

Yangjiang Nuclear Power Plant

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INDICO#62

As an important energy construction project of the national "Eleventh Five-year Plan", Yangjiang Nuclear Power is the first domestically approved nuclear power project constructing six PWR nuclear power generation units at the GW level and a representative project of "large-scale, series and standard" nuclear power development in China. The Project applies the self-owned CRP1000 technology and its modifications, and is awarded with National High-quality Project Gold Prize 2020-2021, Excellent Project Prize of National Quality Award, Honorable Mentions of the 6th China Grand Awards for Industry, Top 100 Buildings of China in the New Era 2022, and the 20th National Quality Award.

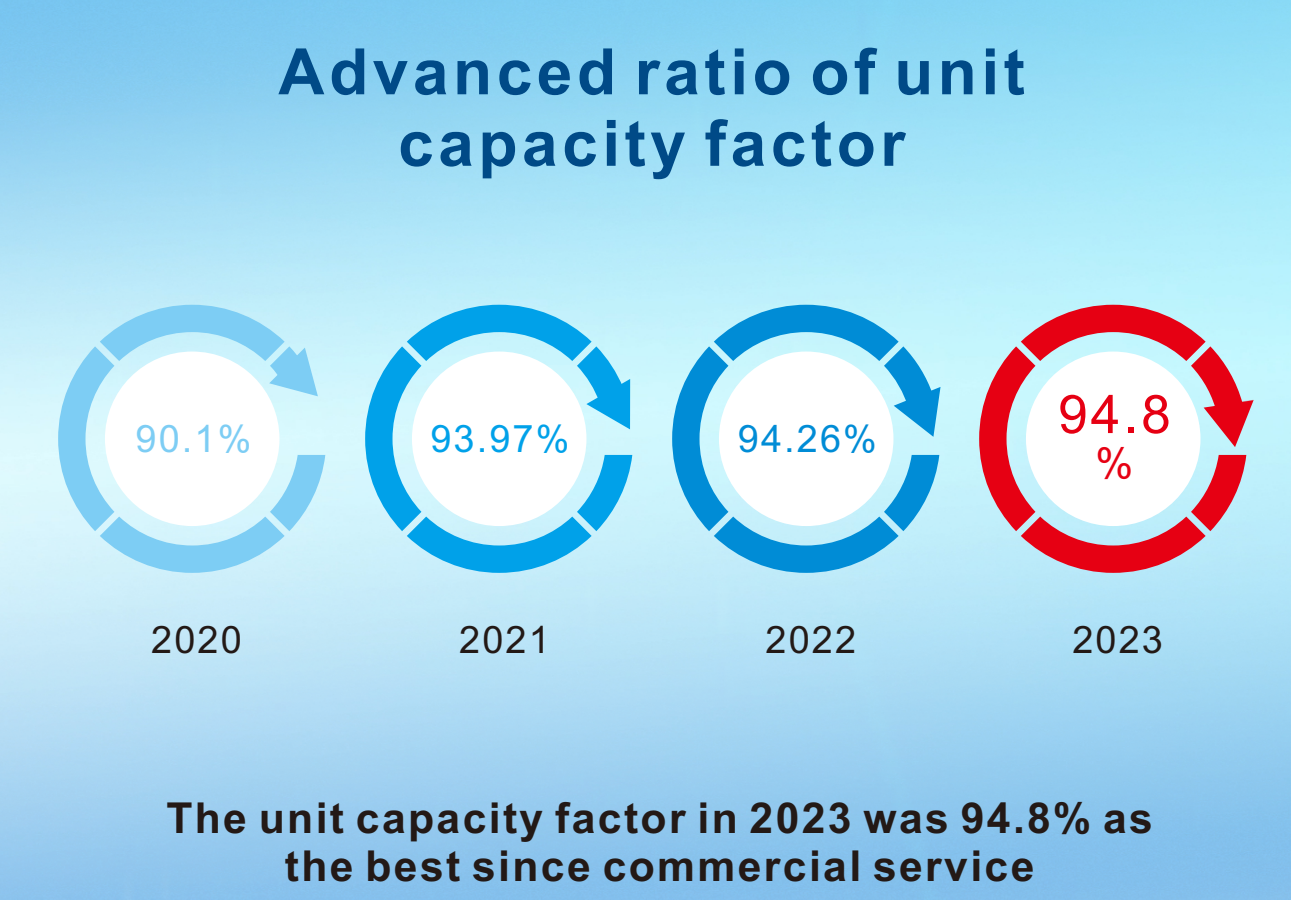
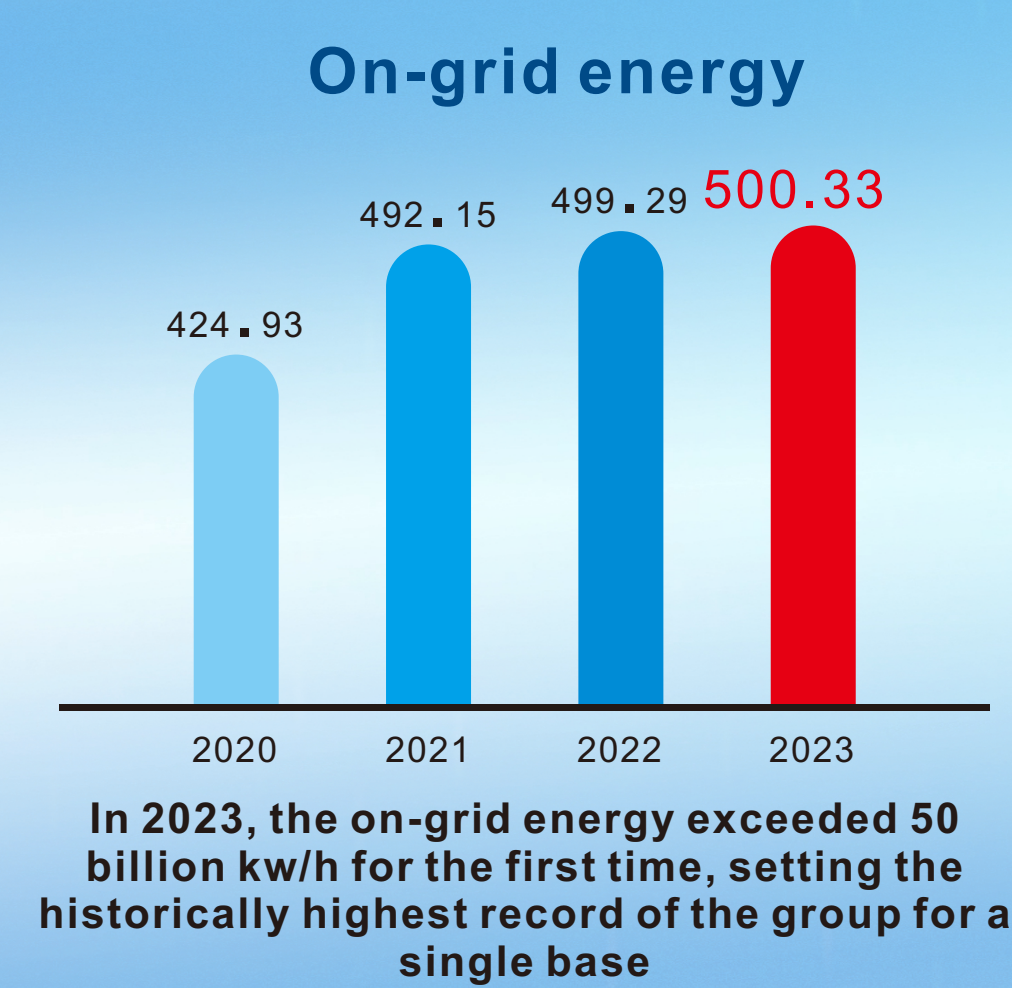


