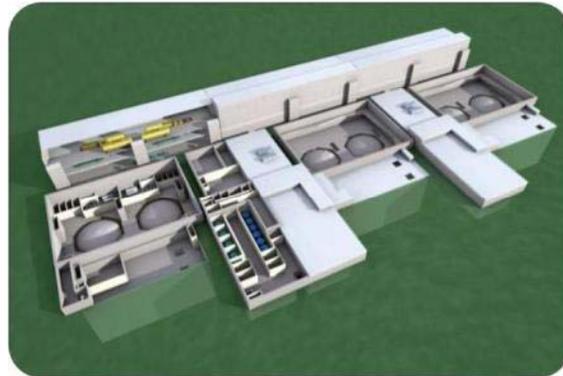




Clinch River Construction Permit Application Project



Andrea Sterdis
Tennessee Valley Authority
February 7, 2011

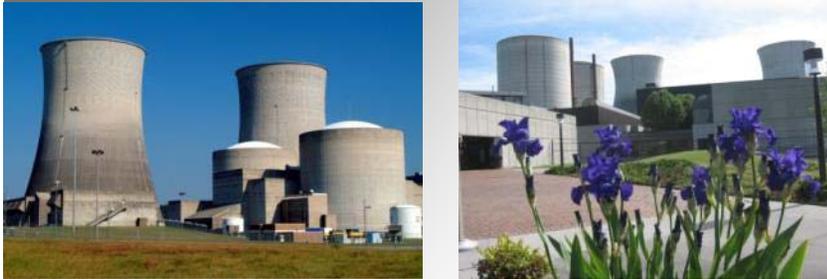


TVA – A Unique Entity

- Federal corporation
- Large service area
- Load growth
 - Average 200 MW/year
 - Distributed across service area
- Option for generation closer to areas of growth
- Vision for cleaner, low-cost electricity
- Financing challenge



Nuclear is Key to TVA Vision



New generation

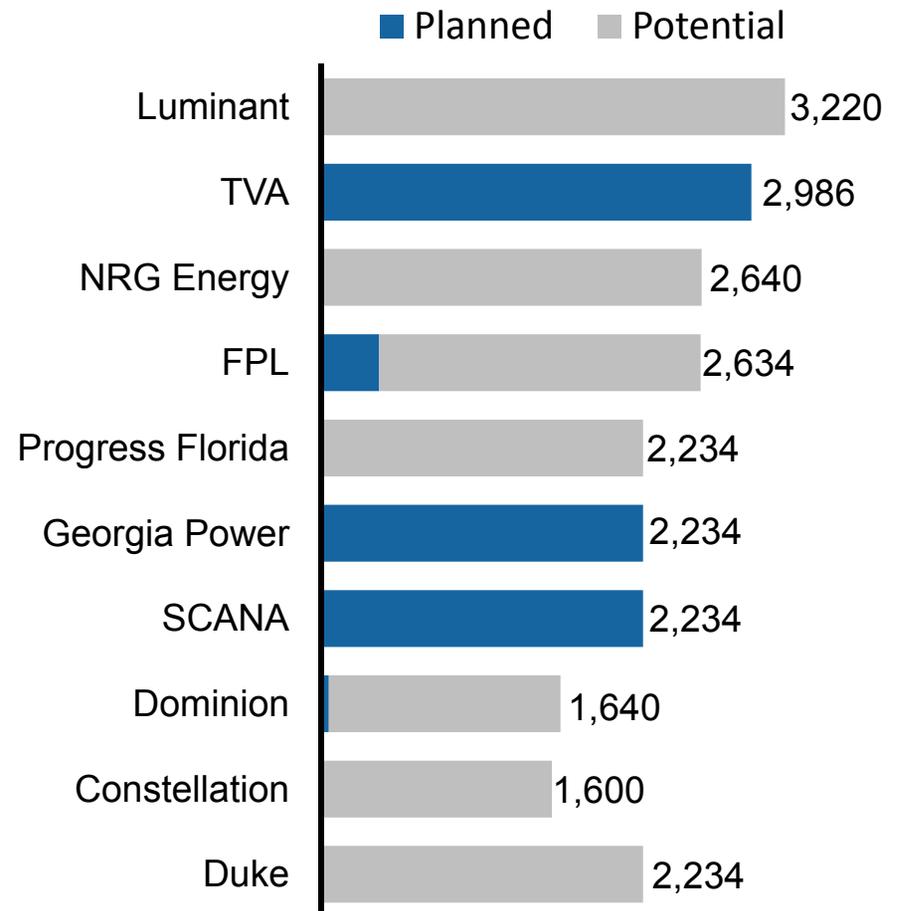
Deliver more new nuclear capacity this decade than any other utility in the country

Technology

Commercialize the first small modular reactor in the U.S.



