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ANEGASAKI THERMAL POWER STATION

WELCOME TO ANEGASAKI THERMAL POWER STATION!

Features of the Anegasaki Thermal Power Station

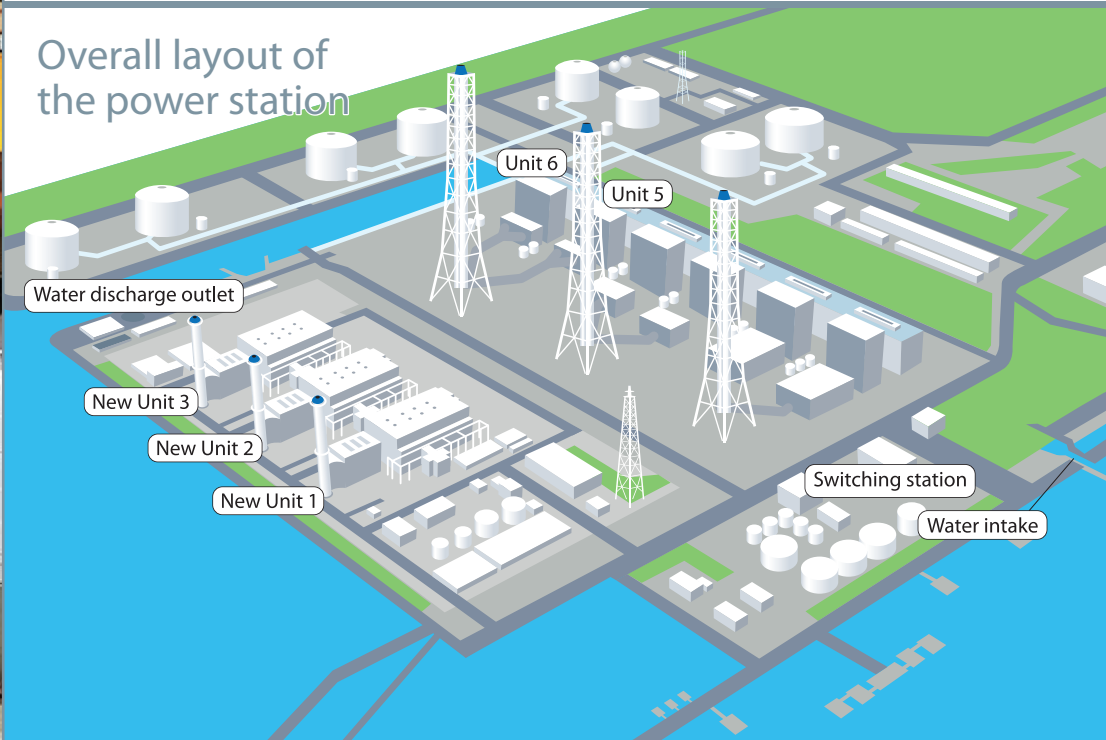
A state-of-the-art digital power plant
with world-class highly efficient power generating equipment

World-leading state-of-the-art digital power plant

The New Units 1 to 3 at the Anegasaki Thermal Power Station feature combined cycle power generating equipment using cutting-edge gas turbines whose combustion temperature is 1,650°C class. In 2023, the old equipment at the Anegasaki Thermal Power Station, which is located in Ichihara City, Chiba Prefecture, was replaced by power generating equipment with world-class performance. This equipment helps supply inexpensive and stable electricity with lower environmental impact. As the first digital power plant of the JERA Group, an in-house app has been introduced and utilized to improve the efficiency and sophistication of operations related to facility operation and maintenance.



