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JAPC website
http://www.japc.co.jp/english/index.html

Twitter
account: @official_JAPC
The Japan Atomic Power Company (JAPC) was established in 1957. Ever since, JAPC has been as a pioneer in the field, continuously contributing to the development of nuclear power generation through constructing and operating the Tokai Power Station, the first commercial nuclear power plant in Japan, as well as the Tokai No. 2 Power Station and Tsuruga Power Station Units 1 and 2.

Looking to recent circumstances regarding nuclear power generation, great efforts have been made to have nuclear power facilities pass safety review in order to comply with the new regulatory requirements and reinforce safety measures. As a result, some nuclear power plants have been able to restart operations. On the other hand, an increasing number of nuclear power plants, including our Tsuruga Power Station Unit 1, are being or are set to be decommissioned. Outside Japan, nuclear power development has been promoted or resumed in China, India and developed countries such as the United Kingdom and the United States. JAPC believes nuclear power has entered a new era at home and abroad.

We have improved human resources and technologies through our business activities. We will further improve and make the most of these resources to appropriately operate existing nuclear power plants. We will also make efforts in pioneering a new nuclear power era by promoting the construction plan for Tsuruga Power Station Units 3 and 4, providing support for the Fukushima Daiichi Nuclear Power Station and its decommissioning work, and steady involvement in Britain’s Horizon Project.

Nuclear power generation is an important base load power source for Japan, which has few energy resources. We believe nuclear power would continue playing a major role in stable energy supply in the future. We sincerely appreciate your continued understanding and support for our activities and efforts.

Mamoru Muramatsu, President

Message

Striving to be a nuclear power technology platform company

Providing Support for the Fukushima Daiichi Nuclear Power Station

- Providing support for decommissioning the Fukushima Daiichi Nuclear Power Station with Group companies

Operation of Existing Power Stations

- Appropriate responses to safety review at the Tokai No. 2 Power Station and the Tsuruga Power Station Unit 2 to comply with the new regulatory requirements
- Corporate management considering co-existence with local communities

Actively supporting Britain’s Horizon Project

- Support permitting and licensing stage
- Providing advisory services for operation and maintenance management jointly with Exelon Corporation of the United States

Promoting Additional Construction Plan for the Tsuruga Power Station Units 3 and 4

- Initiatives to make the construction plan concrete by taking into account the newest technologies at home and abroad and the central government’s energy policies

Steady implementation of decommissioning and business expansion

- Steady implementation of decommissioning work for the Tokai Power Station and the Tsuruga Power Station Unit 1
- Effective use of the know-how of EnergySolutions of the United States and making efforts towards commercialization in the future
JAPC was established in November 1957 as a private company specializing in nuclear power generation. Since that time, we have been striving as a pioneer in the field through working on various initiatives such as constructing Japan's first nuclear power plant for commercial operation and constructing and operating various types of nuclear power plants that lead Japan's nuclear power generation, as well as nuclear power plant decommissioning and involvement in international projects.
“Safety First” is Our Top Priority for Operating Existing Power Plants.

Operation of existing power plants

Tokai No. 2 Power Station

Japan’s first 1,000MW class large-scale nuclear power plant

- Electric power output: 1,100,000 kW
- Reactor type: Boiling water reactor (BWR)
- Fuel: Low enriched uranium (approx. 132 tons)

Start of commercial operation: November 28, 1976
* Application submitted to be reviewed for compliance with the new regulatory requirements: May 20, 2014
* Application for Permission to Extend the Operating Period: November 24, 2017

At the Tokai No. 2 Power Station, we increased the height of the protective walls around the area of seawater pumps to cool the emergency power source from 4.91 meters to 6.11 meters as part of our voluntary efforts to reinforce measures to cope with tsunami based on a tsunami disaster appraisal announced by the Ibaraki prefectural government in 2007. When the Great East Japan Earthquake occurred, a tsunami about 5.4 meters high hit this region. Despite the disaster, we were able to secure a power source to cool the nuclear reactor, since this precaution measure was successful.

New Regulatory Requirements

- Responses to intentional aircraft crash
- Measures to suppress radioactive material dispersion
- Measures to prevent containment vessel failure
- Measures to prevent core damage (assuming multiple failures)
- Consideration of internal flooding (new)
- Consideration of natural phenomena (volcanic eruptions, tsunamis, and forest fires added)
- Fire protection
- Reliability of power supplies
- Functions of other structures, systems, and components
- Seismic and tsunami-resistance

Reinforced requirements or new requirements

Seismic and tsunami-resistance

Operational-monitoring and maintenance

We monitor equipment and regularly check performance around the clock to help maintain safety at nuclear power plants. We have also established quality management system (QMS) regarding safety activities at nuclear power plants to conduct, evaluate, and improve quality assurance activities.

