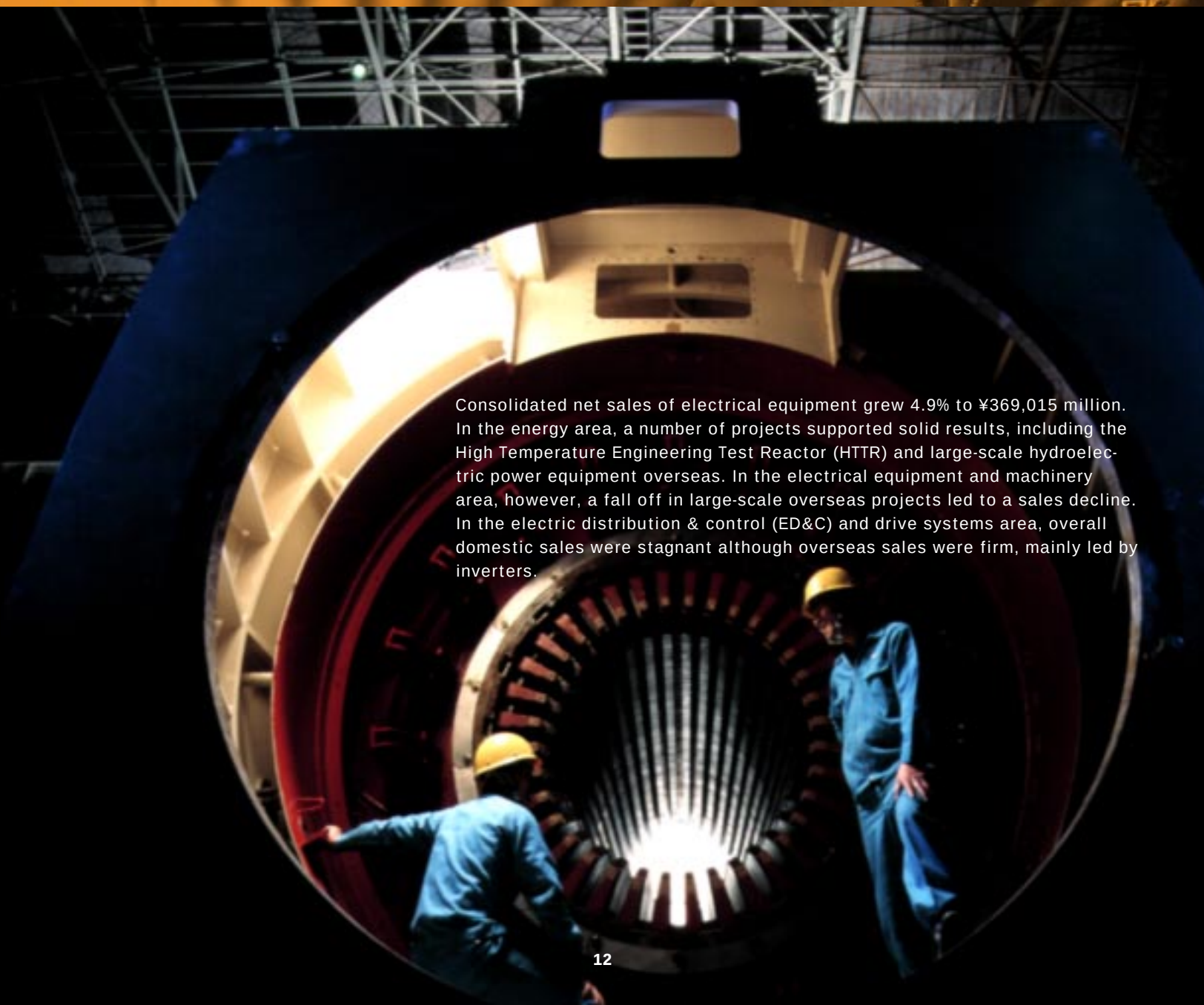
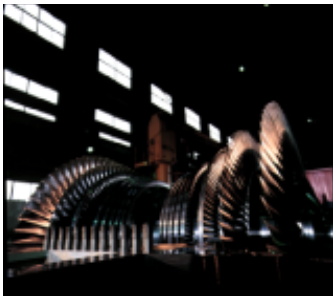
Electrical Equipment



