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Multinational Regulatory Influence on New Nuclear Construction Projects

Rick Easterling

Vice President, Technical Services & Licensing

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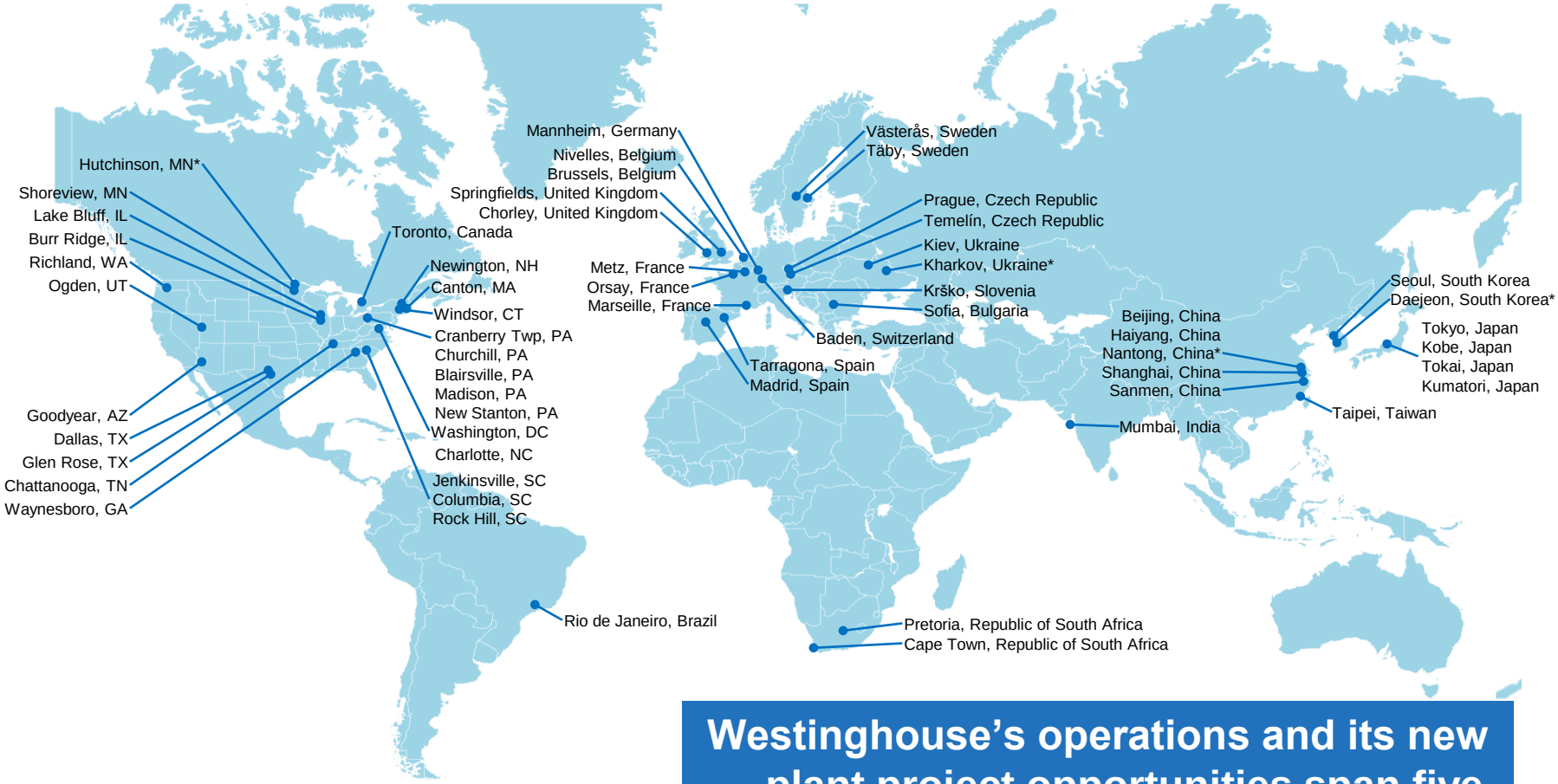
Westinghouse's Worldwide Presence



Westinghouse's operations and its new plant project opportunities span five continents

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AP1000™ Project Update: China / Sanmen

Recent Milestones:

Sanmen Unit 1: Hot Supplemental Testing completed 30 June 2017

Sanmen Unit 2: Containment Integrated Leak Rate Test completed 31 May 2017

Next Milestone:

NNSA Permission to Load Fuel in Sanmen 1

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AP1000 Project Update: China / Haiyang

Recent Milestones:

Haiyang Unit 1: Hot Supplemental Testing completed 13 July 2017

Haiyang Unit 2: Containment Integrated Leak Rate Test completed 23 July 2017

Next Milestone:

