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Holtec SMR-300: Mission 2030 & Market Deployment

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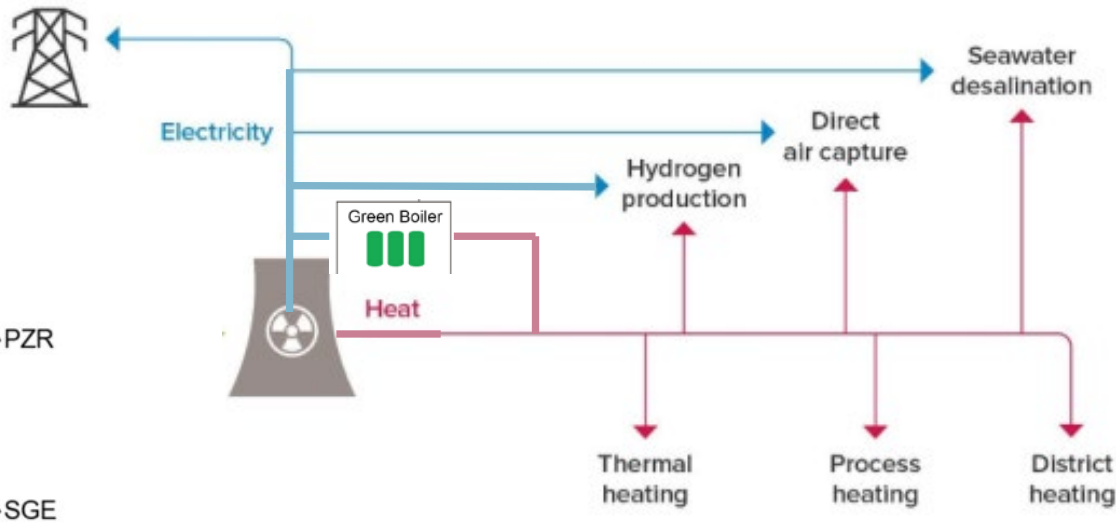
Holtec Proprietary Information

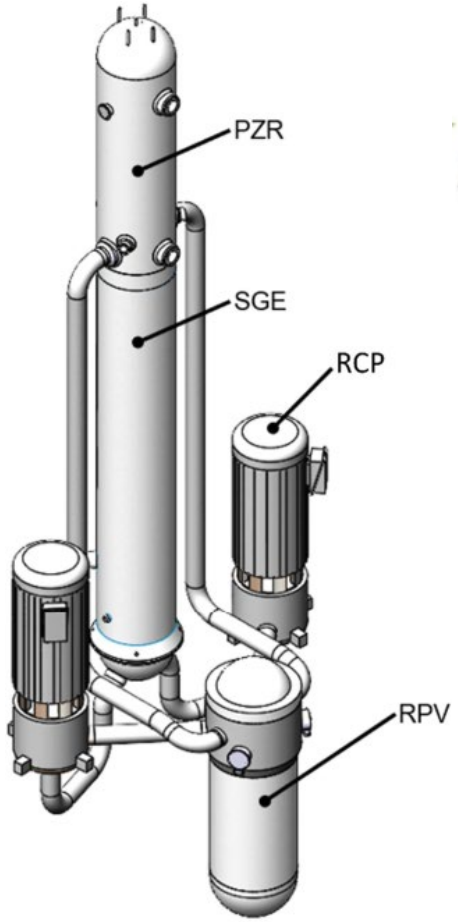
Holtec's SMR-300 for 320 MWe/1050 MWt Process Heat and Power for Grid, Data Centers, & Industrial Users

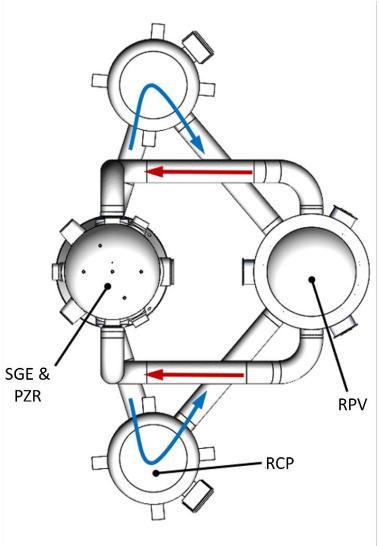
Plant Type	PWR (Proven & Licensable)
Thermal Power	1050 MWth (nominal)
Electrical Power	320 MWe (net)
Design Life	80 years
Coolant	Water
Primary Circulation, Normal	Pump Driven
Primary Circulation, Accident	Gravity
Fuel Type	PWR 17x17 (standard)
Fuel Cycle	18 months
Footprint (protected area)	20 acres (8 Ha, 38 MWe gross/acre)
First Commercial Operation	Est 2030 (Palisades, MI)

