GEH in the global markets

Jon Ball

June 6, 2017
GE’s Nuclear business

• JV’s Headquartered in Wilmington, NC

• GE Hitachi & Hitachi GE Nuclear Energy officially formed in 2007

• Fuels, Services, and New Plants joint ventures

• Over 60 years of leadership in Boiling Water Reactors (BWRs)

• First nuclear vendor with operational Generation III reactors in service

© 2017 GE Hitachi Nuclear Energy Americas LLC.
From design through decommissioning ...

Positioned and partnering to win

- Driving a digital transformation
- Expanding services and fuels to PWRs
- Decommissioning services
- Proven generation IV design - PRISM
The Digital Industrial ...
It’s real and happening now

40+ Predix GE Power customers in last 18 months

3% Efficiency
5% Reliability
25% O&M costs

More than just BWRs ...

Intending to enter the PWR fuel segment

- Strategic alliance with goal to license and fabricate the “TVS-K” 17x17 fuel assembly for operation in U.S. PWRs
- Designed by TVEL for operation in U.S. 3-loop and 4-loop PWRs
Helping retire yesterday’s fleet …

D&D alliance with Bechtel

Customer Needs
- Pre-shutdown planning
- Licensing
- Project development
- Project management
- Dismantle and demolition
- Waste handling

OEM Expertise: nuclear services, plant modifications, outage management
- Nuclear subject matter expertise
- Specialised decommissioning technology
- Nuclear fuel expertise
- Data analysis/digital toolkit
- GE/Alstom local presence and resource base

Global program management leader
- Program and project capability tools, systems and personnel
- Deep knowledge of nuclear industry
- Proven and extensive decommissioning experience
- Performance risk management
- Safe, assured and predictable project delivery

Experienced Global Players Supporting D&D

© 2017 GE Hitachi Nuclear Energy Americas LLC.
Global race for advanced nuclear

Global segment for nuclear reactors is expected to average at least $75B annually.
U.S. must win in the advanced nuclear segment

>50 Designs

~$1.6 billion capital invested
Why advanced reactors?

Advanced vs. water cooled reactors

- Lower pressure
- Higher temperature
- Improved fuel utilization
- Smaller EPZ

= Lower costs

Source: graph estimated from multiple public reports
* Not all Advanced Reactors

Aiming to be simpler ... safer ... lower cost

© 2017 GE Hitachi Nuclear Energy Americas LLC.
What is PRISM?

Flexible and innovative way to generate carbon-free electricity

160 to 620 MWe
Simple, Modular
Configurations provide a range of offerings

Power Reactor
Innovative Small Module (PRISM)

© 2017 GE Hitachi Nuclear Energy Americas LLC.
EBR-II landmark safety test ... 1986

Idaho Falls

1986 test results

- 30+ years of safe operations
- Demonstrated inherent safety
  - Test performed by shutting off all external power while at 100% power
  - Reactor temperature stabilized ... shut itself down
  - Reactor behavior accurately predicted

Technology based on proven performance

© 2017 GE Hitachi Nuclear Energy Americas LLC.
GEH and ARC Alliance - Canada

**PRISM**
- 165 MWe and 311 MWe
- 12-24 month fuel cycle
- Power gen, heat, used nuclear fuel & Pu disposition

**EBR II**
- 20 MWe
- Variable fuel cycle
- Test/demonstration

- Sodium coolant
- Pool design
- Fast neutron
- Metal fuel
- Small
- Passive safety

**ARC-100**
- 100 MWe
- 20 year fuel cycle
- Power generation & industrial heat

© 2017 GE Hitachi Nuclear Energy Americas LLC.
PRISM Team for U.S. Deployment

- Nuclear systems design engineering
- Operations and maintenance
- BOP design engineering and construction
- Development lead and project management

Strong industry team aiming to commercialize advanced nuclear technology

© 2017 GE Hitachi Nuclear Energy Americas LLC.
What is at stake if the U.S. loses this race?

- Forfeit non-proliferation leadership
- Loss of highly-skilled, export-driven jobs
- Increased dependence on non-U.S. suppliers
- Deep de-carbonization efforts challenged
Thank you