
Reactor Oversight Process (ROP) for Inspecting Vogtle Site with AP1000 Design

January 22, 2020 Public Meeting

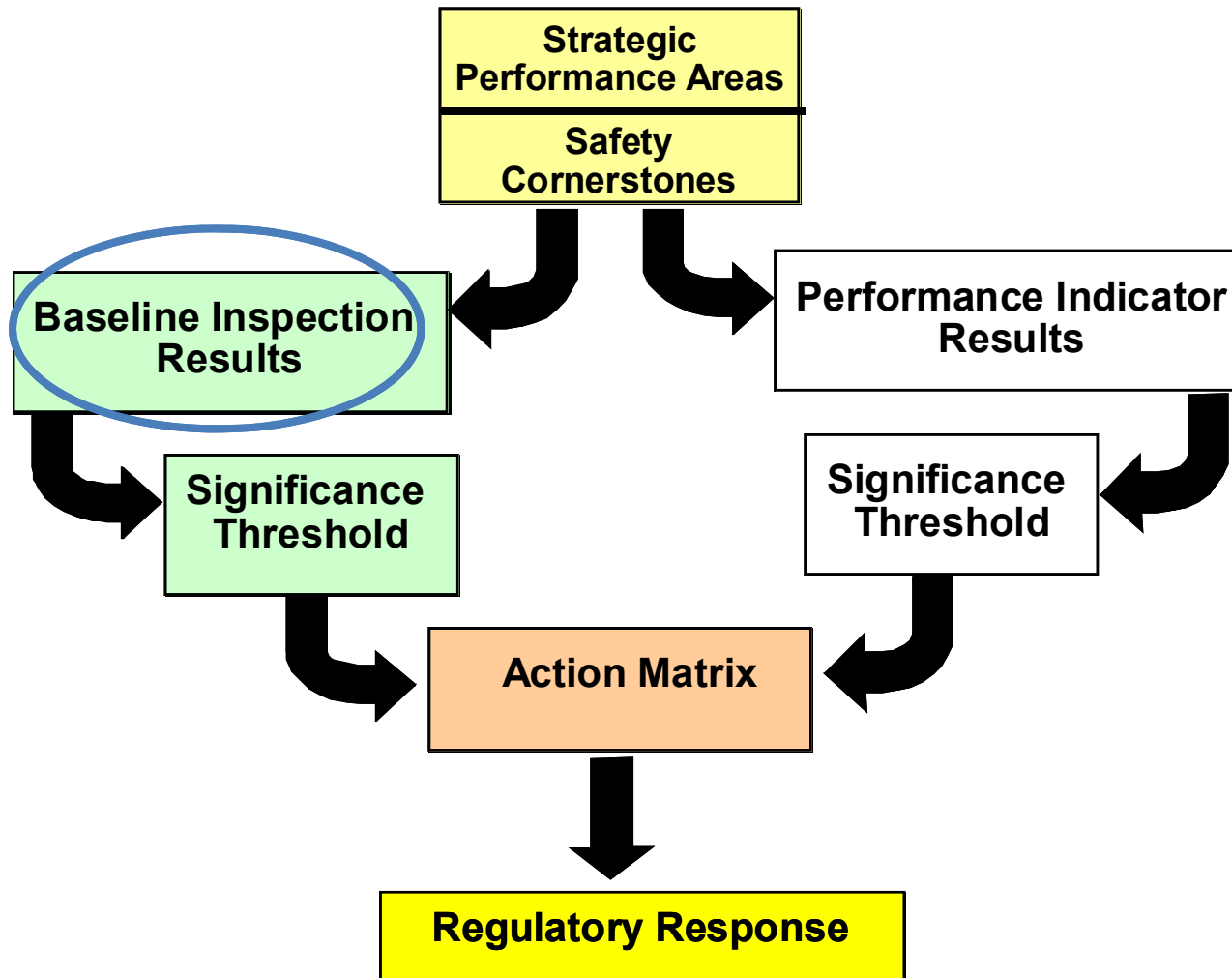
Key Messages

- The AP1000 has fewer components, a passive and simpler design, leading to enhanced safety over the reactors in the current fleet.
- The staff applied the same rationale for determining sample sizes for inspection and used a multi-step process to evaluate and adjust Inspection Procedure sample sizes commensurate with the design and colocation with Vogtle Units 1 and 2.
- The AP1000 ROP inspection process will be robust, similar to the ROP for current operating plants; including resident and regional inspectors implementing a similar suite of oversight activities.

