

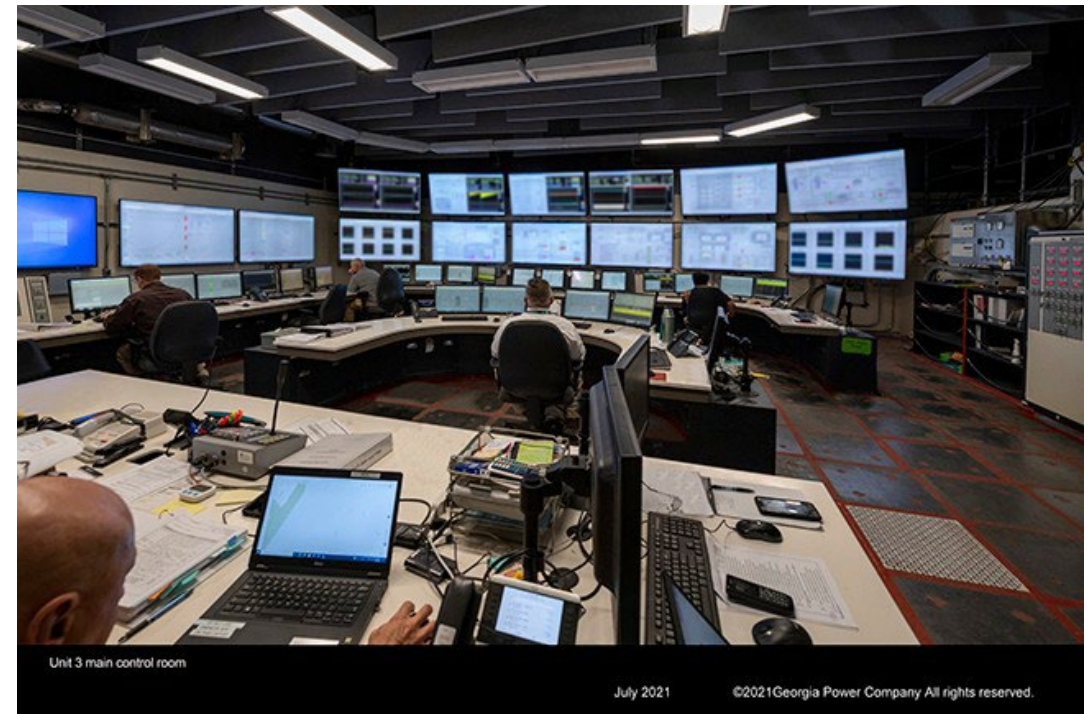
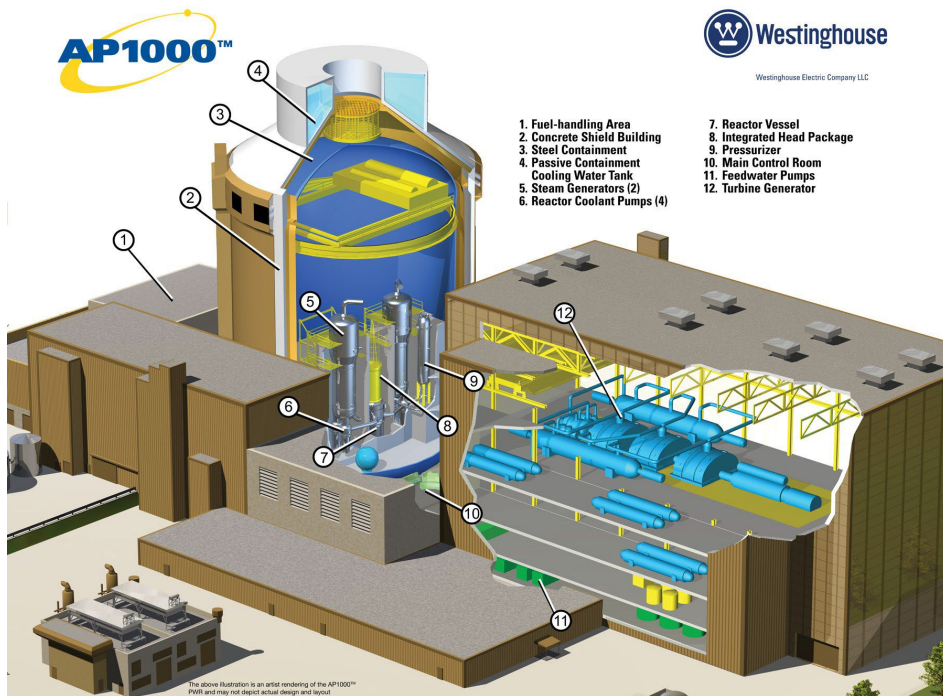
Plant Vogtle 3 & 4 Update