Training to cope with emergencies

We regularly conduct training to prepare for any emergency such as losing all power sources caused by an earthquake and tsunami to quickly and properly cope with the situation under any circumstances, even if at night or on weekends and holidays.

Examples of Implemented Measures

- Vehicles with large capacity pumps
- Facility to prevent dispersal into the ocean
- Mobile water pumping equipment
- Filtered ventilation system (Tokai)
- Hydrogen recombiner (Tsuruga)
- Power-supply vehicle (high voltage, low voltage)
- Permanent high voltage power supply system (Tokai)
- Air-cooled emergency generator (Tsuruga)
- Water-tight door
- Flood protection barrier
- Volcanic eruption (removal of volcanic ash)
- Forest fire (firebreak)
- Volcanic eruption (removal of volcanic ash)
- Flood protection barrier
- Water-tight door
- Safety improvement measures for slopes (anchor bolts) (Tsuruga)

Prevention of flooding caused by tsunami at facilities that are important for safety (water-tight door: open)

Diversification of methods for cooling nuclear reactors and spent fuel pools (vehicles with large capacity pumps)

Multiplexing and diversifying power sources to prevent power loss (left: air-cooled emergency generator, right: low-voltage power-supply vehicle)

Initiatives to Further Improve Safety at Nuclear Power Plants

- Initiatives for improving safety at nuclear power plants
- Measures for promoting total safety

- Taking a lesson from the accident at the Fukushima Daiichi Nuclear Power Station, we have firmly decided not to allow any similar accident to reoccur and voluntarily and regularly made efforts to improve safety measures by putting the highest priority on risk management of nuclear power.

- We actively host briefings for residents of local communities and visit them to engage in dialogue with local residents to explain about nuclear power plants. We put great importance on our mutual communication with local residents.

Tsuruga Power Station Unit 2

Japan’s advanced standard light water reactor built using technology incorporating Japan’s first prestressed concrete containment vessel (PCCV)

- Electric power output: 1,160,000 kW
- Reactor type: Pressurized water reactor (PWR)
- Fuel: Low enriched uranium (approx. 89 tons)

Start of commercial operation: February 17, 1987
* Application submitted to be reviewed for compliance with the new regulatory requirements: November 5, 2015

We engage in dialogue with local residents to explain about nuclear power plants (Tsuruga area).

*QMS: Quality Management System

Compiled based on the Nuclear Regulation Authority’s data (July 3, 2013)

Response to new regulatory requirements

Taking a lesson from the accident at the Fukushima Daiichi Nuclear Power Station, the regulatory requirements for nuclear power stations were reviewed, and new regulatory requirements came into effect in July 2013. The new regulatory requirements are much stricter than previously with regard to such matters as assessment of earthquakes, tsunami sizes, reliability of power supplies and preparation for natural disasters caused by tornadoes and volcanic eruptions.

The new regulatory requirements also require new considerations including taking varied and multiple measures to cope with severe accidents that may be caused by more serious disasters than expected by the standards as well as with aircraft crashes caused by terrorism.
Maintaining Japan’s nuclear power technologies and human resources

JAPC is currently carrying out a plan for construction of the Tsuruga Power Station Units 3 and 4, advanced pressurized water reactors (APWR), in Tsuruga City, Fukui Prefecture.

This plan is indispensable for Japan, which has very few energy resources, to secure a certain scale of nuclear power generation for the future, guaranteeing stable supply of power, environmental conservation and good economic balance. The project is also very important to ensure safety and maintain technologies and human resources in the field.

We will continue actively introducing the latest technologies available at home and abroad and the know-how obtainable as a result of the accident at the Fukushima Daiichi Nuclear Power Station. We will also strive to carry out the construction plan as early as possible in line with the central government’s energy policies.

Stabilizing the Fukushima Daiichi Nuclear Power Station

It is crucial that the Fukushima Daiichi Nuclear Power Station be stabilized for our country to continue using nuclear power. The JAPC Group has been involved in decommissioning the station by making use of the knowledge we have acquired through our long-standing commitment to the nuclear power business.