NNSA Permission to Load Fuel in Haiyang 1

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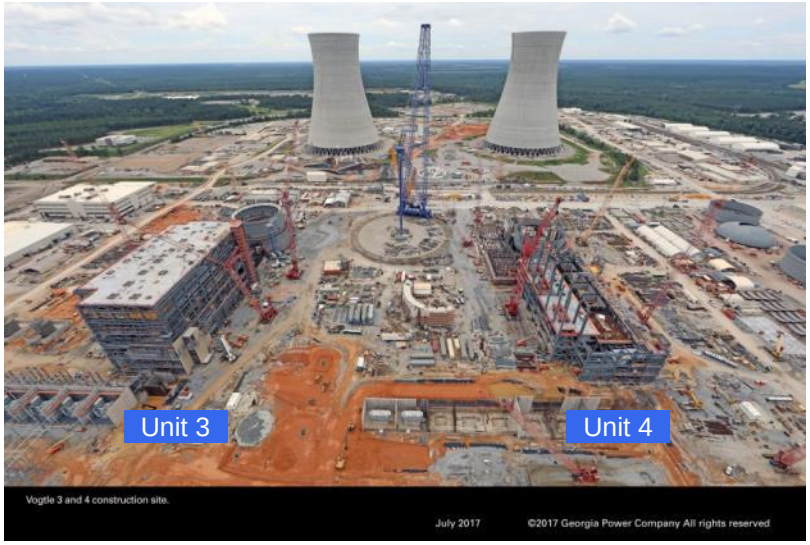
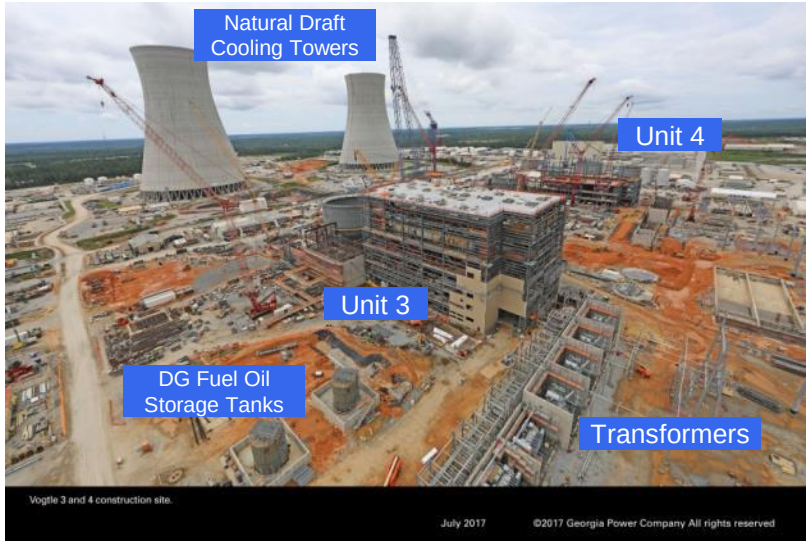
AP1000 Project Update – Vogtle 3 & 4





- **Southern Company has assumed responsibility for plant construction**
- **Construction of both units proceeding without interruption**

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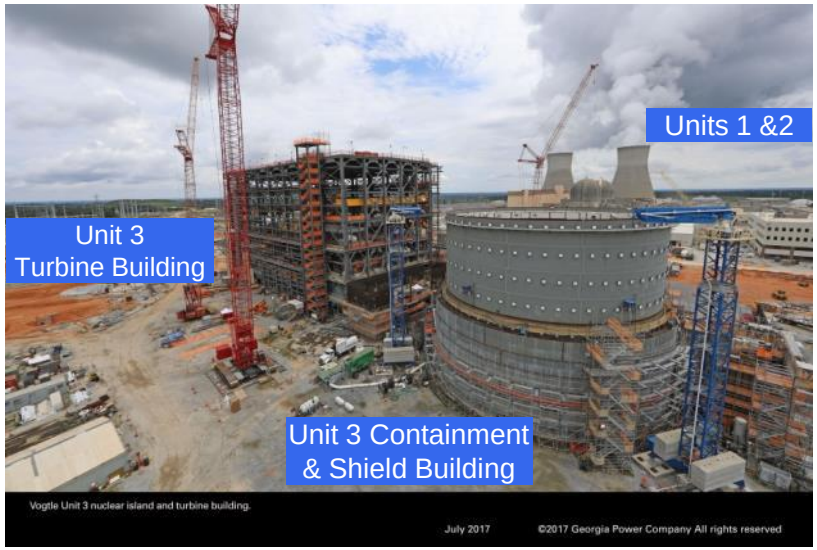
AP1000 Project Update – Vogtle 3