CMBG Conference - July 2025

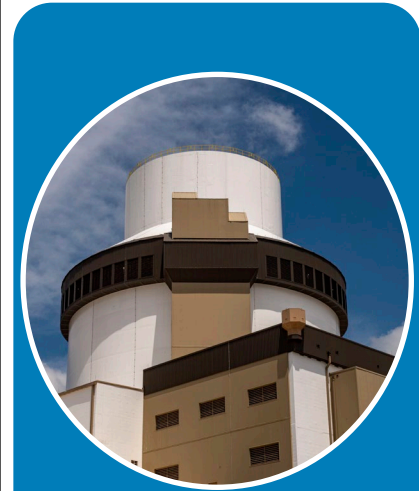


Westinghouse AP1000 Technology Recap

- The **AP1000[®] Plant** is a two-loop pressurized water reactor (PWR) that uses a simplified, innovative and effective approach to safety.
- Plant simplifications yield fewer components, cable and seismic building volume, all of which contribute to considerable savings in capital investment, and lower operation and maintenance costs.
- AC electrical power is not required for safe shutdown.
- Operator action not required for 72 hours to maintain core and containment cooling.



Plant Vogtle 3&4 Timeline



Unit 3
Design
Authority
Turnover:
October 13,
2022



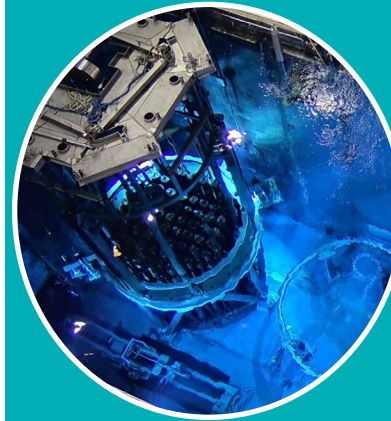
Unit 4
Design
Authority
Turnover:
July 11, 2023



Unit 3
Commercial
Operation
Declaration:
July 31, 2023



Unit 4
Commercial
Operation
Declaration:
April 29,
2024



Unit 3
1st Refueling
Outage
(3R01):
October
2024



Unit 4
1st Refueling
Outage
(4R01):
September
2025



Looking Back at the Last Year



Completed 1st Unit 3 Refueling Outage (3R01)

Number of Design Changes

Implemented: ~80

Total Days: ~44

- The outage was a huge success for the site, especially for the first refueling.
- Large number of design changes implemented to improve equipment reliability and resolve lingering construction issues.
- OE gathered from 3R01 is being utilized for a more efficient 4R01.



3R01 Highlights

Plant Improvements Implemented

- **Reactor Cavity Stairs** – Replacement of a 30' tall ladder with alternating tread stairs. Provides easier, safer access from the Containment Operating Deck to the bottom of the Reactor Cavity.
- **Addition of WLS Sinks** – Added Tubing and Sampling Sinks in Auxiliary and Radwaste buildings to make it easier and safer for Chemistry Personnel to get required samples.
- **Remote Rad-Waste Disposal Monitoring** – Added Remote Control Panels and Monitors to allow for remote operation associated with Radwaste Disposal Activities (ALARA).
- **PORV Access Platform** – Addition of a permanent personnel platform to provide easier and faster access to safety related valves for Operations
- **Main Transformer Dissolved Gas Analyzers** - Added DGAs to MSUs to provide oil sampling, to help predict/prevent possible events happening to MSUs.
- **Gland Steam Exhauster Motor Upgrade** – Replaced existing GSS motors with new motors that were not prone to spurious tripping during startup.



3R01 Highlights Cont.

- **CAS-V014 Single-Point Vulnerability Reduction** - Reduced the risk of a discovered SPV associated with a fail-closed Containment Isolation Valve. When the valve failed closed, the loss of instrument air to containment would result in the actuation of multiple safety systems. A cross-connect for an automatic backup supply of N2 to the AOV was added to create an effectively bumpless automatic transfer, without any quick operator action.
- **Alternate CMT Sampling** - Samples for boron concentration associated with the Core Markup Tanks (CMTs) appeared to be diluted based on the influence of RCS fluid at the sampling location. The DCP implemented a third sampling location associated with the CMTs to improve the operator's ability to determine more accurate average CMT boron concentration.
- **RCS Degassing Improvements** - Hydrogen removal from the Reactor Coolant System (RCS) by means of degassing prior to shutdown is extraordinarily slow which results in significant delays. The DCP resulted in increasing the pressurizer venting flowrate, the Reactor Coolant Drain Tank (RCDT) pressure range and made other changes that reduce RCS shutdown degasification time.
- **Generator AVR & MSU Protection Coordination** – Relay and turbine generator control setting changes to increase reliability during grid events.
- **Pressurizer Heater Bank Repair** – Repaired damaged pressurizer heater banks to restore design margin.



