ESBWR

fact sheet

Elegantly Simple, Standardized, Flexible and Economical

GE Hitachi Nuclear Energy's (GEH) next evolution of advanced Boiling Water Reactor (BWR) technology is the ESBWR. This simplified design provides improved safety; excellent economics; better plant security; a broad seismic design envelope; and operational flexibility that increases plant availability.



The ESBWR (Economic Simplified Boiling Water Reactor) builds on a long line of proven GEH BWR reactors. ESBWR employs passive safety design features. It is a simplified reactor design, allowing faster construction and lower costs.

A GEH-designed Gen III+ reactor, ESBWR is currently in the U.S.
Design Certification process.
The Design Control Document was docketed by the NRC in 2005, and the Referenced Combined Construction and Operating License (COL) application was submitted in 2007.

GEH is ready to support utilities looking to build an ESBWR nuclear power plant, with a wellestablished global supply chain.

Benefits and Features of the ESBWR

- Simplified design
 - Residual heat transferred to the atmosphere
 - 11 systems eliminated from previous designs
 - 25 percent of pumps, valves, and motors eliminated from previous nuclear island designs
- Passive design features, such as passive containment cooling, reduce the number of active systems, increasing safety
- Incorporation of features used in operationally proven BWRs, including isolation condensers, natural circulation and debrisresistant fuel
- Expedited construction schedule due to pre-licensed design and standardized modules
- GEH offers an experienced team that is supply chain qualified, with a referenced construction schedule (first safety-related concrete to fuel load) of 42 months

ESBWR Quick Facts

- Referenced construction schedule of 42 months
- One ESBWR, replacing the same amount of electricity generated in the U.S. through traditional sources, would reduce greenhouse gas emissions by an amount equivalent to taking 1.5 million cars off the road





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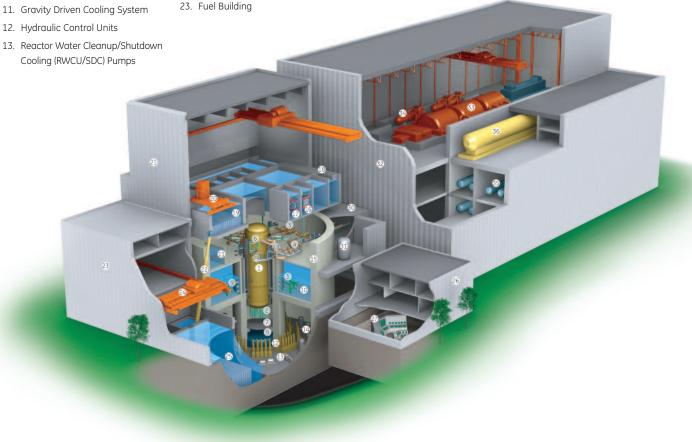
- Reactor Pressure Vessel
- Fine Motion Control Rod Drives
- Main Steam Isolation Valves
- 4. Safety/Relief Valves (SRV)
- SRV Quenchers 5.
- Depressurization Valves 6
- Lower Drywell Equipment Platform 7
- BiMAC Core Catcher 8.
- Horizontal Vents 9.
- 10. Suppression Pool

- 13. Reactor Water Cleanup/Shutdown

- 14. RWCU/SDC Heat Exchangers
- 15. Containment Vessel
- 16. Isolation Condensers
- 17. Passive Containment Cooling System
- 18. Moisture Separators
- 19. Buffer Fuel Storage Pool
- 20. Refueling Machine
- 21. Reactor Building
- 22. Inclined Fuel Transfer Machine

- 24. Fuel Transfer Machine
- 25. Spent Fuel Storage Pool
- 26. Control Building
- 27. Main Control Room
- 28. Main Steam Lines
- 29. Feedwater Lines
- 30. Steam Tunnel
- 31. Standby Liquid Control System Accumulator

- 32. Turbine Building
- 33. Turbine-Generator
- 34. Moisture Separator Reheater
- 35. Feedwater Heaters
- 36. Direct Contact Feedwater Heater and Tank





For more information, contact your GE Hitachi Nuclear Energy sales representative or visit us at www.ge-energy.com/nuclear