## **Delivering on the Promise of Small Modular Reactors**



Julie Gorgemans | Director, AP Technology



### **Westinghouse Overview**

Established nuclear solutions provider



- Founded by George Westinghouse in 1886.
- USS Nautilus (commissioned 1954)
- World's first commercial pressurized water reactor (PWR) in 1957 in Shippingport, Pennsylvania, U.S.
- 1st and only U.S.–based company to bring GEN III+ nuclear power technology to commercialization
- More than 10,000 employees and over 90 facilities operating in 21 countries

More Than

138

Years of Innovation

**Energy Systems** 

eVinci Microreactor Nuclear Fuel Operating Plant Services



## AP300 SMR

Only SMR based on deployed, operating & advanced reactor technology



### Proven Technology

25 AP1000 reactor-years of safe operations

Based on the fully licensed & operating AP1000 technology.



### **Advanced Safety**

More than

30 years licensing advanced passive technologies with global regulators

We pioneered passive safety systems. AP300 utilizes identical passive safety systems used in the AP1000 reactor to maintain safe shutdown condition.



### **Readily Deployable**

**Approximately** 

acres needed for safety related buildings

Ultra-compact, simplified design reduces construction timeframes. Maximizes use of established supply chain.





## Proven Technology

Leveraging AP1000 technology with demonstrated industry leading reliability



330MWe (990MWth) 1-loop PWR with demonstrated reliability



Westinghouse AP1000 reactor passive safety technology



Reduces overall components creating a simpler plant compared to other SMRs





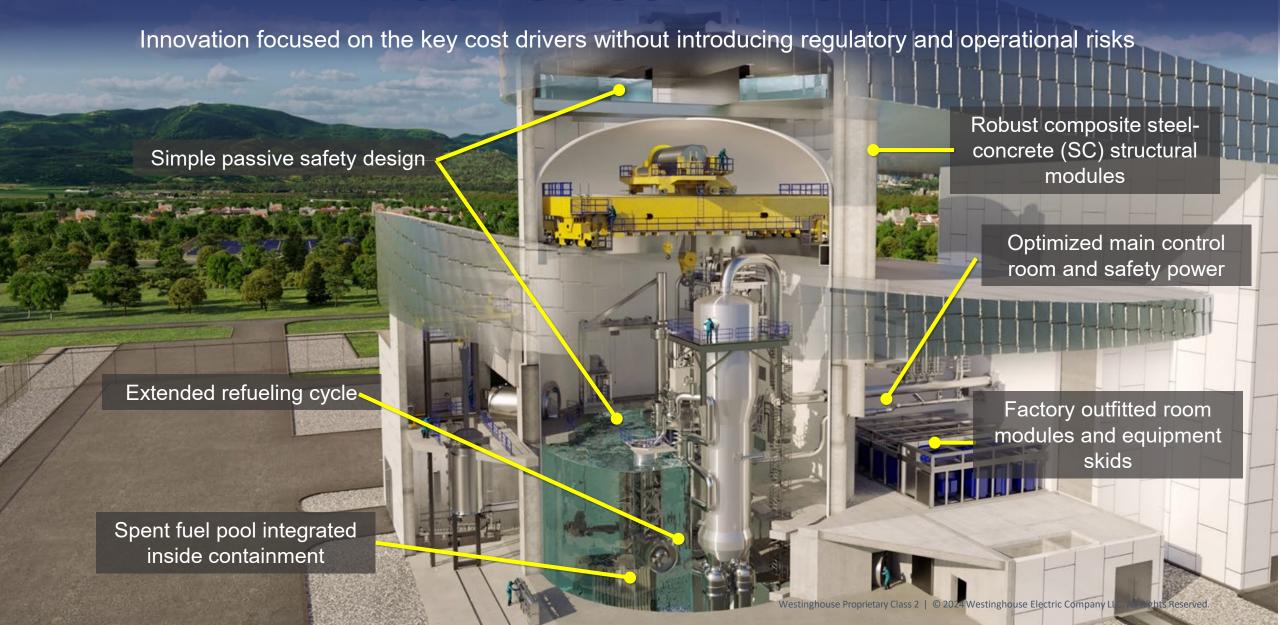
Identical Technology as AP1000 including:

- Design & licensing methodologies
- Major equipment & components
- Passive safety systems
- Proven Fuel
- I&C systems
- Proven Supply Chain
- Constructability lessons learned
- **Steel-Composite structural modules**
- O&M procedures & practices
- Fast load follow capabilities

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## **Real Cost Drivers**





## Passive Safety Pioneers

AP300 SMR uses the identical proven AP1000 fully passive safety systems



#### Fail Safe

Automatically achieves safe shutdown without the need for operator action



#### **Self Sufficient**

Passive approach to safety eliminates the need for backup power & cooling supply



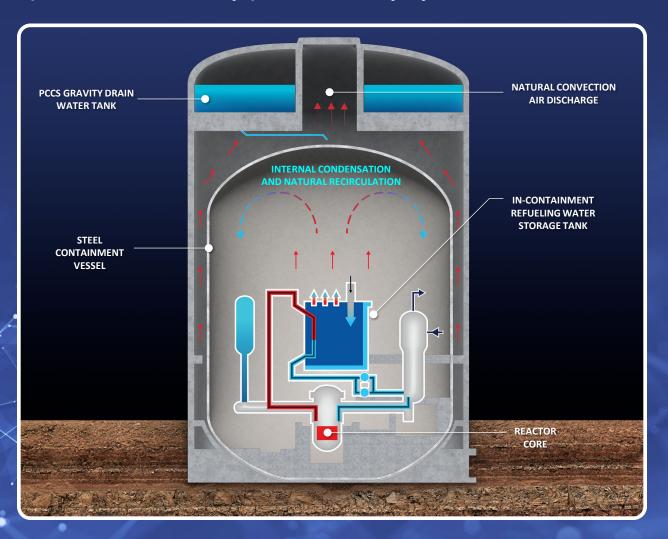
#### **Hazard Proof**

Protected by a robust containment designed to withstand extreme external hazards



#### **Defense in Depth**

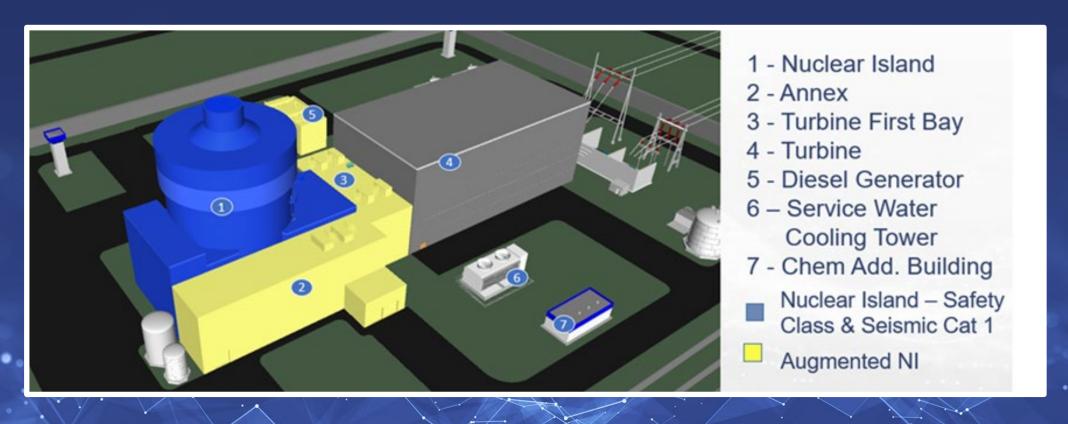
Multiple layers of defense for accident mitigation





## Ultra Compact Footprint

AP300 SMR's smaller safety related footprint reduces construction, operating & maintenance costs



SAFETY RELATED FOOTPRINT AP300 SMR (330 MWe) 5m<sup>2</sup> / MWe



# Readily Deployable by 2030's

Proven pedigree throughout the plant lifecycle ensures deployment & operations success



#### Technology Readiness

Tens of millions of hours dedicated to AP1000 reactor development6 AP1000 reactors operating,

12 under construction



## Licensing Certainty

Based on licensed & operating AP1000 technology, the only technology to be fully licensed by the U.S NRC



### Established Supply Chain

Incumbent AP1000 suppliers can deliver major equipment
Demonstrated capability to localize supply chain



### Modular Construction

Simplified, modular, ultra compact nuclear island (costliest portion of any reactor) reduces construction costs/schedule



#### Reliable O&M

Record setting AP1000 operational & outage performance Targeting **+80-year** life cycle