Consolidated net sales of electrical equipment grew 4.9% to ¥369,015 million. In the energy area, a number of projects supported solid results, including the High Temperature Engineering Test Reactor (HTTR) and large-scale hydroelectric power equipment overseas. In the electrical equipment and machinery area, however, a fall off in large-scale overseas projects led to a sales decline. In the electric distribution & control (ED&C) and drive systems area, overall domestic sales were stagnant although overseas sales were firm, mainly led by inverters.



Fuji Electric received a full turnkey order to provide a geothermal power plant for P.T. Mandar Nusantara's Wayan Windu Power Plant in Indonesia. The plant adopts a 110 MW geothermal turbine, which is the world's largest single cylinder.

Fuji Electric delivered a low-speed high-powered diesel generator to the Freeport Power Company in the Bahamas. The unit began operation in October 1997. Low-speed diesel generator units are attracting increasing attention recently, owing to their low fuel consumption and ease of maintenance.

ENERGY

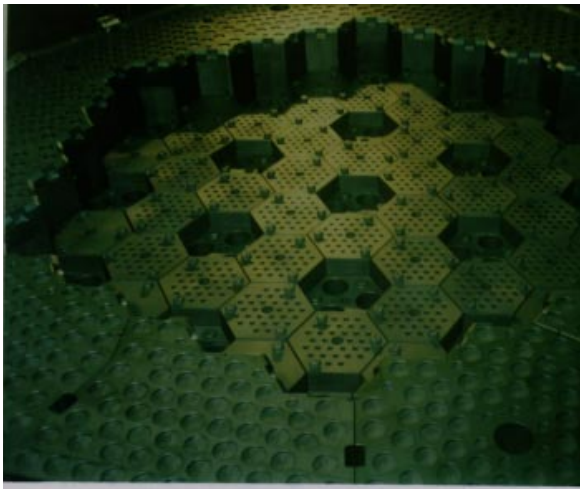
For the electric power industry, Fuji Electric provides thermal, hydro and nuclear power plants and related equipment as well as power transmission and distribution systems. We are also developing combined-cycle generation technology and such new generating technologies as fuel cells and photovoltaic cells. To stay in step with global market trends, we are promoting our engineering, procurement and construction (EPC) business, especially for geothermal projects.

In the thermal power generation area, we were awarded an order for a 600 MW steam turbine generator for a domestic thermal power station and for a 3.3 MW geothermal power plant from an electric power company in Japan, which is our first order for a domestic commercial geothermal project. We also received numerous overseas orders, including a full turnkey contract in Indonesia for 2 x 110 MW geothermal turbines with the world's largest single cylinder.

In the hydropower area, Fuji Electric received orders for pumped-storage hydropower equipment in India and a hydropower generating facility in Vietnam, among others. Consequently, orders exceeded those of the previous fiscal year. We delivered a 3 x 33 MW bulb turbine generator to a customer in China and a 7 x 23 MW bulb turbine generator to a customer in Pakistan.

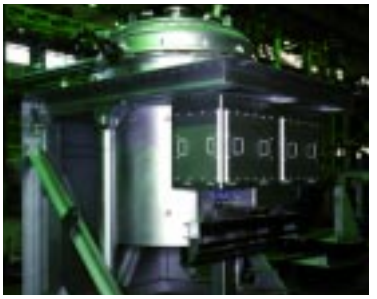
In the nuclear power area, we delivered major equipment to HTTR, Japan's first HTGR. Efforts are currently underway, primarily by the client, to achieve first criticality of the HTTR.