Announced Nuclear Capacity Additions (2010-2021 MWe)





TVA New Nuclear

- Brown's Ferry 1 restart
- Completion of Watts Bar 2
- Bellefonte site in northern Alabama
 - Completion of unfinished units
 - AP1000 COL application

- Small modular reactors?





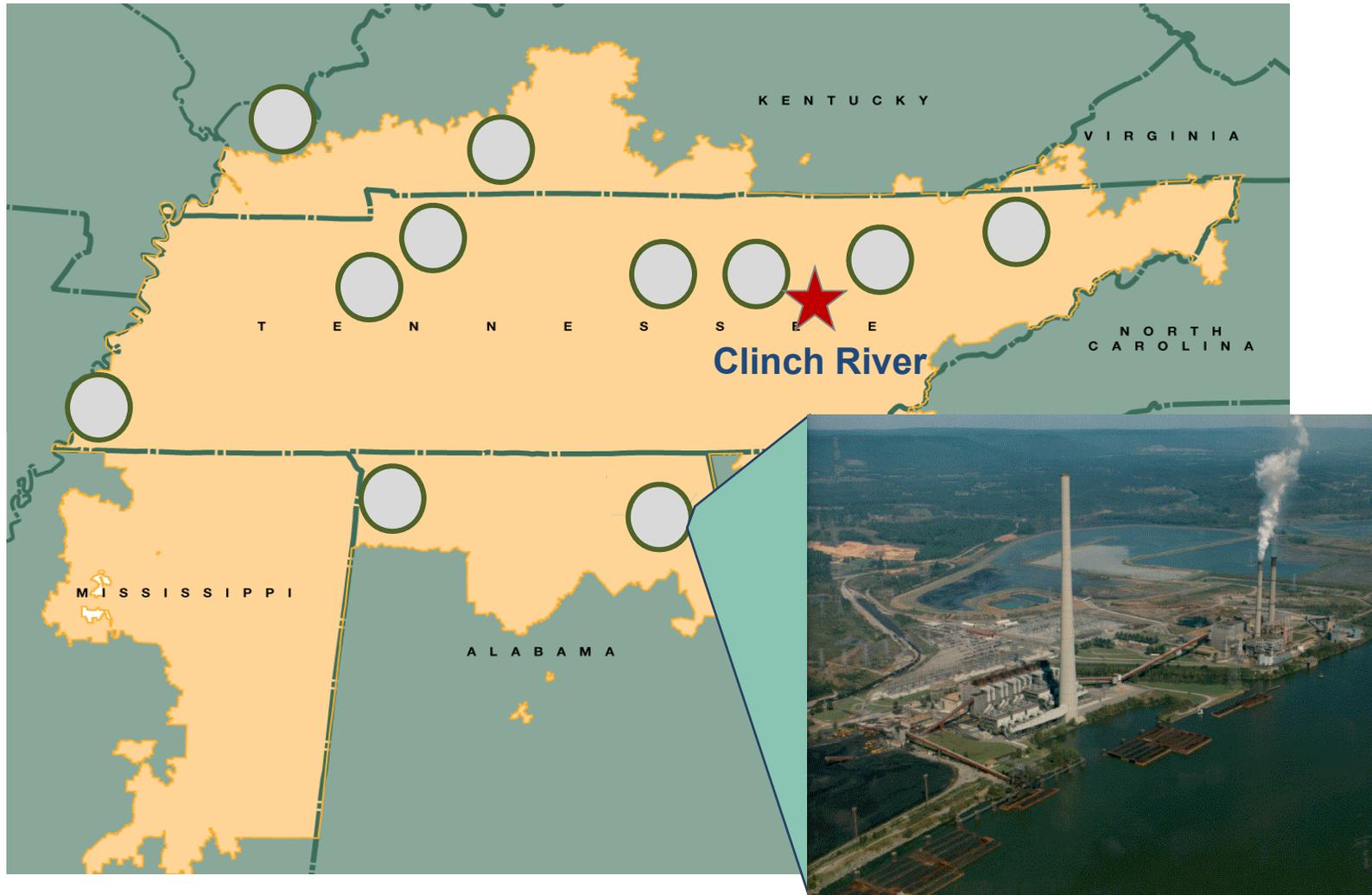
SMR Advantages

- Clean generation
- Incremental generation where needed on grid
- Improved financing flexibility
 - Capital requirements ~10% of GW-sized reactors
 - Cash flows from early units fund additional units
- Reduced project risk
 - Modularization leads to shorter, more reliable construction schedule
- Repowering aging fossil sites (reusing assets such as environmental permits, transmission and water availability)



