Marubeni
Utility Services

Marubeni Utility Services, Ltd.
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Corporate profile

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Message

Corporate Profile

We offer advanced technologies from all over the world.

Marubeni Utility Services, Ltd. (MUS) is a unique and highly regarded trading house, providing our customers with innovative, high value technologies, products and services.

Marubeni Group, the first recipient of a nuclear export certificate issued by the United States Atomic Energy Commission (AEC), participated in the project of building JRR-1 (Japan Research Reactor No.1), Japan's first nuclear reactor, which began operation in 1957. Our continued participation has made us a major contributor to the nuclear industry for more than sixty years.

Leveraging our long-standing experience and global network, we support our customers in smoothly introducing technologies that meet the demands of the times. Also, Marubeni Group's comprehensive strength enables us to build up, manage and implement all phases of large and complex global projects.

In recent years, we have expanded our business domain to include: 1) Radioisotopes, irradiation equipment and accelerators for medical diagnosis/sterilization and research purpose; 2) Cyber security systems; 3) Simulators; and 4) Software for performance monitoring and plant optimization. These are just a few of the sophisticated, high value products offered by MUS.

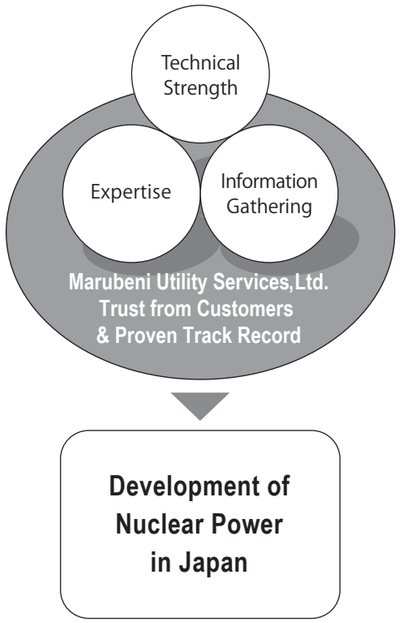
We remain committed to contributing to the safe and robust growth of society by motivating employees, satisfying customers and improving environmental consciousness.

Tadanori Tobita
President and CEO

Background

Competing against—and sometimes working with—plant manufacturers to offer excellent technologies and products

Marubeni Utility Services, Ltd. was established in 1998 through the merger of three corporations of Marubeni Corporation's nuclear group. As a Marubeni group trading house specializing in the nuclear field, we offer nuclear-related products and services, excluding nuclear fuel, mainly to electric power companies and heavy electric plant manufacturers in Japan. We supply overseas products with high technical expertise to domestic power companies, and we are renowned as a unique trading house that has a wealth of technical knowledge in nuclear-related business. We compete against—and from time to time work with—domestic plant manufacturers who have strong relationships with electric power companies. We sometimes even provide plant manufacturers with superior technologies and products—a unique business practice.



Technology-Oriented

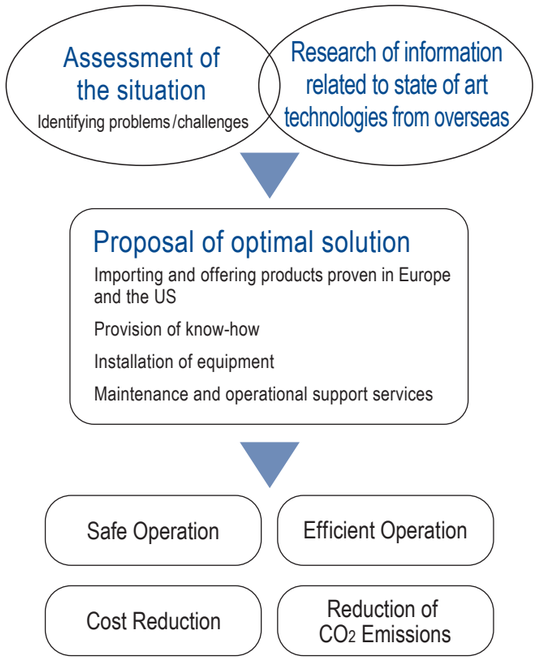
The equipment and software products from the European and US companies for which we serve as a sales agent and distributor are manufactured using advanced and distinctive techniques that have been nurtured through many years of research and operational experience. We bring these advanced and deeply specialized technologies and mechanisms into Japan and explain them to our customers in plain language to address their technical demands and questions immediately. We have an overwhelming presence and enjoy an excellent reputation in the industry as a trading house that uses its rich technical know-how to provide solutions for customers rather than simply selling and delivering products.