NRC Performance Goals

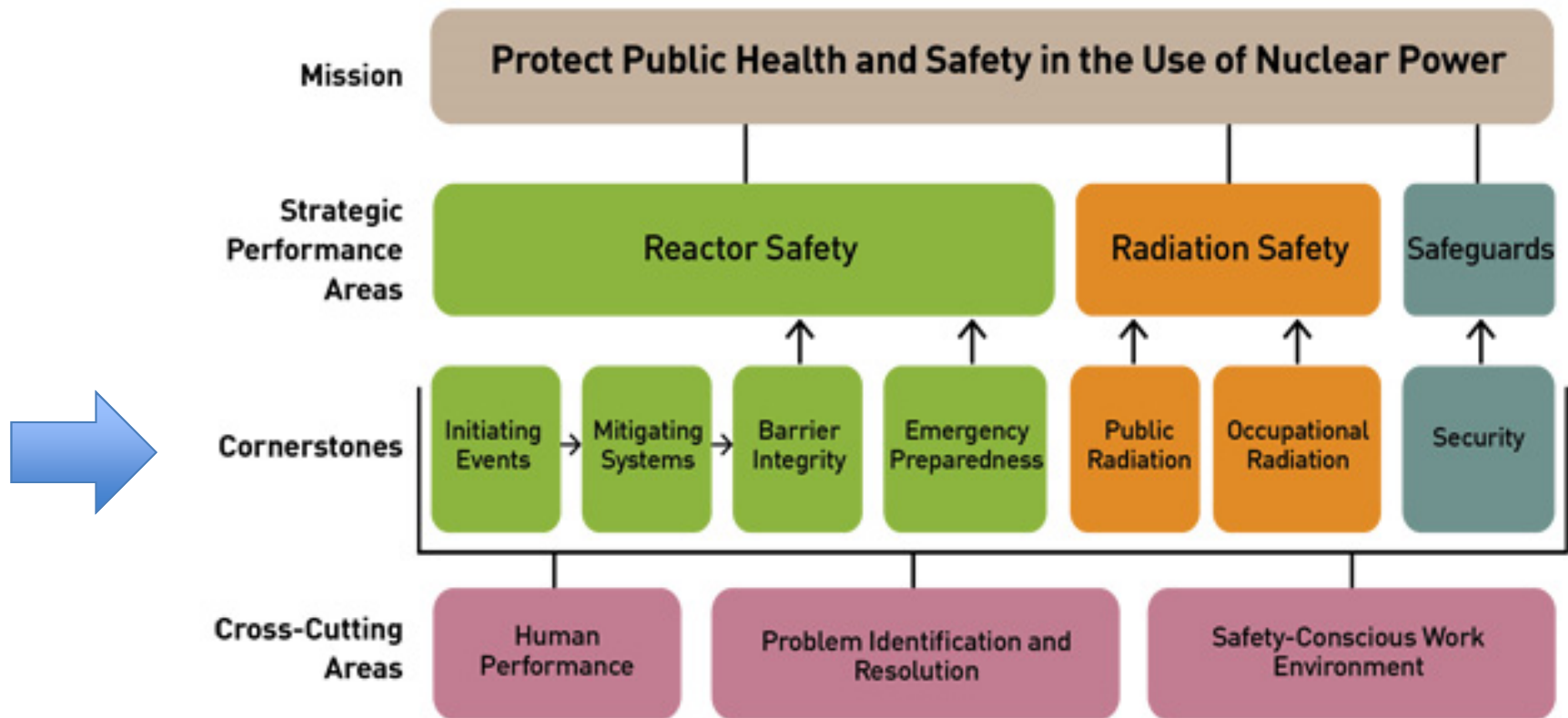
- Safety: Ensure adequate protection of public health and safety and the environment.
- Security: Ensure adequate protection in the secure use and management of radioactive materials.

Reactor Oversight Process



The Cornerstones have supporting inspections.

Reactor Oversight Framework



The AP1000 passive design provides overall safety enhancements.