Innovatively develop the full-process informationized and digitalized fleet management

Set up the Production Command Center, base on the functional positioning of "one platform, two foot stones, three centers, four positions and five achievements", leverage digitalized means to explore and reform a set of reproducible and transferable full-process informationized and digitalized fleet management integrating management decision-making, scheduling and coordination, and risk detection to realize safe, efficient and intensive nuclear power fleet management.



- ★ Identified as the exclusive strength in WANO CPR-C02 Peer Review
- ★ Chosen by China Annual Comprehensive Report on Nuclear Power Operation (2022) of China Nuclear Energy Association
- ★ Winner at the 4th China Industrial Internet Contest and the 1st Digital Scenario Innovation Contest for State-owned Enterprises
- ★ Winner of the "Golden Unit" 2023 of China Southern Power Grid (only nuclear power unit)
- ★ Winner of the 2nd Prize for CEC Electric Power Science and Technology Innovation 2023



"DRT" high standard behavior training method

The "DRT" high standard behavior training method developed and promoted by Yangjiang Nuclear Power Plant is a set of high standard behavior requirements and methods aimed at standardizing the operation and behaviors of operating personnel.

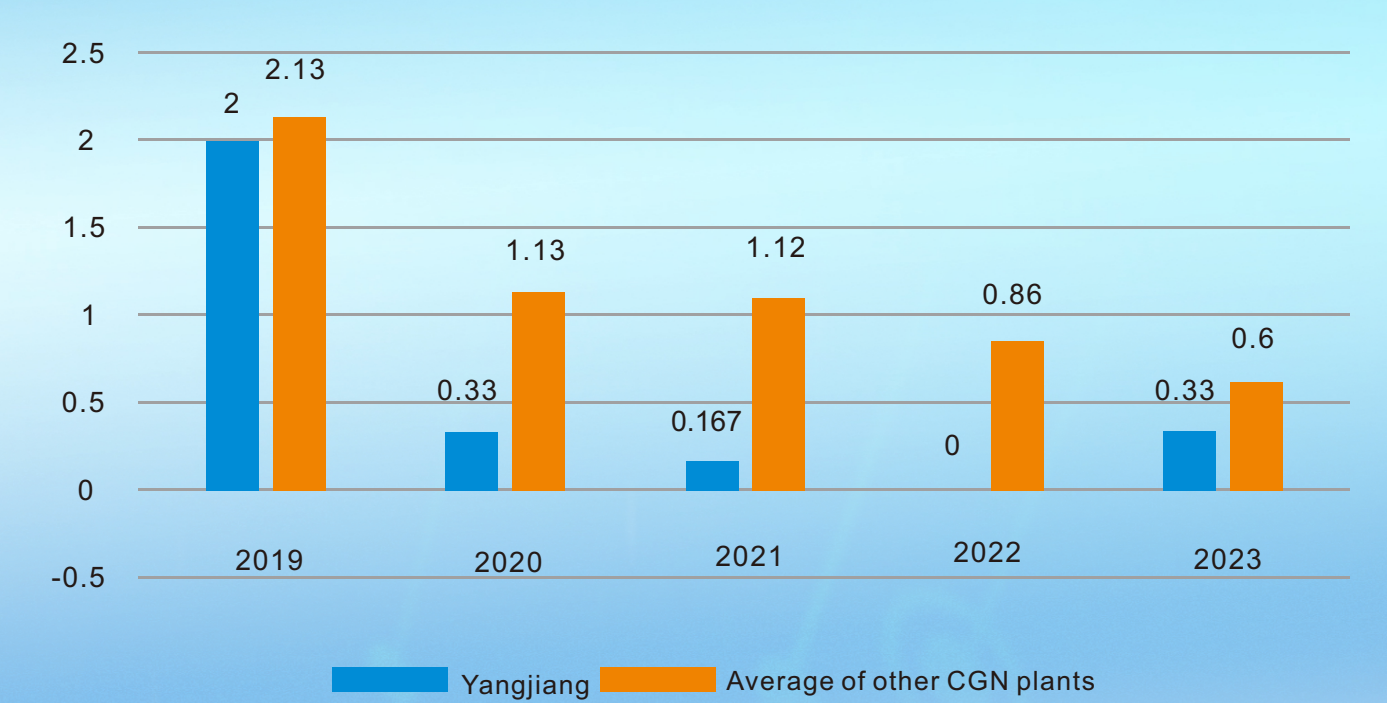
- ★ Focus on main business and critical operations to ensure the operability of management requirements
- ★ Focus on TOPx weaknesses and design DRT training to eliminate behavior weaknesses
- ★ Build high standard atmosphere and promote cultural identification and group consciousness
- ★ Attach importance to critical niches and individuals in combination with data analysis

- ★ Zero human caused events for licensed officers in 2022
- ★ Excellent Course of China Nuclear Energy Association 2022
- ★ Excellent Award of National Quality and Technology Prize 2023
- ★ Quality Benchmark in Guangdong Province 2023

Achieve a year-on-year decrease in human caused events in operation and zero license operating events for consecutive three years



Human caused events of licensed officers for a unit (licensing operating event and internal operating event)



Improvement of critical equipment reliability

Lead by "digitalization"

- ★ Critical Component Management/ON LINE
- ★ AI-based intelligent parameter monitoring
- ★ Provide data interfaces - "32" sets of associated systems
- ★ Data governance on equipment bottom layer

Focus on "criticality"

- ★ Critical Component Management (CCM) System
- ★ Dynamic CCM- double redundant equipment extension
- ★ Hazard identification along the full link
- ★ "Risk map"

"1440" days for six units

NO Unplanned outage

Circulating water monitor and pre-filtration system



Mechanization

- ★ Air curtain equipment -jellyfish interception
- ★ Oil containment boom-flotage interception
- ★ 4 interception nets-main interception
- ★ Safety net-bottom interception

Automation

- ★ Automatic net hauling in and out
- ★ Automatic extraction
- ★ Collection and transfer of marine organism

Informatization

- ★ Sonar
- ★ In situ imaging
- ★ Satellite remote sensing
- ★ Integrated monitoring platform

Front-end interception rate of marine organism

75%

>95%