Work Site-Oriented

The equipment and software products that we supply are used in many power stations and other plants where safe operation is an essential requirement. When installing equipment or software products in facilities, we work with engineers from the foreign manufacturer to ensure close communication with the customer. This way we can overcome cultural differences or conflicts of interest between the manufacturer and the customer, thus enabling such work to proceed safely and efficiently. Based on results obtained through working as a team in the field, real-time interpersonal connections we have had, and valuable experience that could not have been acquired anywhere else, we firmly believe that we can find a solution to any problem at the work site.

Supporting the safe and efficient operation of nuclear power plants

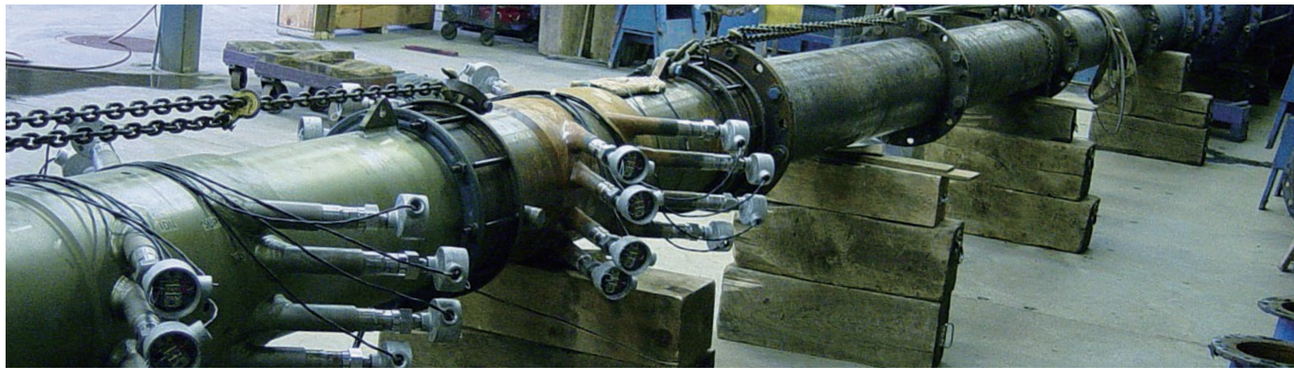
As a CO_2-free energy source, nuclear power is expected to continue its important position as the backbone of our electric power supply.
We support the safe operation of nuclear power plants by providing advanced foreign products and software that are the result of many years' accumulated experience. And by improving efficiency and power uprating within the framework of the rated power licensed by the government, we help plants to improve their capacity factor and contribute to prevention of global warming.



Importing superior technologies

Issues such as safety seismic measures, environmental assessments and convincing the local population of its safety mean it takes a long time to construct a new nuclear power plant. Therefore, it is important to extend the operation of existing nuclear power plants to ensure a stable power supply.
To address the challenges of advanced operation, we replace existing power-plant components produced by domestic plant manufacturers with foreign products that have excellent technical capabilities, thus securing durability and improving efficiency. We combine software products proven in Europe and the US in an optimal manner to identify failure locations, and apply predictive maintenance techniques through diagnostics to contribute to the operational safety and improved efficiency of power plants.