- Passive versus Active Components
 - AC power is not required for safe shutdown
 - No need for human interaction for the first 72 hours
 - Operator action is not required for safe shutdown
 - Elimination of safety-related motor operated valves
 - Elimination of AC powered safety-related pumps
 - Uses natural forces such as gravity, convection and condensation cooling

The Westinghouse AP1000 Plant

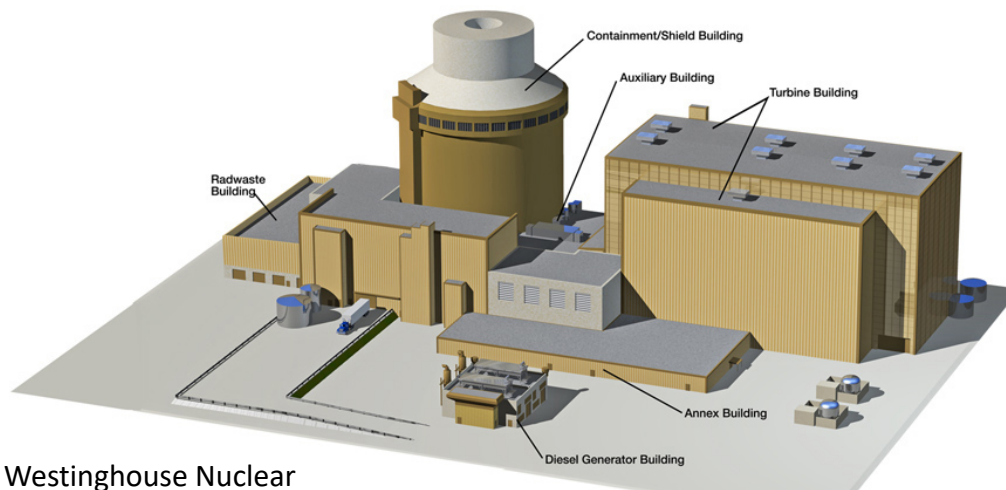


Image of AP1000™ – Westinghouse Nuclear

The above illustration is an artist rendering and may not depict actual design and layout

Simpler design results in the need for an inspection procedure reassessment.



Fewer Safety
Related
Valves



Fewer Pumps



Less Safety
Related
Piping



Less Control
Cable



Less Seismic
Building
Volume

Inspection oversight for Units 3 and 4 considers current inspection at Units 1 and 2

