

■ Address, Telephone

**Tokai Head Office**

Tokai Power Station Tokai II Power Station	1-1 Shirakata, Tokai-mura, Naka-gun, Ibaraki 319-1198, Japan	Tel. +81-29-282-1211
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Community Relations & Co-operation Dep. Ibaraki Office	3-4-1 Tokai, Tokai-mura, Naka-gun, Ibaraki 319-1117, Japan 978-25 Kasahara-machi, Mito-shi, Ibaraki 310-0852, Japan	Tel. +81-29-287-1250 Tel. +81-29-301-1511
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Tokai Training Center	3-4-1 Tokai, Tokai-mura, Naka-gun, Ibaraki 319-1117, Japan	Tel. +81-29-287-0111
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**Tsuruga Head Office**

Tsuruga Power Station	1 Myojin-cho, Tsuruga-shi, Fukui 914-8555, Japan	Tel. +81-770-26-1111
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Tsuruga Plant Construction Arrangements Office	1 Myojin-cho, Tsuruga-shi, Fukui 914-8555, Japan	Tel. +81-770-26-8051
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Tsuruga Training Center	165-9-6 Kutsumi, Tsuruga-shi, Fukui 914-0823, Japan	Tel. +81-770-21-9700
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Mihama Nuclear Emergency Assistance Center	38-36 Kugushi, Mihama-cho, Mikata-gun, Fukui 919-1123, Japan	Tel. +81-770-36-1021
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Nuclear Safety Promotion Dep.	Tel. +81-3-6371-7880	Decommissioning Project Dep.	Tel. +81-3-6371-7700
Public Relations Dep.	Tel. +81-3-6371-7300	Projects Development Dep.	Tel. +81-3-6371-7800
Corporate Planning Dep.	Tel. +81-3-6371-7350	Corporate Audit's Office	Tel. +81-3-6371-7050

■ JAPC website

<http://www.japc.co.jp/english/index.html>



■ Twitter

account: @official\_JAPC



**JAPC**  
CORPORATE PROFILE





*Mamoru Muramatsu,  
President*

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 plant, 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. We believe 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.

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.

### ◆ Providing Support for the Fukushima Daiichi Nuclear Power Station

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

### ◆ 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

### ◆ Operation of Existing Power Stations

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

### ◆ 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



## Corporate Overview

### Striving at the Forefront as a Pioneer in Nuclear Power Generation

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.



**The first decommissioning of a commercial nuclear power plant in Japan**  
Tokai Power Station

Commercial operation terminated: March 31, 1998  
Decommissioning started: December 4, 2001



**Japan's first commercial light water reactor**  
Tsuruga Power Station Unit 1 (Boiling water reactor)

Start of commercial operation: March 14, 1970

On its initial day, electricity generated by the Tsuruga Power Station Unit 1, Japan's first commercial light water reactor, was sent to the World Expo in Osaka, which opened on the same day.

Electric power output: 357,000 kW  
Reactor type: Boiling water reactor (BWR)  
Fuel: Low enriched uranium (approx. 52 tons)

Inaugural General Meeting (The Industry Club of Japan)



**Establishment of the Japan Atomic Power Company**

November 1, 1957

1957



**Agreement with EnergySolutions in the United States regarding decommissioning work**

April 20, 2016



**Establishment of the Nuclear Emergency Assistance Center solely in Japan**

December 17, 2016  
Start of full operation of Mihama Nuclear Emergency Assistance Center

## Next Stage

**Conclusion of a feasibility study contract for constructing Japan's first overseas nuclear power plant**

September 28, 2011  
Feasibility study contract signed with Vietnam Electricity (EVN)

2004

2001

1987

1978

1970

1966



**Japan's first advanced standard light water reactor**  
Tsuruga Power Station Unit 2 (Pressurized water reactor)

Start of commercial operation: February 17, 1987

Conceptual drawing of Tsuruga Power Station Units 3 and 4



**Japan's first advanced pressurized water reactors**  
Tsuruga Power Station Units 3 and 4

Application for reactor installation license: March 30, 2004  
Construction preparation work started: July 2, 2004



**Japan's first commercial nuclear power plant**  
Tokai Power Station (Gas-cooled nuclear reactor)

Start of commercial operation: July 25, 1966

Electric power output: 166,000 kW  
Reactor type: Graphite-moderated, carbon dioxide gas-cooled reactor (GCR)  
Fuel: Natural uranium (approx. 187 tons)