TVA Possible Future Locations for SMRs

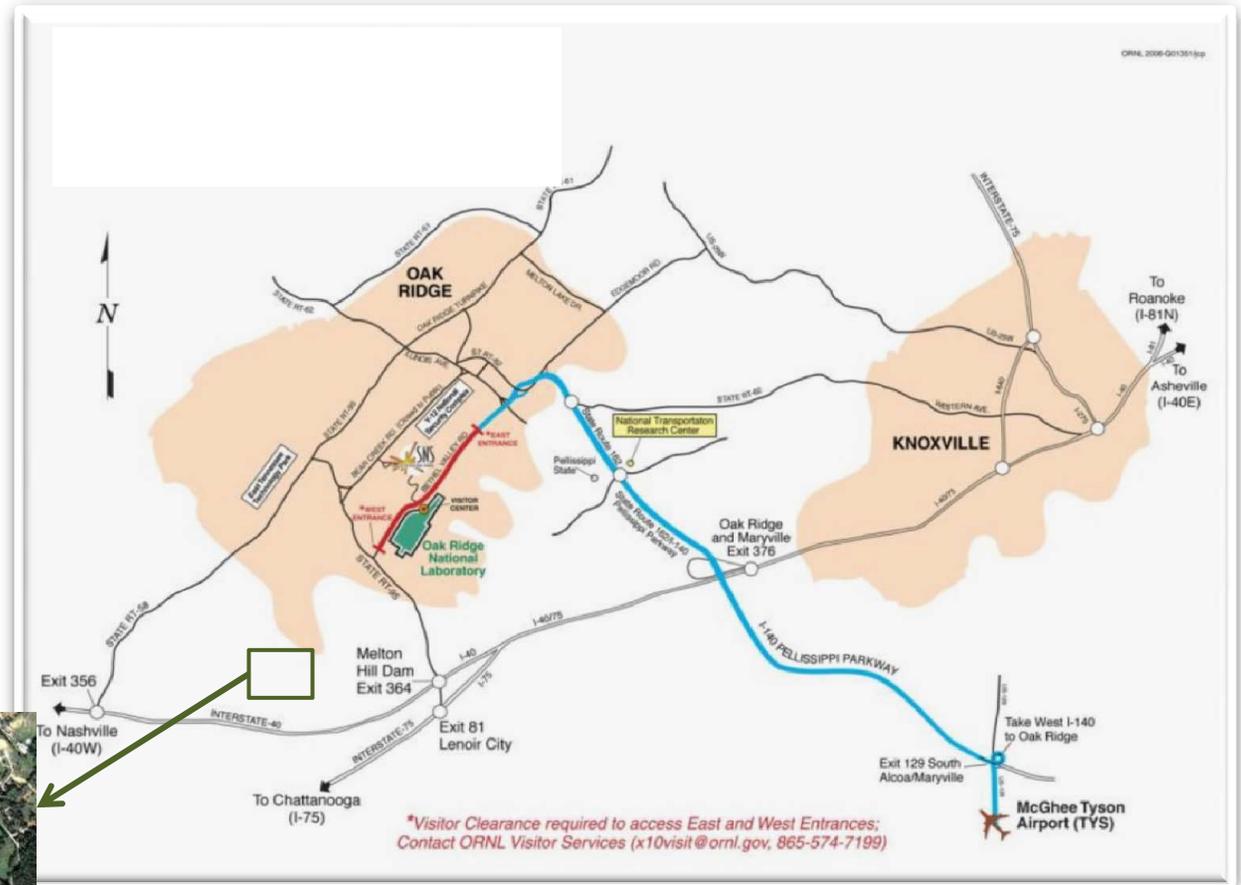
Evaluating fossil sites for potential deployment





Clinch River Location

- Site environmental studies started
- Potential “clean energy” project site for ORNL
- NRC informed of license application submission in 2012

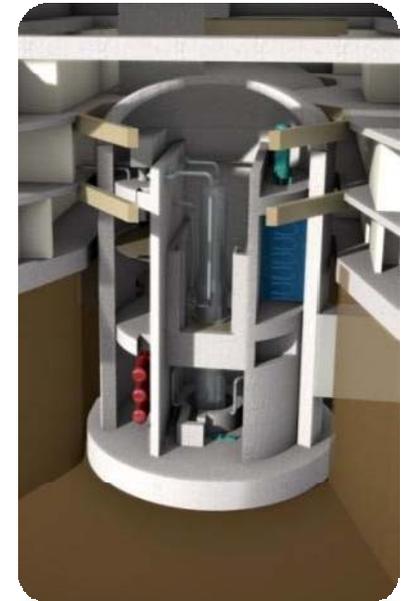




mPower™ Design



- Integral 125 MWe reactor
- Scalable modular plant
- Proven advanced LWR technology
- Simple, fully “passive safety” design
- “Industry standard” PWR fuel
- 60-year spent fuel storage
- 4-5 year fuel cycle