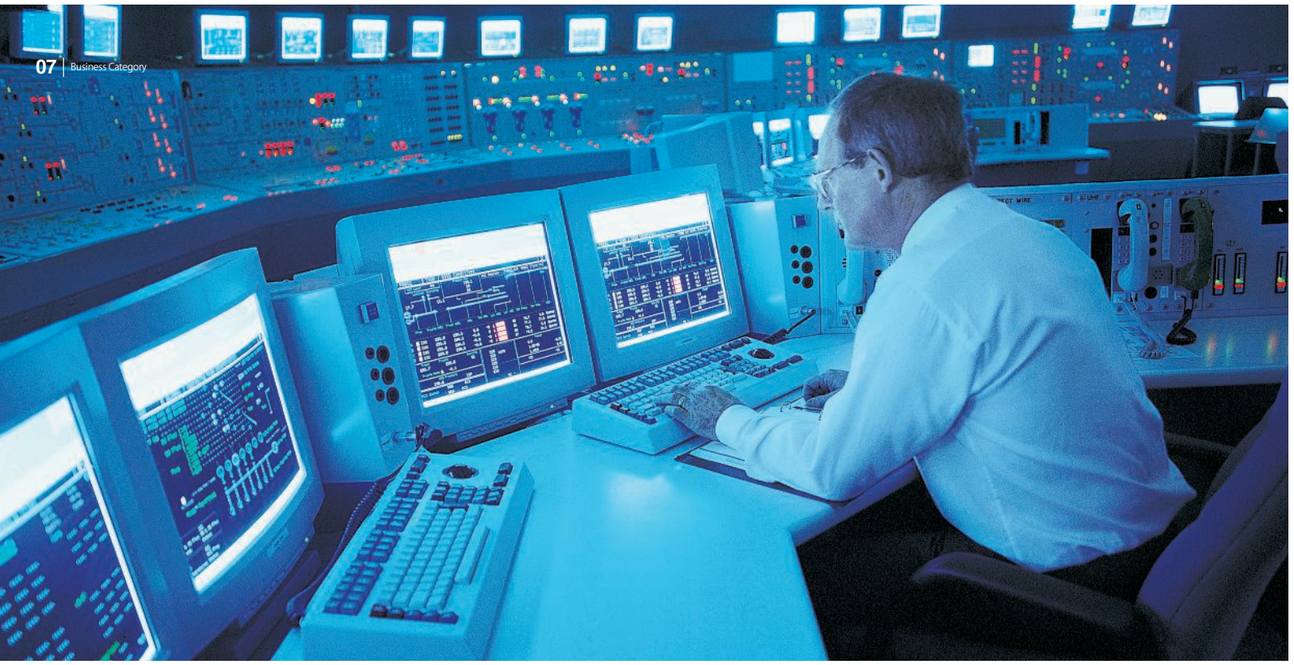
Function



Proposal Capabilities

We have been continually dealing with state-of-the-art technologies and products from all over the world. This means that through our long-term business contacts and close relationships developed with customers at work sites, we can identify issues and identify which kinds of techniques and products are required at a site at a given time. We can thus propose the optimal solution, using our global network to combine the best products and systems from domestic and foreign manufacturers. We see the situation from our customers' viewpoint and work closely with them to facilitate the introduction of high-value-added technologies and build a win-win relationship.

Business Category



Hardware

We import and distribute equipment and hardware from Europe and the US, and also support our customers during installation. As the Japanese agent for the world's largest nuclear reactor maker Framatome of France, Germany and the US, we provide repairs/servicing including equipment for nuclear power plants in Japan. In addition, we market and deliver high and low-pressure steam turbines and condensers manufactured by Siemens Energy AG of Germany. We also distribute a wide variety of equipment including ultrasonic flow meters produced by US-based Caldon Ultrasonic Measurement Systems, Inc. of the Cameron Group, emergency core cooling system (ECCS) strainers made by PCI, and loose parts monitoring systems (LPMS) produced by Mitsubishi Hitachi Power Systems Industries Co., Ltd

Cyber security

Threats to cyber security have been an ever-increasing problem in recent years. To take measures against them, we import and deliver cyber security gateways developed by the Israel-based Waterfall® Security Solutions Ltd.