SMR-300 Dual-Unit Configuration

Flexible Technology Platform for Diverse Applications







Holtec's innovative & modernized update of proven PWR technology

- *Clean steam.*
- *Simplified.*
- *Economical.*
- *Inherent safety: Totally passive. No active components to perform any safety function.*
- *Reliable.*
- *Maintainable.*
- *Small area co-located at Industrial Facilities.*
- *Different Applications.*

SMR-300 Proven Project Delivery team

- **Holtec International – Technology Provider and Nuclear Manufacturer**
  - **Scope:** Technology Developer, Project Management, Supplier/Manufacturer of Safety Significant Components
  - **Reference**: see presentation
- **Hyundai Engineering & Construction – Proven International EPC**
  - **Scope**: BOP Detailed Design, Construction, Commissioning
  - **Reference**: Constructed 18 Plants in Korea and Barakah 1-4 in UAE
- **Mitsubishi Electric – Proven I&C Systems**
  - **Scope**: MELTAC Control System and licensing support
  - **Reference**: NRC acceptance in U.S. & proven use in Japan, China
- **Framatome – Proven Fuel Supplier and Standard Fuel Type**
  - **Scope**: Fuel design and licensing support
  - **Reference**: Standard 17x17 PWR Nuclear Fuel Assembly

HOLTEC INTERNATIONAL

SMR-300 Technology Provider/Prime Contractor

HYUNDAI ENGINEERING & CONSTRUCTION + **Local Partners**

HOLTEC INTERNATIONAL + **Local Partners**

NSSS Manufacturing

framatome + **Local Partners**

Fuel Fabrication

MITSUBISHI ELECTRIC *Changes for the Better* + **Local Partners**

I&C

SMR-300 has a Proven Solution for "the Waste"

- Holtec is presently managing spent nuclear fuel and operational waste for the last 30 years, safely!
  - ✓ Holtec has supplied fuel and waste management technologies to over 100 plants worldwide.
  - ✓ International safeguards established and proven.
- All needed spent fuel management operations were **integrally considered in SMR-300 design,** which provides **for life-of-the-plant onsite storage of SNF.**
- The spent fuel is stored in the SFP inside the containment before being stored in the interim dry storage facility at the site within the Protected Area.
- **No future costly plant modifications** are needed to transfer the spent fuel from the SFP into long-term dry storage.
- Holtec's internally developed computer program to **customize and optimized fuel loading plans.**
- Holtec can provide different technologies to the specific requirements of individual countries like Bulgaria, ensuring **compatibility with existing back-end processes.**

Angra UAS for Dry Spent Fuel Storage in Brazil

The spent fuel for two nuclear units operating each for 40 years can be stored on a concrete pad 100m x 50m (the size of an American football field)

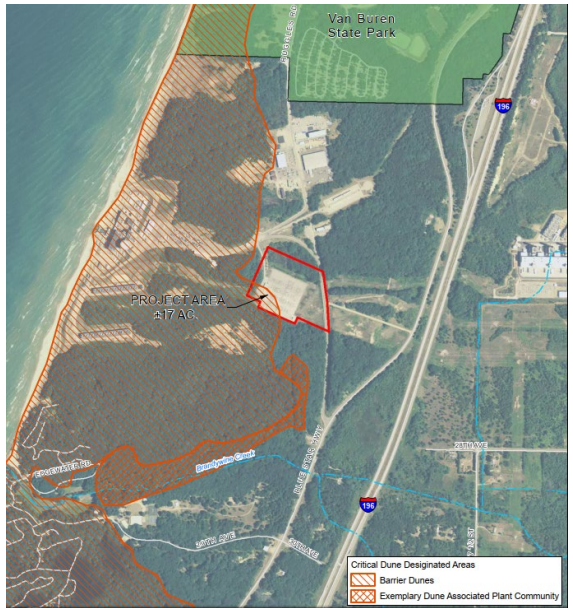
SMR-300 Derisked Licensing Approach with USNRC