Achieved criticality: May 4, 1965



**Japan's first large-scale nuclear power plant**  
Tokai No. 2 Power Station (Boiling water reactor)

Start of commercial operation: November 28, 1978

2015

**Decommissioning of Tsuruga Power Station Unit 1**

Operation terminated: April 27, 2015  
Decommissioning started: May 15, 2017

2018

**The Tokai No.2 Power Station**  
Acquisition of permission about conformity of new regulatory requirements and extension of the operating period

Permission for change in reactor installation: September 26, 2018  
Approval of plan for construction works: October 18, 2018  
Approval of extension of the operating period: November 7, 2018

2016



# “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, 1978  
 Power supplied to: Tohoku Electric Power Co., Inc., Tokyo Electric Power Company Holdings, Inc.

- \* Permission for change in reactor installation: September 26, 2018
- \* Approval of plan for construction works: October 18, 2018
- \* Approval of extension of the operating period: November 7, 2018

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.

\* Map shows coastal areas in the prefecture that may be flooded by a tsunami

### Tsuruga Power Station Unit 2

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

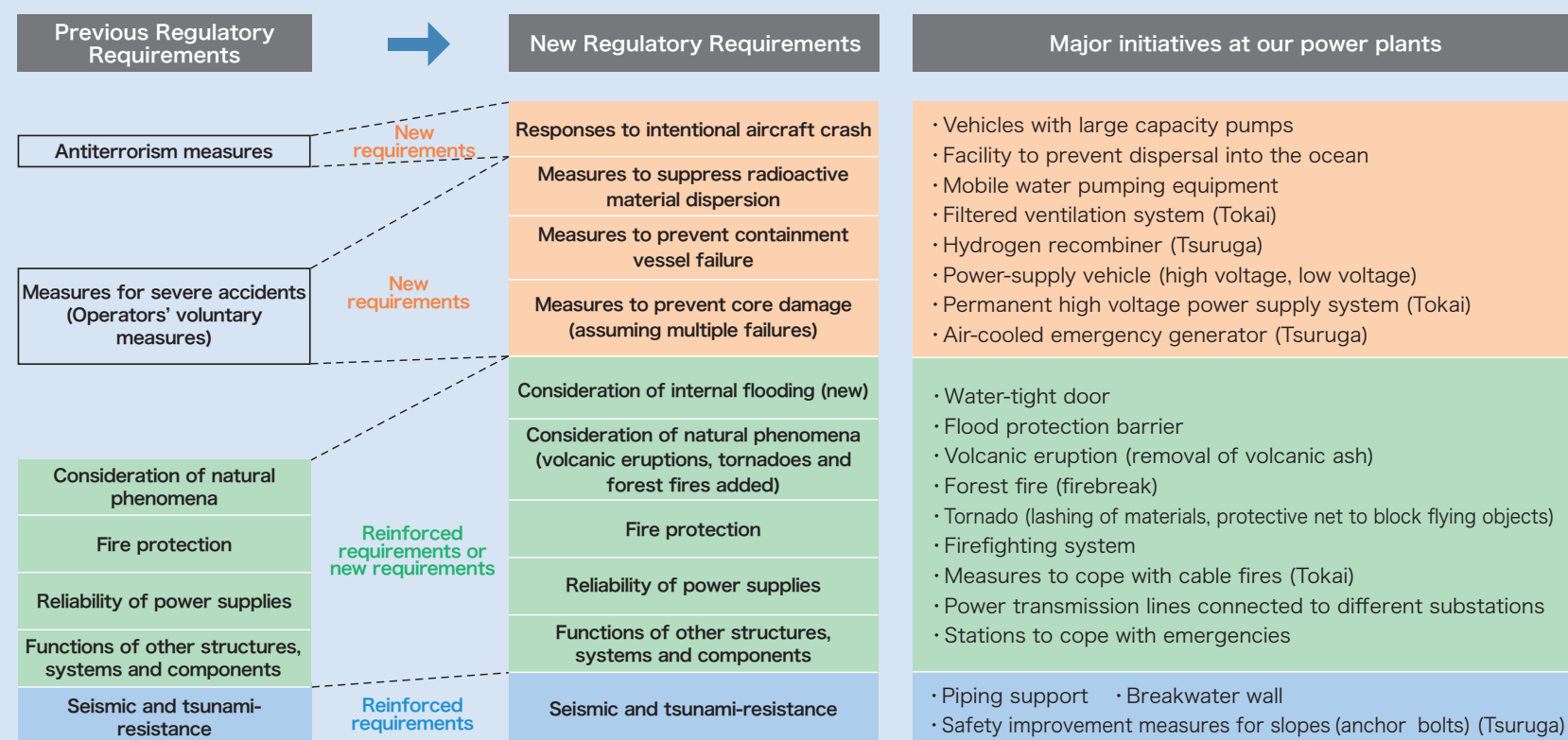


Electric power output: 1,160,000 kW  
 Reactor type: Pressurized water reactor (PWR)  
 Fuel: Low enriched uranium (approx. 89 tons)  
 Start of commercial operation: February 17, 1987  
 Power supplied to: Chubu Electric Power Co., Inc., Hokuriku Electric Power Company, Kansai Electric Power Co., Inc.

- \* Application submitted to be reviewed for compliance with the new regulatory requirements: November 5, 2015

## 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.



Compiled based on The Nuclear Regulation Authority's data (July 3, 2013)

### Examples of Implemented Measures



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)

### Operational-monitoring and maintenance



Check of equipment by pointing at main control room

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.

※QMS:(Quality Management System)

### Training to cope with emergencies



Nighttime training on routing a cable from a cable-equipped vehicle

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

### Initiatives to Further Improve Safety at Nuclear Power Plants



Meeting 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.

### Corporate management considering co-existence with local communities



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