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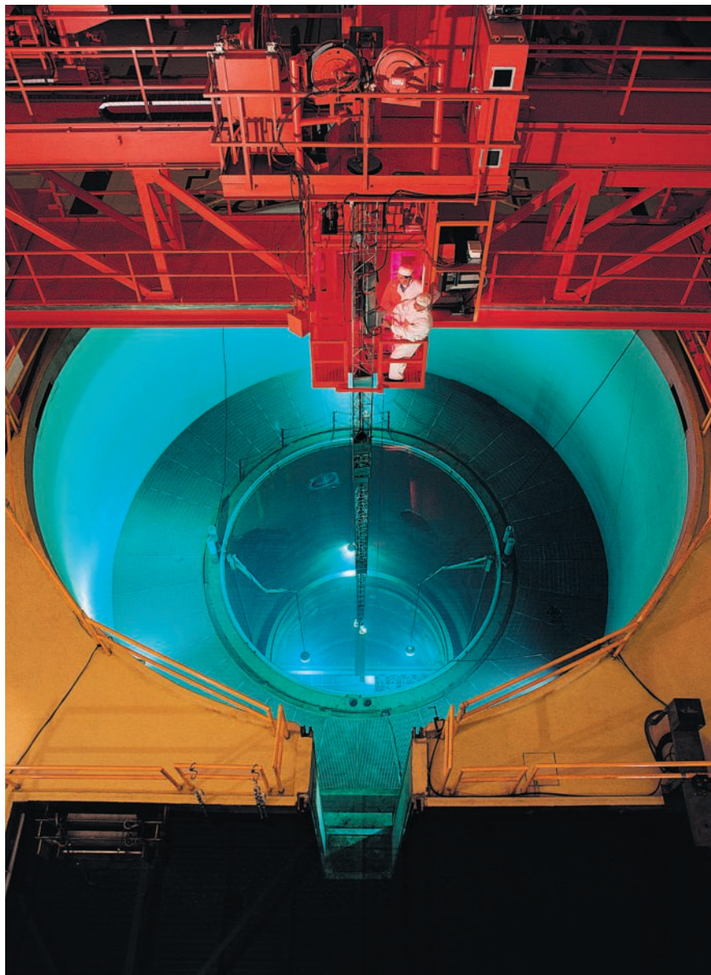
Material and Services

We import a wide range of materials from other countries and distribute them to nuclear power plants, nuclear research institutes, and the industry. As the agent for Nordion of Canada, the top supplier of the radioactive isotope cobalt-60, we supply this material, which is used for sterilizing medical equipment, for medical research, and for product development, to sterilization service companies, research institutes, and medical equipment manufacturers.
We also import and sell gamma-ray irradiators using cesium-137 as a radiation source (Gammacell) manufactured by Best Theratronics Ltd. of Canada. Our other services include the import/export of materials for domestic and foreign companies and research institutes. Materials we handle are radioactive isotopes and stable isotopes, including molybdenum, americium, californium, curium, zirconium, boric acid, helium-3, lithium-7, and tungsten. We also provide support for the transport of nuclear fuel and related items and investigative research services using facilities in Russia, Kazakhstan, and other CIS nations.

Software

We offer a range of software based on unique technology, such as for improving operational efficiency, for monitoring the system status to predict failures, and so on. These software products were developed through many years of operational experience at nuclear power stations and other plants mainly in the US.
We distribute management software products that are new to Japan and also offer training support services for their operation. Such products include offline thermal efficiency diagnostic software (PEPSE), online thermal efficiency monitoring and diagnosis software (PMAX), and process computer software (R*TIME) — all developed by Scientech of the US-based Curtiss-Wright Flow Control Service Corp.



Introduction Example

Case Study 1

Contributing to the power uprate and reducing the outage period for nuclear power plants

We delivered high and low pressure steam turbines from Siemens Energy, Germany to Sendai Nuclear Power Station Unit 1 and 2 of Kyushu Electric Power Co., Inc.
A consortium between Siemens Energy and Marubeni Group submitted a bit for the turbine replacement projects in competition against Japanese OEM who constructed the power plant, and Marubeni-Siemens Consortium won the contract. We could reduce the outage period significantly, and completed the installation work.
Marubeni group, as consortium leader, managed the construction work on-site; Siemens Energy was responsible for the design, engineering, and management of the installation of the turbines at the power plant. Nishinippon Plant Engineering and Construction Co., Ltd.—an affiliate of the Kyushu Electric Power Co., Inc.—undertook the construction work at the power plant. This was the first case of turbines manufactured by a company other than the original plant manufacturer of the nuclear power plant being supplied and installed in a replacement project, and attracted much attention as an epoch-making event in the industry.
Here is some of the feedback in regards to this project that we received from one of the customers after delivering the turbines to Unit 1:
"It was a big challenge for us to replace one high-pressure(HP) and three low-pressure (LP) turbines in parallel in one single outage.
At first, we were confused due to cultural differences between Germans and Japanese, but with closer communication, we were finally able to build mutual trust and complete our missions with Siemens!
Our new turbine shows very stable operational records through the whole year. Results from periodical inspections are in good, and also the power increase sufficiently met our expectations. The capacity factor of Sendai Unit 1 during fiscal year 2006 (after replacement) was 103.7%, which was at the top level of Japanese nuclear power plants. This percentage was equivalent to an increase of 230,000 MWh compared to the year before the replacement. In addition, it has also contributed greatly to reductions in CO_2 production.
This successful implementation of the project was greatly facilitated by our management, which we highly appreciate. The replacement led to not only improved capability, but also to a higher motivation of our employees."

