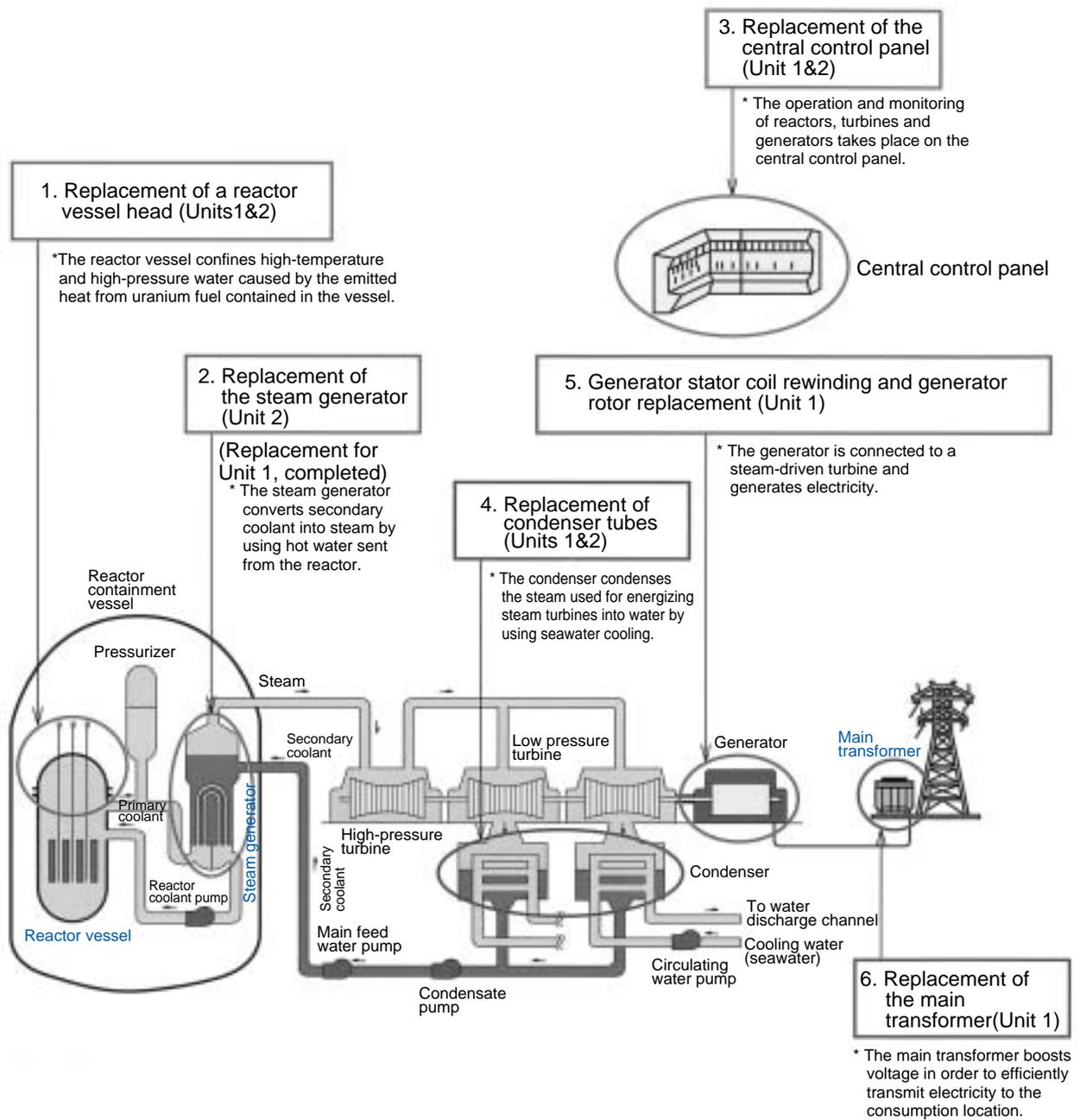


### 3. Renewal of Main Components at Genkai Nuclear Power Station

Kyushu Electric Power renewed the main components of Units 1 and 2 at Genkai Nuclear Power Station during the units' 2001 periodical inspections. This renewal aimed to further improve the reliability of components and reduce the dose of radiation exposure to workers during inspections.

#### (1) Overview of Genkai Nuclear Power Station's plant system and renewal construction details



## (2) Description of renewal work

### 1. Replacement of a reactor vessel head

Cracks were found at the control rod drive mechanism (CRDM) nozzles of a reactor vessel head at an overseas nuclear power station. Although no problems were confirmed during periodical inspections at domestic nuclear power stations, Kyushu Electric Power replaced the existing reactor vessel head with advanced one in order to further enhance component reliability and reduce radiation dose exposure to workers during inspection. The new reactor vessel head features a welding-free integrated structure and employs upgraded CDRM nozzle materials with a modified welding shape.

### 2. Replacement of a steam generator

The damage on the steam generator tubes for Unit 2 would not have posed safety or technological problems had they been continuously operated while undergoing periodical repair treatment. However, Kyushu Electric Power replaced the conventional steam generator with an advanced one featuring anti-vibration bars, upgraded tube material and a modified tube hole shape for the tube support plate. The reason behind this replacement was to reduce the radiation exposure doses to workers during repair work and to avoid an extension of the periodical inspection period.

### 3. Replacement of the central control panel

Kyushu Electric Power replaced the central control panels for Units 1 and 2 central control room with advanced control panels. The purpose of such replacement was to achieve higher reliability of plant operation performance and to further improve plant-monitoring performance. Further, the new control panels mainly focus on operability. We have increased the number of television displays equivalent to those currently used at Genkai Units 3 and 4, the most technologically advanced nuclear plant units in the company.

### 4. Replacement of condenser tubes

Kyushu Electric Power replaced conventional condenser tubes with more corrosion-resistant titanic tubes in order to further improve the reliability of Units 1 and 2 condensers. The change was motivated by an incident at Unit 1 when seashells and other substances contained in the cooling seawater caused cracks in the condenser tubes, resulting in seawater leaking into the condenser through the cracks.

### 5. Generator stator coil rewinding & generator rotor replacement; 6. Replacement of main transformer

Regarding the generator and main transformer of Unit 1, the generator stator coil was rewound; and the generator rotor and main transformers were replaced in order to achieve higher reliability for these components.