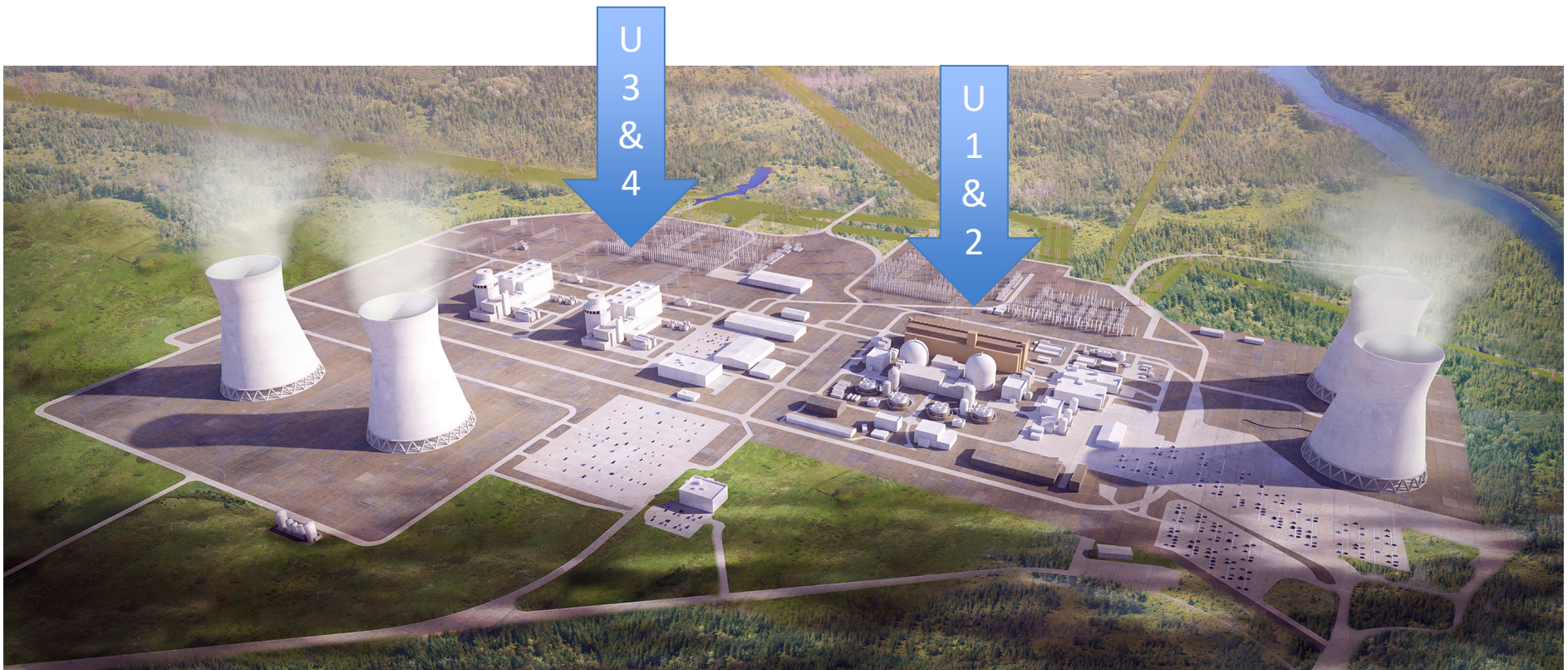
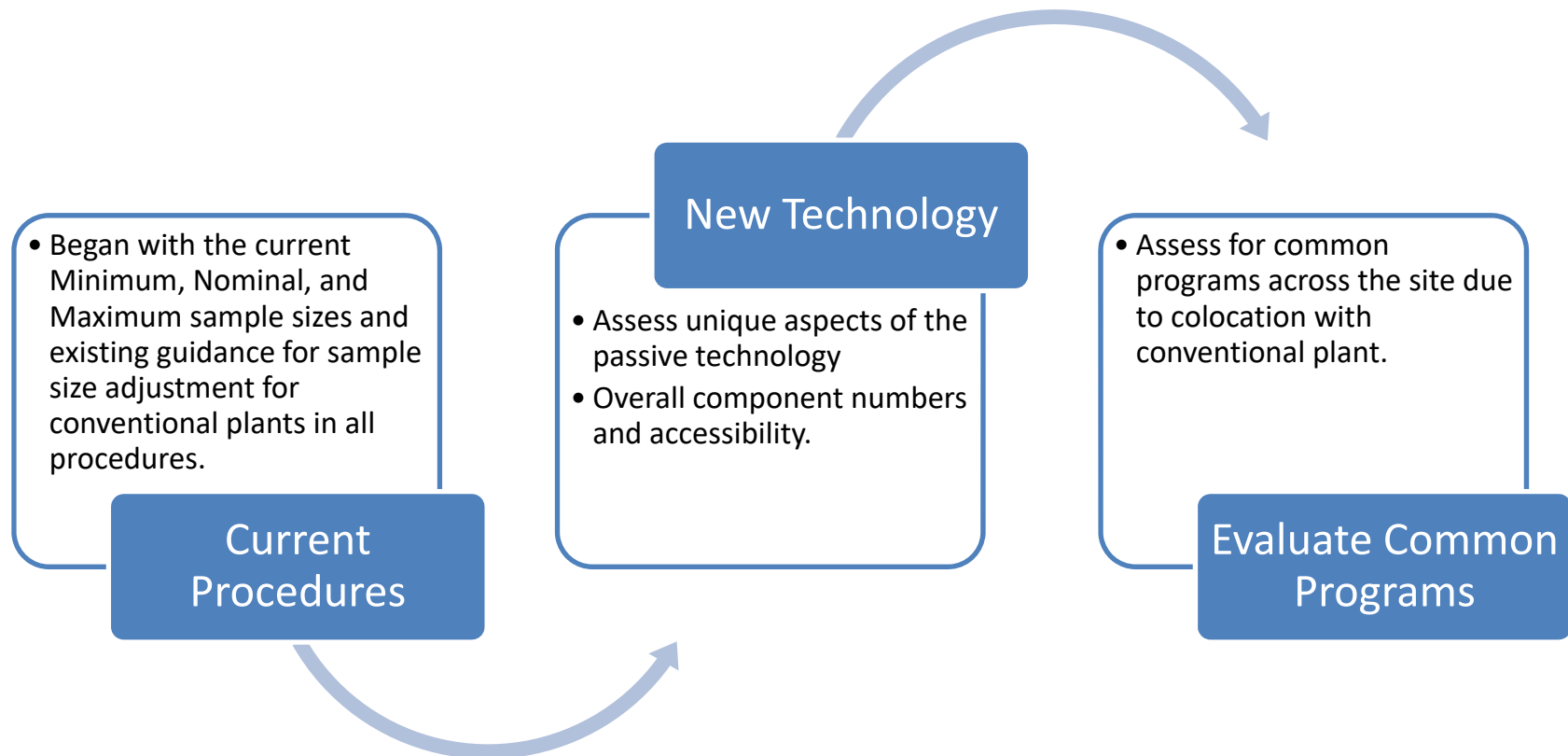