Pursuant to a collaboration agreement signed with Tokyo Electric Power Company Holdings, Inc., in March 2015, we have loaned and dispatched workers to inspect equipment at the power station. We also established Fukushima Office in March 2016 and started operating and managing a waste incinerating system. In this way, JAPC is steadily promoting commercial applications of our services.

JAPC started decommissioning the Tokai Power Station, which was Japan’s first commercial nuclear power plant, in December 2001 and the Tsuruga Power Station Unit 1 in May 2017.

At the Tokai Power Station, we have been working toward burying extremely low-level radioactive waste (L3) in a lot owned by the company. The waste is part of the low-level radioactive waste generated as a result of dismantling the power plant. The decommissioning work is the first of its kind in Japan for a commercial nuclear power plant.

JAPC entered into an agreement with EnergySolutions, a U.S. decommissioning company, in April 2016 for JAPC to obtain the EnergySolutions’ decommissioning know-how and use it in decommissioning the Tsuruga Power Station Unit 1. Going forward, we will use the know-how for decommissioning the Tsuruga Power Station Unit 1 and also consider commercializing it in the future.

JAPC signed a collaboration agreement with Hitachi, Ltd. and Horizon Nuclear Power Ltd., a Hitachi subsidiary in the UK, in July 2016 to support Horizon’s proposed project in the stage of licensing for constructing a new nuclear power plant in Britain.

We also established JExel Nuclear Company, a joint venture with Exelon Corporation of the United States, in April 2017 to provide advisory services for operations and maintenance management of this project.

We will expand overseas business through support for this project.

JAPC Undertakes Various Initiatives as a Nuclear Power Pioneer

Providing Support for the Fukushima Daiichi Nuclear Power Station

Steady implementation of decommissioning and business expansion

Actively supporting Britain’s Horizon Project

Promoting Additional Construction Plan for the Tsuruga Power Station Units 3 and 4

For safe and efficient decommissioning

Expanding overseas business

Maintaining Japan’s nuclear power technologies and human resources

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We will expand overseas business through support for this project.
JAPC established the Tokai Training Center and the Tsuruga Training Center to train human resources for safety-first operation of nuclear power stations. We provide education and training for operational management and maintenance management. Our training centers are equipped with full scope simulators to provide training with a real scale main control room of the nuclear power stations as well as various systems for maintenance training. Operators and maintenance personnel can systematically acquire the knowledge and skills required to operate and maintain nuclear power plants in accordance with the safety-first policy.

Additionally, these training centers provide training for engineers and students in Japan and trainees from overseas to provide basic knowledge on nuclear power generation and skills to manage power plants and decommissioning work based on their needs.

JAPC’s Mihama Nuclear Emergency Assistance Center in Mihama Town, Fukui Prefecture, was established to cope with serious accidents at nuclear power plants in Japan through a diversified approach and high-level disaster measures. The Center has remote control heavy machinery, robots and a helicopter as well as trucks to deliver necessary equipment and materials. The center conducts training for disaster response personnel of each nuclear power plant operator using these equipment and materials.

In Japan, which has few energy resources, the nuclear fuel cycle will be implemented to reprocess and reuse spent fuel generated at nuclear power plants. Spent fuel is stored on the premises of nuclear power plants until it is reprocessed. However, the amount of spent fuel is expected to increase over the long term, and intermediate storage facilities are necessary to store and manage spent fuel outside in addition to storing the spent fuel at nuclear power plants.

For this purpose, JAPC made joint contribution with Tokyo Electric Power Company Holdings, Inc. to establish Recyclable-Fuel Storage Company, Japan’s first intermediate storage facility for spent fuel, in November 2005 in Mutsu City, Aomori Prefecture, to safely store and manage spent fuel until it is reprocessed.

The nuclear fuel cycle is very important for efficient use of uranium resources as well as reduction of waste and its hazards. We also believe the fast reactor cycle is one of the promising options that can address the issue of limited resources in the future from the viewpoint of securing energy over the long term.

A decision was made to decommission Monju, the prototype of fast breeder reactor of the Japan Atomic Energy Agency (JAEA), at a ministerial-level meeting on nuclear power held on December 21, 2016. However, a policy on developing fast breeder reactors adopted on that day reiterates the importance of developing fast reactors.

JAPC has been developing technologies intended to construct a highly economical system that can make fast breeder reactors compatible with nuclear fuel cycle. To this end, we have provided support for JAEA, which has been developing fast breeder reactors using international collaboration, as a point of contact for power companies and Electric Power Development Co., Ltd.

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