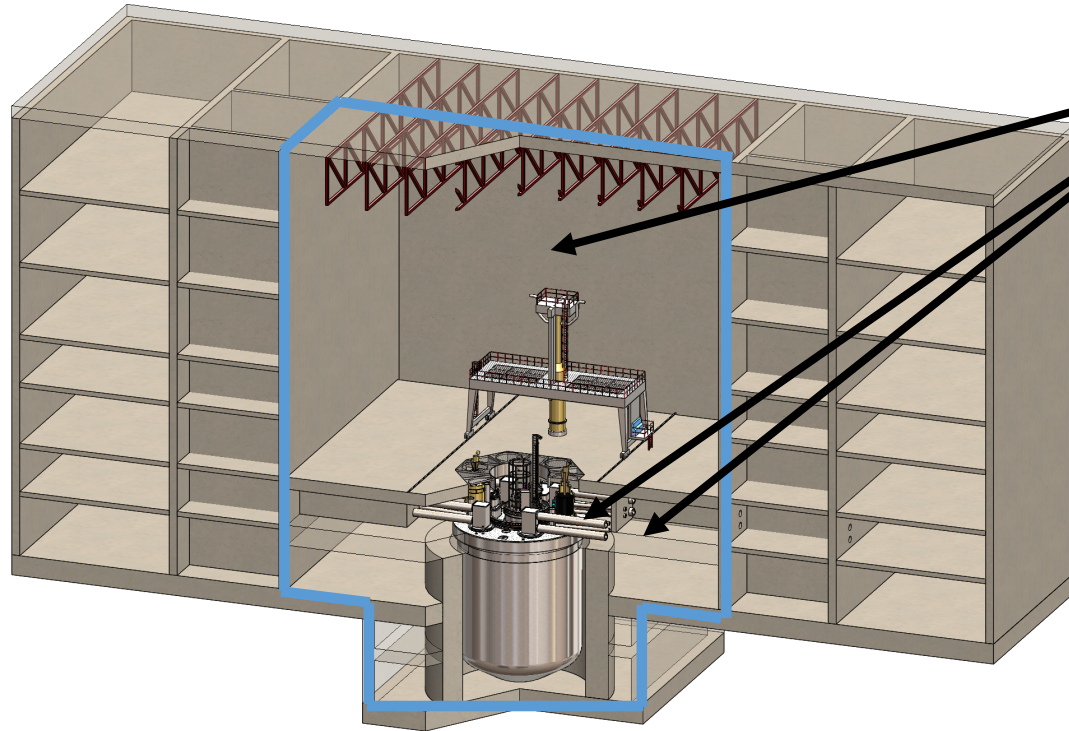


Metal Fuel  
(12% burnup)

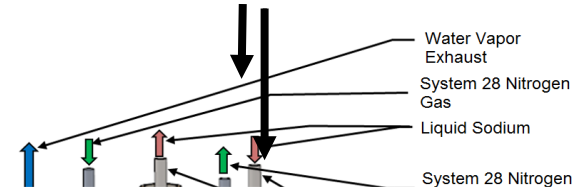
Section B



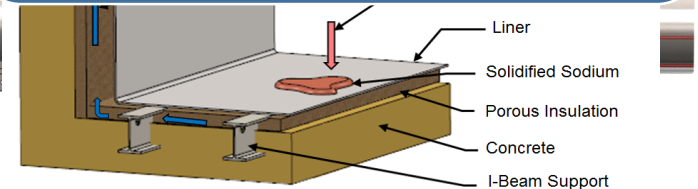
# Multiple Barriers - Containment



Large Free Volume



Together, the engineered safety features and the large free volume prevent sodium fires from challenging containment integrity



# Accident Source Terms