Fits TVA's Technology Innovation Mission



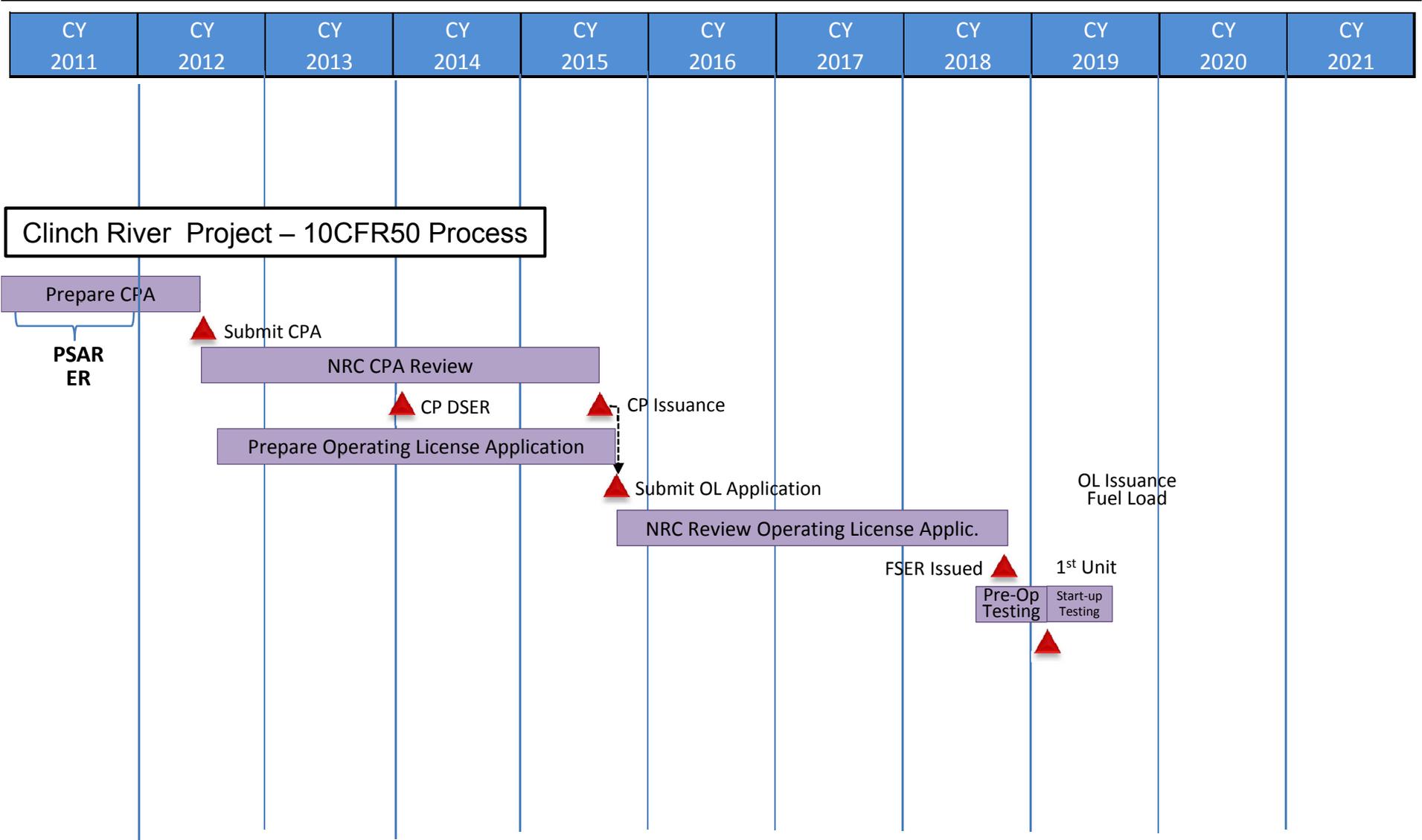
First-of-Class Licensing Options

- 10 CFR 50 or 10 CFR 52?
- Evaluation of options
 - 10 CFR 50 Experience for operating fleet
 - TVA 10 CFR experience at BFN, WBN2 and BLN
 - Near-term ALWR 10 CFR 52 experience
 - Schedule needs
 - Business planning

10 CFR 50 Meets TVA Needs for First-of-Class Deployment



Clinch River Construction Permit Project





Construction Permit Activities

- Site characterization
 - Ecological surveys
 - Cultural surveys
 - Initiating meteorological data collection

- Initial licensing steps
 - Key assumptions letter
 - Regulatory framework development/NRC review
 - Construction permit application preparation and submittal

Planned 3rd Quarter 2012 Submittal for CP Application



Value in Developing SMR Option

- Increased siting options
- Managing investment risk
- Re-establish U.S. supply chain
- Engineering and manufacturing jobs
- Widespread opportunities including small and medium-sized utilities
- Potential for technology export to other countries