Image of Vogtle 1-4, Waynesboro Georgia – Georgia Power, A Southern Company

<http://www.multivu.com/players/English/7464951-ga-power-project-vogtle/>

NRC used a three step process to determine proposed inspection sizes.



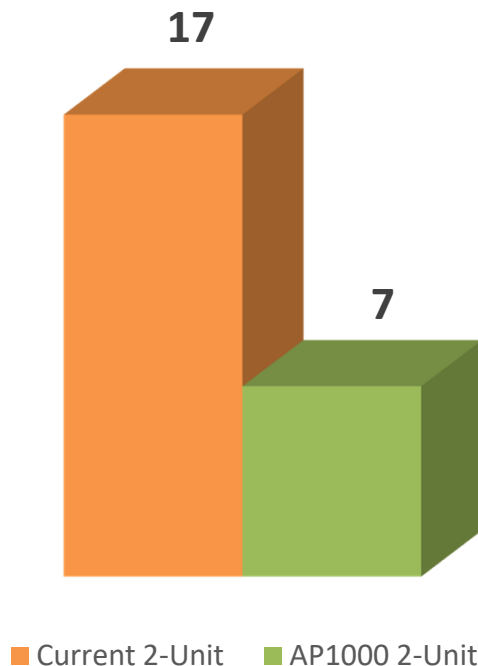
Inspection procedures are either individual or site wide, and ranges were addressed accordingly.

Procedure Category	Analysis
Individual Reactor Safety Baseline Inspection Procedures (BIPs)	Staff used technology specific component analysis and risk information inherent from the design of the two AP1000 units to develop inspection ranges in accordance with Inspection Manual Chapter 2515
Common Site-Wide Program BIPs	Staff evaluated and adjusted, if necessary, the maximum inspection range to provide an adequate number of samples across the two different designs

Example of changes to BIPs which are conducted on 2-Unit PWR and 2-Unit AP1000 independently.

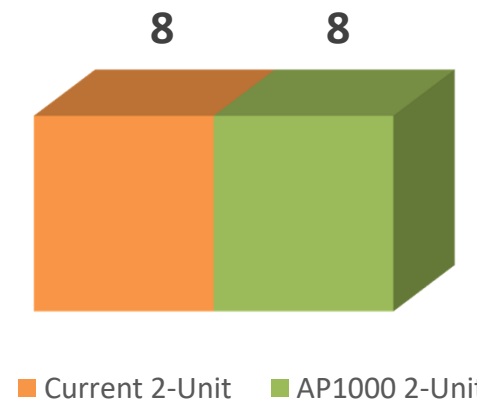
IP 71111.22 Surveillance Testing – Design Specific

BIP Nominal Samples



IP 71111.11 Licensed Operator Requalification and Performance – Design Independent

BIP Nominal Samples



Example of BIPs which are conducted as 4 unit site: Vogtle Site Common Engineering Inspections.

71111.21N.02 Design Basis Capability of Power Operated Valves

- Current BIP sample range is 8-12 for existing units
- Staff assessment of AP1000 identified BIP sample range of 3-5
- Increase BIP sample maximum to 16 samples for Vogtle site with samples from all 4 units.