In the substation, power transmission and distribution systems area, we have a solid record for providing equipment and systems for Japan's electric power industry. During the term, we delivered eight large-capacity generator transformers that were completely assembled with all accessories mounted at the factory and transported to the power plant site, thus enabling a very short time required for installation and commissioning work at the site.



Fuji Electric and three other domestic suppliers of nuclear power plants delivered the HTTR to the Japan Atomic Energy Research Institute (JAERI), fulfilling an order that was received in 1991. We were responsible for such major equipment as the internal reactor structures and fuel handling system.

Fuji Electric has developed 2.5 kV/1.8 kA-rated flat-packaged IGBTs for use in large-capacity converter/inverters for railway and industrial applications. The new products have passed extremely stringent tests demonstrating their high standard of reliability required of IGBTs for railway and industrial applications.



The new induction furnace system was developed to melt galvanized steel scrap and remove the zinc component without the preprocessing stage of zinc removal. This new system solves various problems that arise when galvanized steel scrap is melted in conventional furnaces and has many other advantages for melting galvanized steel.

The Company contributed to smooth operations of the International Broadcasting Center for the 1998 Olympic Winter Games held in Nagano by providing a UPS system. The stable supply of electricity to the center supported real-time transmission of sporting events to countries worldwide.

ELECTRICAL EQUIPMENT AND MACHINERY

In the electrical equipment and machinery area, Fuji Electric provides industrial power application systems for industry and railway use.

In industrial power application systems, the Company received large orders for such facilities as large-scale steel sheet mills and clean rooms. However, orders declined overall amid weak private-sector capital investment in Japan and falling export demand owing to currency turmoil in Southeast Asia during the second half of the term. Sales during the term included a low-speed high-powered diesel generator unit, our largest such product to date, to an electric power company in the Bahamas. Despite this achievement, sales declined as a result of a falloff in a number of large-scale overseas projects.

New products included a zinc-removal induction-type steel melting system to upgrade product quality and improve the working environment in the pig iron casting industry. Our uninterruptible power supply (UPS) systems contribute to the stable operation of information processing equipment. During the term, we implemented a full model change of our UPS product line that upgraded function and performance for advanced computers, ranging from PCs and workstations to large mainframe models.

In electrical power equipment for railway use, orders declined overall despite new contracts for substation equipment arising from the construction of a new subway. For advanced train systems, Fuji Electric has developed compact, highly functional converter/inverters that use our newly developed 2.5 kV/1.8 kA-rated flat-packaged IGBTs, which have the largest capacity of their kind in the world. The new IGBTs have been incorporated into experimental rolling stock for the new series of Shinkansen trains.

Fuji Electric has developed open-system programmable logic controllers (PLCs) that adjust to international standards. The PLCs comprise hardware PLCs, which can achieve command processing speeds of 20 nanoseconds, and software PLCs that are compatible and able to operate with existing computer hardware.

We have expanded the lineup of PODs from 5.7-inch medium-sized displays to 10.4-inch large ones. Models with color liquid crystal displays (LCDs) feature user-friendly operation and vivid 16-color graphics.

ELECTRIC DISTRIBUTION & CONTROL (ED&C) AND DRIVE SYSTEMS

The ED&C and drive systems area is composed of electric distribution systems, control systems and drive systems. ED&C systems comprise such control equipment as magnetic motor starters, push-button switches and programmable logic controllers (PLCs); as well as electric distribution equipment, including molded-case circuit breakers (MCCBs) and earth-leakage circuit breakers (ELCBs). Drive systems are represented by induction motors, motor-related equipment and inverters.

In the domestic market, we strengthened our engineering sales support systems and continued to make aggressive marketing efforts. However, the economic slowdown in the second half of the term led to flat sales. On the other hand, exports benefited from the yen's depreciation. We have established subsidiaries to manufacture vacuum circuit breakers, distribution panels and motor-related equipment.

Our inverters bear the marks of CE and TUV of Europe, UL of the United States and cUL of Canada, demonstrating that these products have been adapted to major international standards.