Case Study 2

Helping to increase power output and efficiency at nuclear power plants

We provide ultrasonic flow meters developed by Caldon Ultrasonics Measurement Systems of Cameron Group of the US. CheckPlus is a self-contained high-accuracy ultrasonic flow meter for water, oil and other liquids used in power plants, pipe lines, chemical plants and other facilities. This is the only product certificated by the US Nuclear Regulatory Commission (NRC) for use in a power uprate (increasing the maximum power level at which a nuclear power plant may operate). The photo shows a test setup that uses a mock up of the pipes used in a nuclear power plant to measure actual flow rates so as to ascertain the liquid profile.
CheckPlus flow meters have been introduced at some power plants in Japan and have contributed to an increase in power output.

Case Study 3

Helping to further improve the safety and reliability of nuclear power plants through technologies designed to prevent severe accidents.

Fukushima Daiichi Nuclear Power Plant suffered from severe accidents caused by tsunami, that is said to be the biggest one in the last 1,000 years. It resulted in damage to the nuclear fuels, reactor pressure vessels, and reactor containment vessels. Since then, there have been a lot of discussions about what we can learn from the incident, and it is no doubt that many of them focused on topics of whether the preventive measures for severe accidents were sufficient or not. After the Chernobyl accident in 1986, the German nuclear industry developed and gradually implemented a variety of technologies designed to prevent severe accidents. To utilize these proven technologies to facilitate improving the safety of Japan's nuclear power plants, we have introduced a variety of technologies designed to prevent severe accidents. Those technologies of a nuclear related manufacturer Framatome have been mainly developed in Germany. We provide the following systems and equipment to nuclear power plants in Japan: Passive Autocatalytic Recombiners (PAR) for preventive measures against hydrogen explosions, Hydrogen Monitoring System, Filtered Containment Venting System to prevent overpressure inside the containment, and Mobile High Pressure Diesel Pumps, to secure and maintain cooling function.

PAR
(Passive Autocatalytic Recombiner)

Transportable pump

Case Study 4

Adopting off the shelf computers to improve performance and reduce costs

We won the bidding competition against Japanese OEMs for the replacement of process computers at a nuclear power plant and delivered computers installed with R*TIME software produced by Scientech of the US. In the past, dedicated machines were used to replace process computers for displaying the operational status of various equipment and instruments used in a nuclear power plant. However, to minimize costs, replacement with off the shelf servers and PCs instead of existing dedicated process computers now predominantes in the US thanks to dramatic advances in the performance of off the shelf computers. R*TIME, developed by Scientech of the Curtiss-Wright Flow Control Service Corp of the US, is software for acquiring, computing, storing, and displaying data that is necessary in the operation of nuclear power plants. R*TIME was customized and developed at Units 2 and 5 of the Fukushima Dai-ichi Nuclear Power Plant of Tokyo Electric Power Company.

Case Study 5

Introducing US products for emergency safety measures at power plants

We supply Mitsubishi Heavy Industries (MHI), a manufacturer of pressurized water reactor (PWR) power plants, with strainers produced by US-based Performance Contracting Inc. (PCI) for all twenty-four PWR power plants in Japan. With the Government now demanding countermeasures such as installing expanding strainers for emergency core cooling systems (ECCSs) in case of the possibility of loss-of-coolant accidents (LOCAs), we sequentially supplied strainers produced by PCI—which has a track record in the United States—in cooperation with MHI. It was arduous work to accommodate the demands of each individual plant—each requiring strainers with different configuration and specifications—but we work with equipment makers and plant manufacturers to conduct site surveys in order to supply the products that best suit each plant.