- **USNRC SMR-300 pre-application process ongoing since 2019 (Docket No. 99902049)**
  - ✔ Topical Reports, White Papers, and ongoing pre-engagement meetings with USNRC [1]
  - ✔ Incorporation of regulatory feedback during design process through pre-application process (no surprises).
  - ✔ Holtec's Approach Substantially de-risks the project
- **Holtec is following the USNRC 10CFR50 2-Part Licensing Process** (flexibility during manufacturing and construction)**.**
  - ✔ **Part 1: Construction Permit Application (CPA)**
    - Preliminary Safety Analysis Report (PSAR)
    - Environmental Report (ER)
  - ✔ **Part 2: Operating License Application (OLA)**
    - Final Safety Analysis Report (FSAR)
    - FSAR concludes the final safety evaluations, inclusive of design changes and as-built conditions.
- **Additional regulatory feedback and pedigree of SMR-300 design through Generic Design Assessment (GDA) ongoing in the United Kingdom.**
  - Preliminary Safety Analysis Report (PSAR), Preliminary Environmental Report (PER), and Generic Security Report—are progressively published in line with our commitment to transparency. [2]

[1] www.nrc.gov/reactors/new-reactors/smr/licensing-activities/pre-application-activities/holtec.html
[2] https://gda.holtecbritain.com/documents/
https://onr.org.uk/generic-design-assessment/assessment-of-reactors/holtec-international-smr-300/

The FOAK SMR Project: Palisades SMR-300

- **Palisades SMR-300 Project Structure (Build-Own-Operate)**
  - **Location**: Palisades, MI, United States
  - **Capacity**: 640MWe/5,300 GWH Annual
  - **Ownership**: Holtec with potential investment partners
  - **Operator**: Holtec (Palisades LLC)
  - **Financing**: DOE LPO or Private Financing
  - **Offtake**: Power Purchase Agreement (PPA) (ROFR with Wolverine and other engaged)
  - **Jobs Creation**: 280 Direct Long-term Jobs plus Supply Chain
  - **Work Force**: 2,000 Personnel During Construction
  - **Supply Chain**: 1,000's of long-term jobs
- **SMR-300 Project Status**
  - Location at the Palisades site selected and clearing work complete (April 2024)
  - Environmental and geotechnical data collection complete (November 2024)
  - Major procurements started in 2024 (forgings, turbine, etc.)
  - Submittal of Construction Permit Application for Palisades (June 2026)
  - Commence Nuclear Island Construction Activities (June 2027)
  - Submittal of Operating License Application (2028)
  - Start of Commercial Operation (2030 Unit 1 / 2031 Unit 2)



Palisades Nuclear Power Plant

270-acre facility located on the southern coast of Lake Michigan, acquired by Holtec in 2022 from Entergy

Mission 2030 & Market Deployment

- Holtec International has initiated **"Mission 2030,"** aiming to deploy the first U.S. SMR (SMR-300) at the **Palisades** site in Michigan **by 2030**.
- The project involves constructing **two SMR-300 units** alongside the existing 800-megawatt Palisades plant, which is scheduled to restart this year 2025 after its 2022 shutdown.
- Holtec has invested over $50 million in site development and environmental studies, with plans to commence the NRC's construction permitting process early next year.
- An **expanded alliance with HDEC** has been established to build a **10-gigawatt fleet** of SMR-300s across North America **by 2040**, starting with the Palisades project.
- **Palisades will be the first site in the USA to host and operate an SMR-300**, setting a precedent for future deployments of SMRs worldwide.

Holtec's Team Key Differentiators

- **Nuclear Industry Problem 1:** Cost-Plus Mentality, sell the Technology, not the Plant
  - ✔ **Holtec Difference:** A culture of global turnkey fixed-price project delivery, on-time and on-budget.
- **Nuclear Industry Problem 2:** Nuclear power plants have become too complex
  - ✔ **Holtec Difference:** A fresh reinvention of PWRs
  - ✔ PWR reactor simplified "at the core" with inherent safety features rendering it Fukushima-proof.
- **Nuclear Industry Problem 3:** Paper reactor designs difficult to build.
  - ✔ **Holtec Difference:** A history of turning "products" into "projects"
  - ✔ Fabricator, constructor, operator, fuel & waste management companies imbedded in SMR-300 design process.

Questions?

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SMR

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