2025 Design Modifications

The Design Engineering Department has completed ~338 modifications since the start of 2025. (including documentation-only changes)

Both Units 3 and 4 had short Planned-Maintenance Outages (PMOs) in 2025. These were targeted to implement designs to reduce Single-Point Vulnerabilities (SPVs) and repair issues with the VCS Fans (Containment Recirculation Fans).

- March – Unit 4
- May – Unit 3



Vulnerability Elimination Project

The scope of this project includes all systems, components, and processes at Vogtle 3&4 that have the potential to impact plant reliability and safety.

The Vulnerability Elimination Project establishes a comprehensive approach and strategy for identifying, assessing, and eliminating vulnerabilities at Vogtle 3&4 to ensure reliable and safe plant operations. The primary goal is to prevent scrams, power downs, and other operational disruptions. The plan is structured in multiple phases:

1. **Vulnerability Elimination:** The initial phase focuses on aggressively identifying and eliminating vulnerabilities that pose immediate risks to plant operations.
2. **Mitigation Strategies:** Subsequent phases address the implementation of mitigation strategies for vulnerabilities that cannot be immediately eliminated, reducing their impact and likelihood of occurrence.
3. **Plant Reliability Risk Reduction:** Continuous efforts are made to assess and prioritize risks, ensuring that the most critical vulnerabilities are addressed first.
4. **Sustainability:** Long-term strategies are developed to maintain and enhance plant reliability, preventing the re-emergence of vulnerabilities and ensuring sustainable operations through continuous improvement and feedback mechanisms.



Vulnerability Elimination Project Cont.

241 Vulnerabilities Eliminated to Date (June 2025):

U4 PMO (95 eliminated):

- 85 Rotating Equipment Auto Trips
- 8 IDS Fuses Replaced
- 2 VCS Fan Relay Coordinated with Electrical Penetration Protection

U3 PMO (146 eliminated):

- 95 SEL Relay Updates (CCS, CVS, CDS, CWS, FWS, RWS, SWS, TCS)
- 47 PLS Trips (CWS and RWS)
- 1 Positioner Replacement - 3-CDS-V025 (DST Level Control)
- 2 Containment Recirculation Fan Replacements (3-VCS-MA-01C/D)
- 1 RCS Hydrogen Degassing

Construction Engineering Debt Closeout Project

This project was enacted to resolve the large backlog of design debt from construction and Design Authority Turnover (DATO), such as:

- Unimplemented WEC design changes that were turned-over
- Implemented WEC design changes that were turned-over, but not yet incorporated into Design Documentation
- Closeout of the large amount of SNC design change packages created during startup, including incorporation into Design Documentation
- Unrealized Design Change requests in CAP
- Plant Health Process (Long-Term Asset Management (LTAMs))

This project is now completed and resulted in major Configuration Management improvements to the site.

~4600 drawing & documents revised.

~830 design changes closed out.

Looking Forward



Upcoming Unit 4 Refueling Outage (4R01)

Number of Planned Design Changes to be Implemented: **~20**

Some changes are identical to the Unit 3 outage; some are specific to Unit 4.

The Unit 4 PMO implemented some of the 4R01 scope of changes.





4R01 Planned Modifications

- **Vogtle Single-Point Vulnerability Reduction Project** - Dual safety-related air supply solenoids with dual component interface modules (CIMs), powered by separate divisions are added for nine AOVs which had been identified as SPVs. Additionally, PRHR HX actuation logic, startup FW reactor trip valve override (RTVO) dual mode control, and PRHR automatic throttling are added to reduce the likelihood of a safeguards actuation.
 - Large plant modification that is a result of OE from the China AP1000 plants.
- **Condenser Air Removal System Upgrades** – Digital upgrades to the ability to swap condenser air removal vacuum pumps into service.
- **CWS Cooling Tower Flume – Lateral Connection Change** – The Cooling Tower was observed to have extensive lateral to flume separation. There were also many separation points of the flume-to-flume connections. These separations allow water to fall to the basin, directly impacting thermal efficiency of the plant. This change repairs those separations.
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4R01 Planned Modifications Cont.

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Extended Power Uprate (EPU) Project

- Anticipated 10-year project for a 300-350 MW increase in output across the fleet



Questions?