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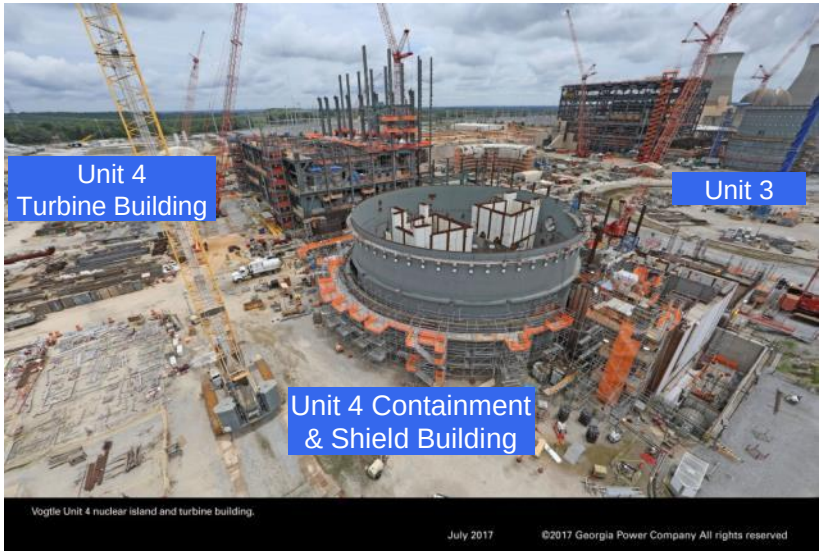
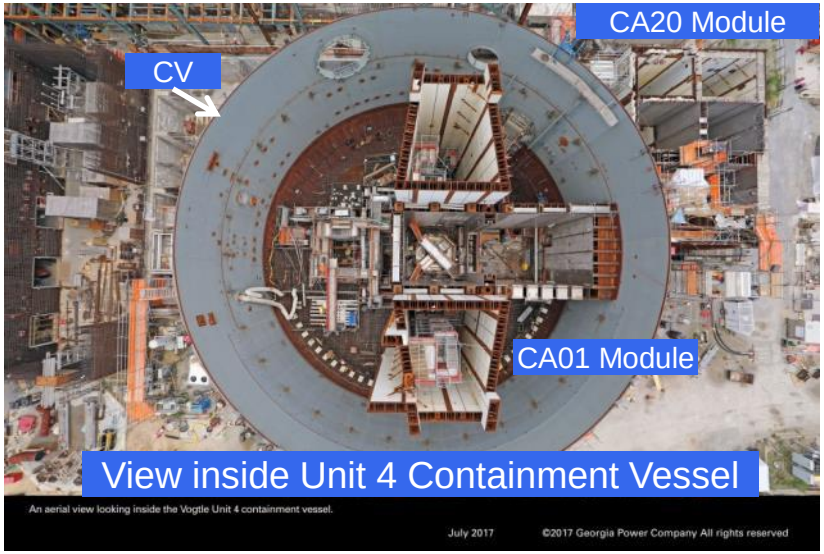
AP1000 Project Update – Vogtle 4





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Future AP1000 Projects

- United Kingdom
  - AP1000 GDA completion achieved in March 2017
  - Toshiba currently evaluating options for NuGen ownership and Moorside project
- India
  - NPCIL plan for six AP1000 units at Kovvada site
  - Preliminary contract favorably concluded technical feasibility of the AP1000 plant design as adapted for India, with key priority areas/development work identified for the early licensing phase
  - Technical and commercial offer being negotiated with NPCIL, Department of Atomic Energy, and Government of India
- Turkey
  - Continuing to discuss potential Nuclear Project applying AP1000 and CAP1400 plant designs
  - Preliminary site investigations anticipated to begin in 2017

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Observations regarding MDEP and Member Regulatory Authorities

- Wide differences in regulatory approach
  - Prescriptive vs. non-prescriptive approach
  - Vendor interaction with regulator (direct vs. non-direct)
  - Scope of review (separation of vendor vs. utility scope)
  - Codes & standards, and demonstration of equivalence vs. redesign (e.g. IEC vs. IEEE)
- Differences in timing and stages of review
  - One-step vs multi-step licensing processes
  - Regulatory reviews are at different stages due to differing project implementation schedules

Despite differences in approach among members, the MDEP AP1000 Working Group provides a valuable vehicle for sharing perspectives and bases for regulatory decision-making

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Observations regarding MDEP AP1000 Working Group

- Working Group provides means to discuss differences in regulatory philosophy and approach
  - Understanding of the basis of the country-of-origin regulator's design certification
  - Ability to achieve alignment on acceptability of resolution of common issues
  - Understanding of the basis for exemptions (e.g., Operating Basis Earthquake)
- Working Group provides means for informal discussion of topics important to plant safety and of issues associated with first-of-a-kind components
- Provides regulatory personnel with opportunity to obtain prompt response to critical questions – assuring plant safety while potentially minimizing construction or startup impacts

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Observations regarding MDEP AP1000 Working Group

- Promotes design standardization and plant safety
  - Publishing common MDEP position papers is important to achieve a standard regulatory approach (e.g., paper addressing Fukushima-related issues)
  - MDEP initiatives contribute to improve plant safety, including through information-sharing
  - MDEP initiatives facilitate design standardization and common design approach to key issues

AP1000 Working Group is expected to continue playing an important supporting role in the startup of Sanmen & Haiyang in the near term and in the future licensing of AP1000 in India and Turkey

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