Overall layout of the power station

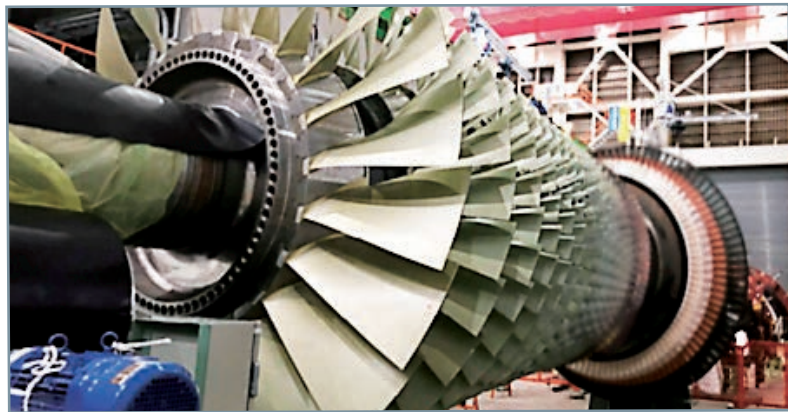


Anegasaki Thermal Power Station New Units 1, 2, and 3

**CHECK!
Features**

World-class highly efficient power generating equipment

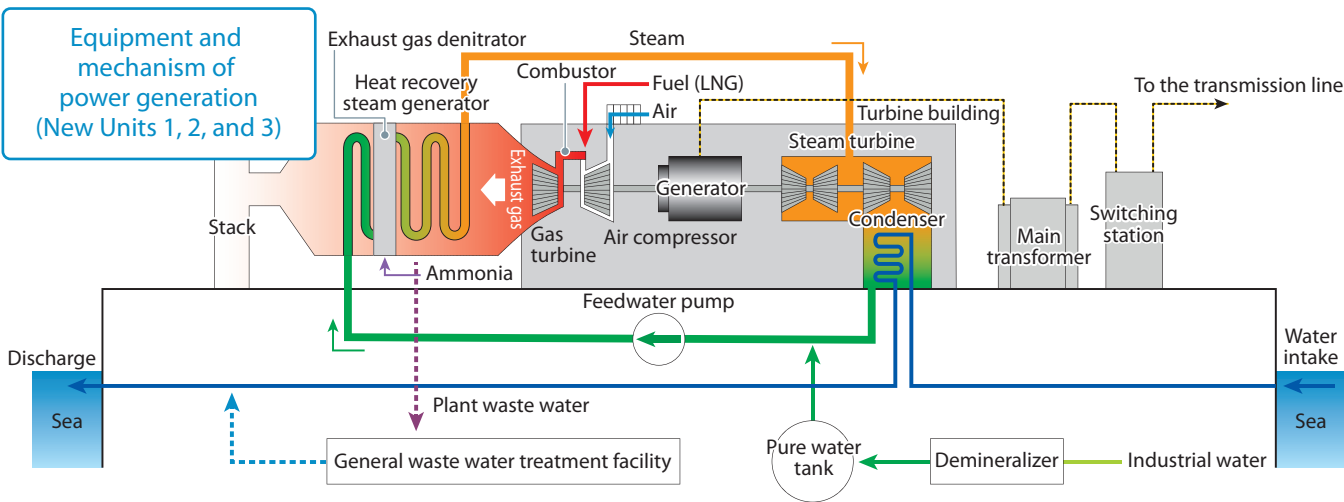
The combined cycle power generating equipment using state-of-the-art gas turbines whose combustion temperature is 1,650°C class (three 646.9 MW units) has achieved world-class thermal efficiency.



World-class highly efficient gas turbines

World-class thermal efficiency has been attained by increasing the combustion temperature. The gas turbines are easy to start up and shut down (approximately one hour from startup of gas turbines to base load in the daily start and stop (DSS*) operation) and can thus respond quickly to fluctuations in electricity demand.

*DSS: An operation to shut down late at night and start up the next morning each day



Central control room

This is the command center of the digital power plant. The equipment automatically checks* for damage to equipment and any violation of laws and regulations in place of operators, as well as automatically reducing the load and shutting down units. Many monitoring items are equipped with pre-alarms and timers, which are optimized to reduce the labor required for monitoring.

* Available for some items only

Outline of facilities

Unit No.	Output (MW)	Fuel	COD	Power generation type	Operating company
New Unit 1	Approx. 650	LNG	February 2023	GTCC	JERA Power Anegasaki
New Unit 2	Approx. 650		April 2023		
New Unit 3	Approx. 650		August 2023		
Unit 5	600	Steam	April 1977	Steam	JERA
Unit 6	600		October 1979		

Name: Anegasaki Thermal Power Station Location: 3 Anesaki-kaigan, Ichihara City, Chiba Prefecture
Site area: Approx. 96,000m²

Digital power plant

The Anegasaki Thermal Power Station is JERA's first digital power plant (DPP) which has introduced an app for workstyle reform as a full package. The DPP makes it possible to accumulate and share real-time data of the power generating equipment as well as information and judgment factors, including knowledge, experience, and know-how which were previously retained by individuals, in the cloud, enabling anyone to utilize the data. The power station operators can improve the efficiency and sophistication of operations related to facility operation and maintenance by using the data through the in-house app with technical support based on data analysis available from the G-DAC,* which monitors the DPP operation. Because the operators no longer have to collect and analyze data, they can focus on utilizing data and improving operations. The workstyle reform at the power station is expected to maximize the value of the power station.

*G-DAC (Global Data Analyzing Center): a department in which data analysts remotely monitor and analyze the operating condition of power stations in and outside Japan and provide technical support by using advanced AI-based tools around the clock



G-DAC (Global Data Analyzing Center)

Calorific Value Adjustment System

– City gas production plant –

JERA uses large amounts of natural gas to generate power.

The Anegasaki Thermal Power Station supplies city gas through the calorific value adjustment system.

What is calorific value adjustment system?

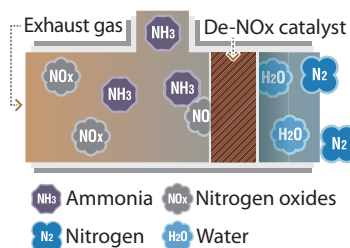
City gas is made mainly from natural gas, the calorific value of which varies depending on the production area. The calorific value is adjusted by adding liquefied petroleum gas (LPG), whose main components are butane and propane, to natural gas, which has been used for power generation on the premises of the power station, to supply gas at the major city gas standard (13A) in Japan.



Environmental Initiatives

Preventing air pollution

Because LNG is used as a fuel, soot and sulfur oxides, which cause acid rain, are not emitted. Emissions of nitrogen oxides (NOx) are reduced by using a combustor which generates less NOx and an exhaust gas denitrator. This denitrator injects ammonia into the exhaust gas and decomposes nitrogen oxides into harmless nitrogen and water through chemical reaction in the catalytic layer.



Exhaust gas denitrator
(removal of nitrogen oxides (NOx))

Keeping the oceans clean

The equipment cleaning water and general waste water generated by the power station are purified by condensation, sedimentation, filtration, and neutralization in the general waste water treatment facility, and the water quality is checked before being discharged.

Protecting the global environment

At power stations, it is important to maximize the power generation efficiency and reduce the consumption of natural gas, which is a valuable resource. Higher power generation efficiency means that less carbon dioxide, which causes global warming, is produced.

We help to limit the use of the earth's finite resources and curb global warming by introducing highly efficient power generating equipment and taking full advantage of the technical capabilities that the JERA Group has accumulated over the years.

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