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SMR-300 Design Overview

May 2024



Holtec International
Krishna P. Singh Technology Campus
One Holtec Boulevard
Camden, NJ 08104, USA

[Not Export Controlled]

Agenda



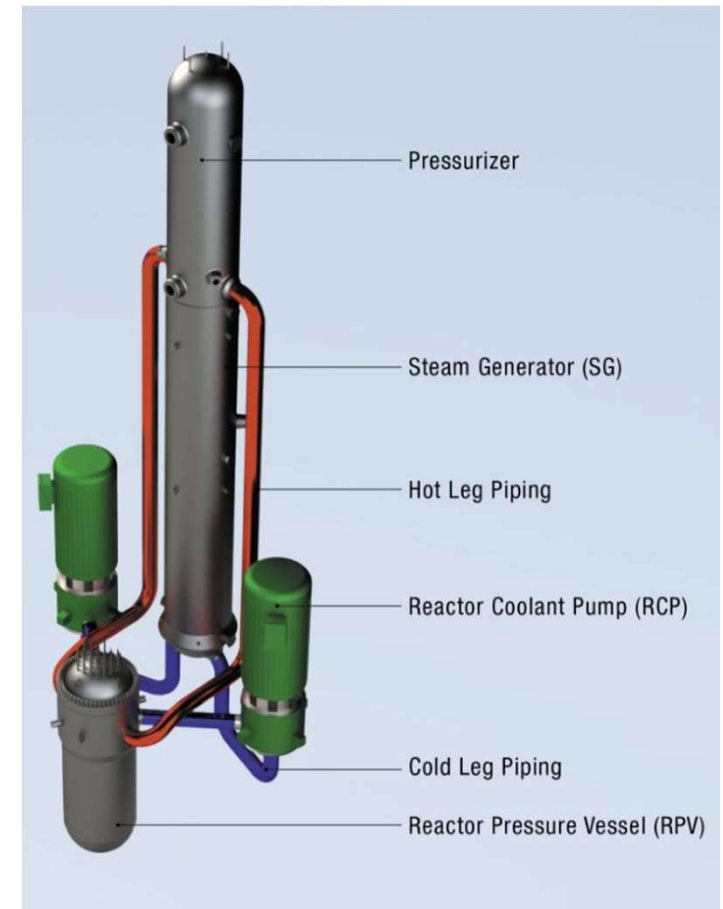
Time	Topic	Speaker
9:30-9:45	SMR-300 at Palisades	J. Hawkins
9:45-10:00	Public Comments	
10:00-10:25	Core Design	L. Zaidan, R. Rosas
10:25-10:50	RCS and ESF Systems Design	C. Lietwiler
10:50-11:00	Auxiliary Systems & Balance of Plant Design	E. Scully, R. Trotta
11:00-11:20	Staff Q&A	
11:20-11:30	Break	
11:30-11:45	Plant Layout, Structures & Modularity	A. Bommareddi
11:45-12:00	I&C and Electrical Design	P. Essner
12:00-12:20	Safety Analyses	C. Lietwiler, S. McCloskey
12:20-12:30	Licensing and Timelines	A. Brenner
12:30-1:00	Staff Q&A, Closing	

SMR-300 at Palisades

Justin Hawkins

SMR-300 Design Evolution

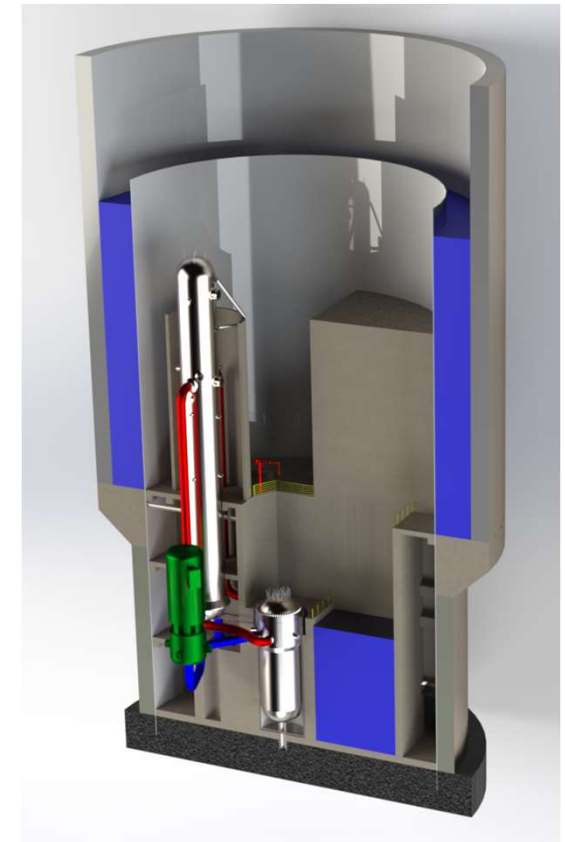
- Light water PWR
- Power output: 1050 MWt, ~300MWe
- Design lifetime: 80 years
- Forced circulation
(2 RCPs, 2 hot legs, and 2 cold legs)
- Once-through steam generator
- Traditional PWR fuel system