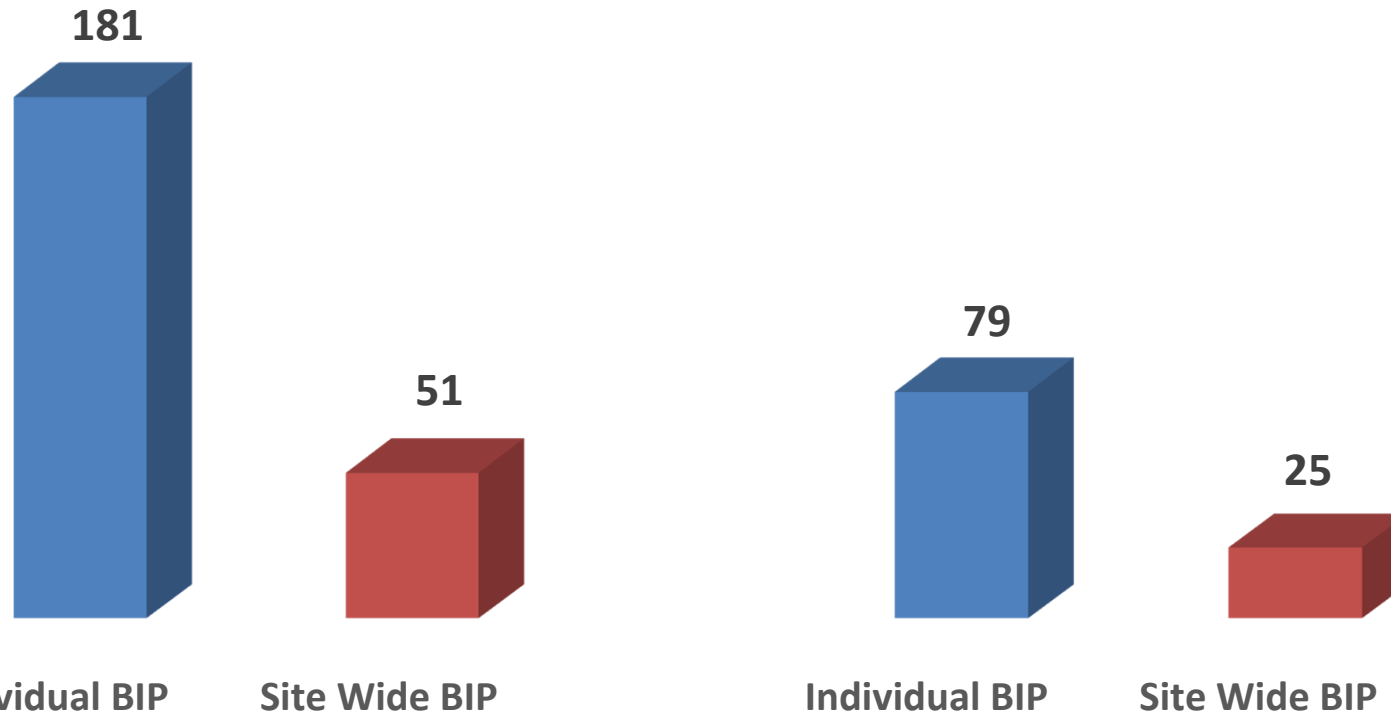
71111.21M Design Basis Assurance

- Will require separate samples from Units 1&2 and Units 3&4 but existing maximum sample size is sufficient to account for all units.
- Vogtle inspection at maximum sample size.
- No change to baseline inspection.

The staff has identified the number of samples for U3&4 based on the number of AP1000 components, risk characteristics, and co-location on an existing site.

Nominal Inspection Samples for
Units 1&2

Additional Nominal Inspection
Samples for Units 3&4



Subject to additional NRC evaluation of Vogtle Site organizational structure for the applicable programs.

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Questions?

Reference Sources

- Reactor Oversight Process
 - <https://www.nrc.gov/reactors/operating/oversight.html>
- Public Electronic Reading Room
 - <http://www.nrc.gov/reading-rm.html>
- Public Document Room
 - 1-800-397-4209 (Toll Free)