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Westinghouse Energy Systems Advanced Power Generation Solutions for the 21st Century

Nuclear Innovation Conference 2024

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Christopher Goossen



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Director, AP300 Small Modular Reactor

- Director, AP300 Small Modular Reactor for Westinghouse Electric Company since May of 2023.
- Prior roles including Director, Advanced Reactors Product Management, Director of mechanical and piping engineering, Director of Project Engineering, and Program Manager leading engineering response to emergent issues during construction of AP1000.
- Multi-year assignment in Sanmen, China directly supporting the construction of the first AP1000 units.
- Graduated from Pennsylvania State University with a degree in Mechanical engineering and Purdue University with a Masters in Engineering.



Westinghouse Advantage

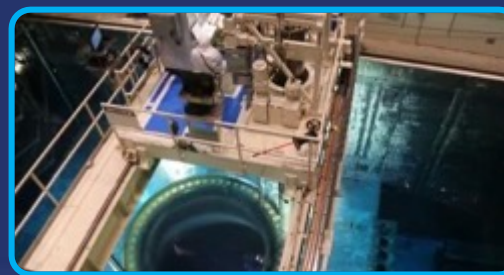
Over 70 years of experience developing & implementing new nuclear technologies that enable reliable, clean, safe and economical sources of energy for generations to come.



+9,500 employees located in 21 countries



90 global best-in-class nuclear, fuel manufacturing & office facilities



~50% of the world's nuclear power is generated using our technology



1ST successful deployment of Gen III+ reactor technology



Innovative Solutions Portfolio

Meeting customers' **flexible energy** demands by shaping today's and tomorrow's energy landscape



AP1000[®] PWR
1100+ MWe



AP300[™] SMR
330 MWe



eVinci[™] Microreactor
5 MWe



Long Duration Energy Storage
8 hours to 200 hours

The AP1000 plant is the most progressive nuclear energy reactor

An established design based on
25 years of research and development

- Superior safety; Simplified design
- Only GEN III+ design with a fully passive safety system
- Smallest footprint per MWe with significantly fewer moving components and materials of construction that drive operational efficiency
- Two-loop pressurized water reactor with a net power output of approximately 1,100 MWe
- Relies on natural forces vs. active components to keep the core and containment from overheating

AP300 SMR

Only SMR based on deployed, operating & advanced reactor technology



Proven Technology

23 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

0.4 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

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 development
5 AP1000 reactors operating, 1 nearing completion, more pending



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



Thank You



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