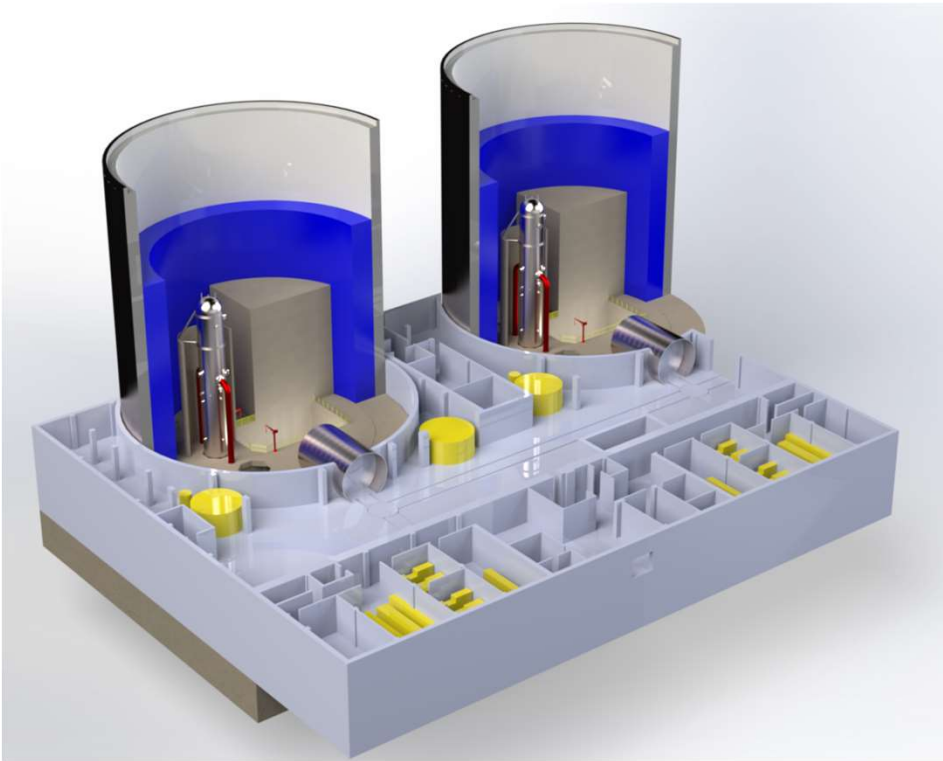
SMR-300 Design Evolution

■ Upgrades:

- ✓ Increased power output: 160 MWe → ~300MWe
- ✓ Removed FOAK forging connecting RPV and SG
- ✓ Natural circulation → Forced circulation
(Maintain natural circulation for DHR)
- ✓ Reduced reactor length; reduced steam generator volume
- ✓ Increased integral pressurizer volume for operational control



