



Quick Facts about our SMR-300™ Small Modular Nuclear Reactor



**In a
Nutshell**



Holtec's SMR-300™ is envisioned to be a global nuclear reactor that can be employed at virtually any location around the world.

The Global Reactor Leading the Nuclear Renaissance

Engineered to withstand virtually any level of earthquake and from natural catastrophes such as tsunami and hurricanes, SMR-300 is a substantially shop manufactured nuclear plant. Only 20% of the total human labor is expended in site construction of the SMR-300 plant.

As the industry's only reactor supplier with the in-house design, manufacturing, construction and commissioning capability, and a continuously exercised functional supply chain, Holtec is uniquely positioned to deliver SMR-300 at a predictable price and schedule. The restart of the closed Palisades nuclear plant in a mere 16 months' time (*circa*, 4th quarter 2025) speaks to Holtec's unique capability.



Holtec plans to build two SMR-300s, likely to be America's first SMRs, at the Palisades Nuclear Plant (pictured), with expected commissioning in late 2030-31.



SMR-300 Quick Facts

- **Compact Land Area:** The controlled area for a twin unit SMR-300 plant (total net electric output over 640 MW) requires 30 acres of land (about half the area of a large shopping mall), which makes it the most efficient user of land amongst its peers.

- **Island Mode and Black Start Capable:** The plant does not need off-site power to start up and can operate in “island mode.”
- **No Exclusion Zone:** Unlike large reactors in service today, the SMR-300 plant does not require an Exclusion (i.e., unpopulated) Zone, which means the Controlled Area Boundary is also the site boundary.
- **No Emergency Preparedness Zone (EPZ) Required:** SMR-300 does not require an EPZ, which announces the plant’s inherently safe credentials to surrounding communities.
- **Extremely Robust Design to Withstand Massive Loadings:** Designed to provide the utmost resistance to severe hazards such as strong earthquakes, crashing aircraft or acts of terror/sabotage.
- **Walk Away Safe:** All safety-significant systems in SMR-300 are *gravity-operated*; none relies on a pump or motor – eliminating the reliance on man-made machinery that failed to avert the unfolding disasters at TMI-2 (1979) and Fukushima (2011).
- **Rejection of Plant’s Waste Heat Directly to Air:** Unique among its peers, SMR-300’s waste heat (which is over 63% of total reactor produced heat) can be rejected directly to air, i.e., no reliance on a large body of water, which is necessary for other nuclear plants.
- **Uses Commonly Available Nuclear Fuel:** The nuclear fuel burned in the SMR-300 reactor is the most used type in the world and is produced in several countries, giving the plant owner the option of multiple sources of supply.
- **Used Fuel Storage is a Non-issue for SMR-300:** The used fuel produced by the SMR-300 reactor shall be stored on-site in a proven subterranean (below-ground) storage system called HI-STORM UMAX where it can be stored indefinitely (for centuries) without the risk of damage or degradation to the stored fuel.
- **SMR-300’s Steam is CLEAN:** Unlike the steam from BWR reactors, whose steam is potentially contaminated, the steam from SMR-300 (which is a PWR) is uncontaminated and therefore can be used in power generation or other industrial applications such as making hydrogen fuel and process steam supply.
- **Combining Nuclear and Solar:** Holtec’s latest solar energy capture system called HI-THERM HCSP can be employed around the perimeter of the nuclear plant (if land is available) to produce synergized nuclear/solar power. This marrying of solar and nuclear power improves the cycle efficiency from the combined plant compared to SMR-300 alone (subject of another QuickFacts issue)
- **SMR-300’s Used Fuel:** All used fuel is stored underground **onsite** indefinitely (in the plant’s yard); no need to ship the fuel anywhere.

For more detailed information please click on our website:

HTB-85 -- [SMR-300: Holtec’s 300 MW \(electric\) “Walk-Away Safe” Small Modular Reactor](#)

This Quick Facts sheet is frequently updated. For the latest version, please visit our website: www.holtecinternational.com