We actively host briefings for residents of local communities and visit them to engage in dialogue and ask for their understanding of our business and explain the status of nuclear power plants. We put great importance on our mutual communication with local residents.



# JAPC Undertakes Various Initiatives as a Nuclear Power Pioneer

## ◆ Providing Support for the Fukushima Daiichi Nuclear Power Station



Operation and management of a miscellaneous solid waste incineration system (Photo shows the control room)

## 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.



Equipment inspection at the Fukushima Daiichi Nuclear Power Station

## ◆ Steady implementation of decommissioning and business expansion



Removal of low pressure turbine at the Tokai Power Station

## For safe and efficient decommissioning

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.



Decontamination work in a drainage pit at the Tsuruga Power Station Unit 1

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



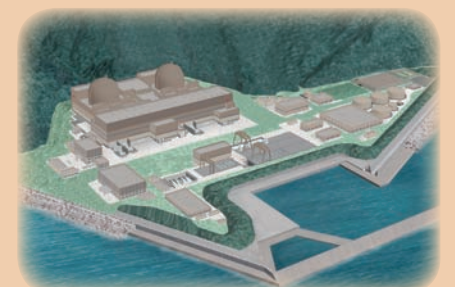
A panoramic view of the planned site of the Tsuruga Power Station Units 3 and 4

## 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.



Conceptual drawing of Tsuruga Power Station Units 3 and 4



# JAPC Undertakes Various Initiatives as a Nuclear Power Pioneer

## Implementation of the nuclear fuel cycle

### Support for research and development of fast breeder reactors (FBR)



Conceptual drawing of a fast breeder reactor plant (commercial reactor)  
(Based on a research on fast breeder reactors jointly conducted by nine power companies, Electric Power Development Co., Ltd., and JAPC)

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.

### Promotion of intermediate storage of spent fuel



A building for spent fuel storage  
Courtesy of Recyclable-Fuel Storage Company

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.



[Reference photo] Dry casks at the Tokai No. 2 Power Station

## Tokai Training Center and Tsuruga Training Center

### Promotion of human resources development on nuclear power

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.



Training on a full-scope simulator



Training using an educational simulator by making nuclear reactor operations visible

## Mihama Nuclear Emergency Assistance Center

### Continuously improving our ability to cope with nuclear disasters

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.

If a serious accident occurs at a nuclear power plant, the center quickly sends necessary equipment and materials as well as personnel to the plant operator. The center collaborates with the operator to cope with the nuclear disaster.



Training for operating a radio-controlled helicopter



Remotely controlled small-sized robot