SMR-300 Design Evolution

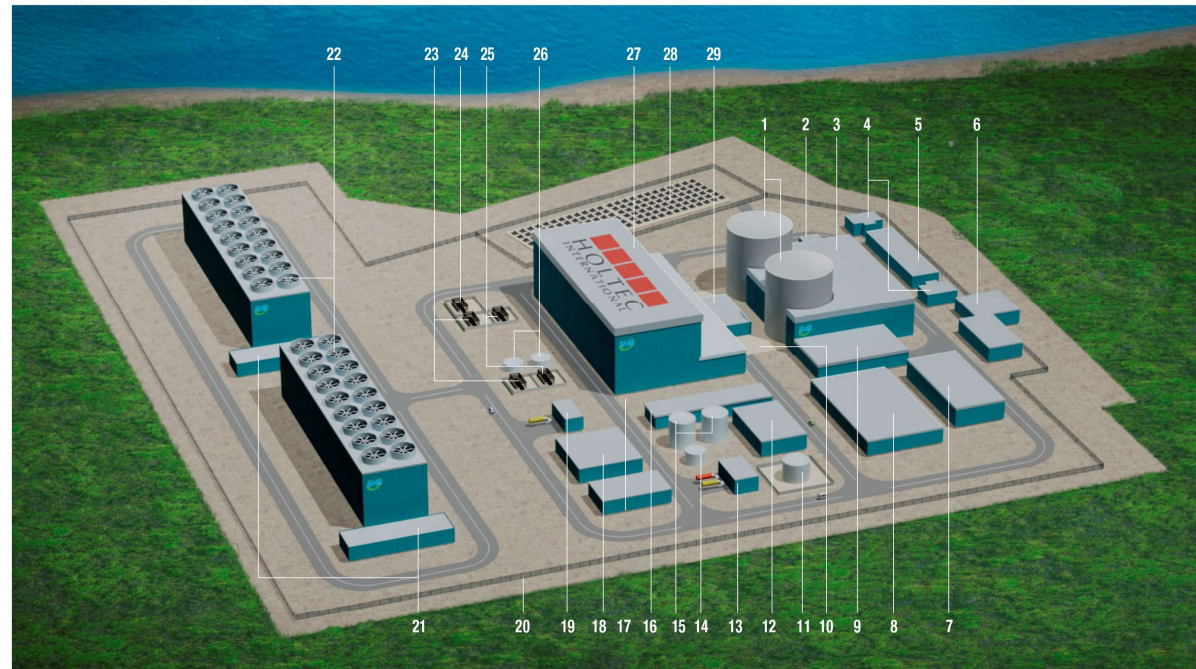
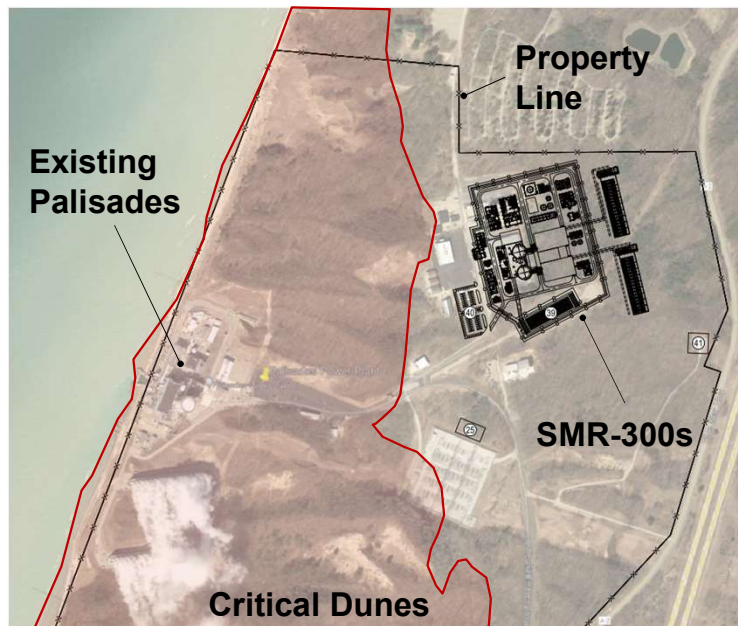


■ Benefits:

- ✓ Maintained all passive safety systems
- ✓ More proven off-the-shelf technology
- ✓ Broader application of PWR fleet operating experience
- ✓ Less FOAK testing (CRDM, CHF)

Why Palisades?

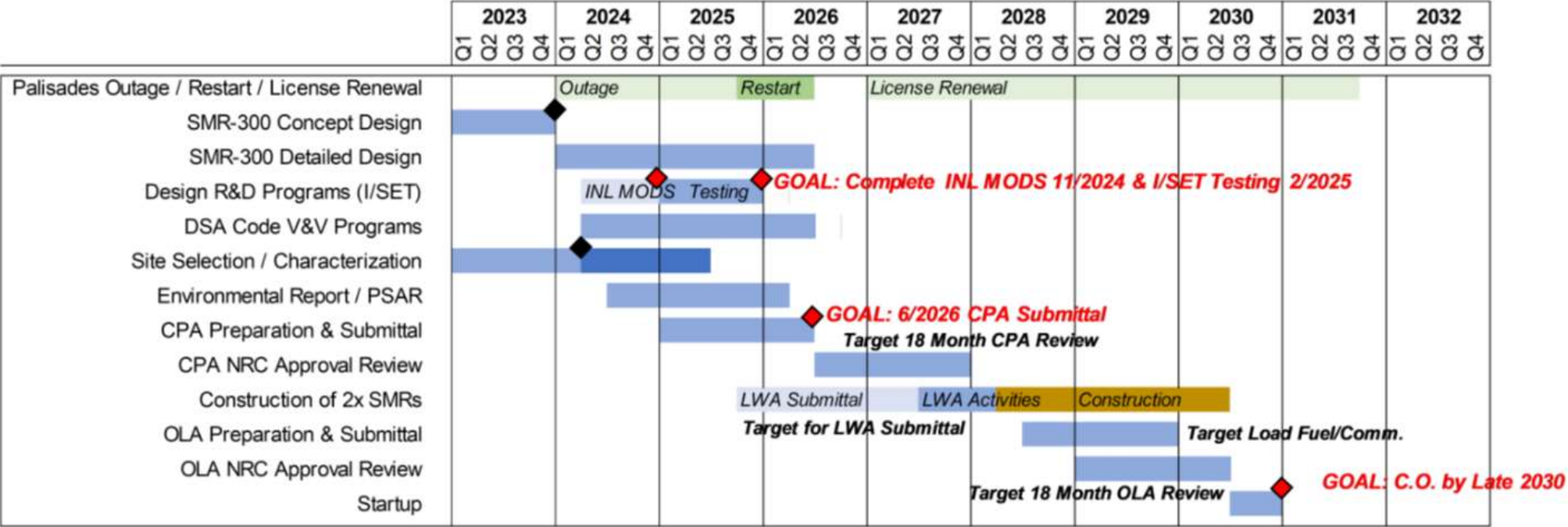
- State and Local Support
- Demand for Energy



- | | | |
|---|---------------------------------------|--|
| 1. CONTAINMENT ENCLOSURE STRUCTURE | 11. DIESEL FUEL OIL STORAGE TANK | 21. CIRCULATING WATER PUMP HOUSE |
| 2. AIR COMPRESSOR HOUSE | 12. PROTECTED AREA INTERIOR WAREHOUSE | 22. COOLING TOWER FOR CIRCULATING WATER |
| 3. REACTOR AUXILIARY BUILDING | 13. FUEL OIL PUMP SHELTER | 23. MAIN STEP-UP TRANSFORMER |
| 4. COOLING TOWER FOR SERVICE WATER | 14. POTABLE WATER STORAGE TANK | 24. STATION SERVICE TRANSFORMER |
| 5. SERVICE WATER PUMP BUILDING | 15. DEMINERALIZED WATER STORAGE TANK | 25. UNIT AUXILIARY TRANSFORMER |
| 6. SECURITY FACILITY | 16. WATER PUMP BUILDING | 26. CONDENSATE STORAGE TANK |
| 7. ANNEX BUILDING | 17. DIESEL GENERATOR BUILDING | 27. TURBINE BUILDING |
| 8. WATER/WASTE WATER TREATMENT BUILDING | 18. AUXILIARY BOILER BUILDING | 28. UMAX INDEPENDENT SPENT FUEL STORAGE INSTALLATION |
| 9. RADIOACTIVE WASTE BUILDING | 19. SERVICE GAS SHELTER | 29. ELECTRICAL BUILDING FOR NUCLEAR ISLAND |
| 10. INTERMEDIATE BUILDING | 20. SECURITY FENCE | |

SMR-300 Milestones

- ✓ Commence Testing (I/SET) at INL – **Early 2025**
- ✓ Construction Permit Application (CPA) submittal – **June 2026**
- ✓ Commence Construction – **End of 2027** [subject to potential LWA in advance of the CPA]



Public Comments