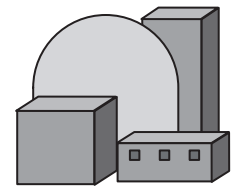


# Decommissioning Process of Nuclear Power Plant

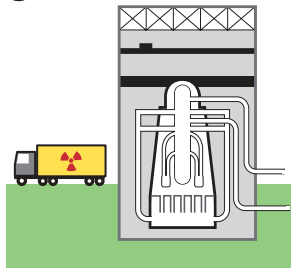


Termination of Operation



## ● Standard stages of decommissioning (Note:) Boiling water reactor (BWR)

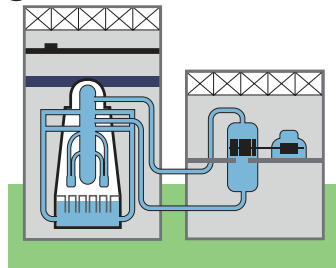
①



### Unloading of spent fuel

Spent and unused fuel is carried out to reprocessing plants and storage facilities, where it is subject to careful controls and processing.

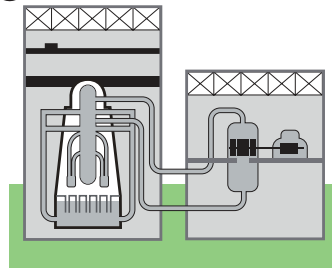
②



### System decontamination - clean-up

Chemicals are used to remove as much of the radioactive substances remaining in the facility's piping and container vessels as possible in order to facilitate subsequent dismantling work.

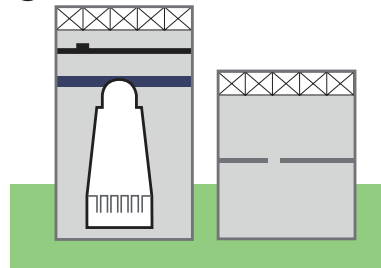
③



### Safe storage - standby

The facility is put into safe storage under proper management as long as required and then further dismantling awaits decay of radioactivity to facilitate that work.

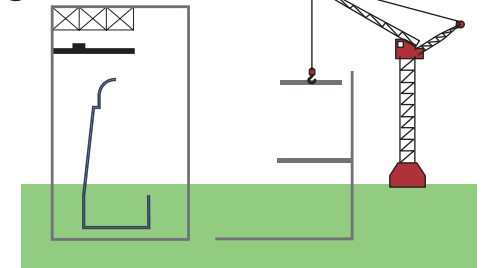
④



### Dismantling (1) - internal demolition

To avoid release of radioactive substances to the outside, the equipment inside the building, such as piping and vessels, are first dismantled.

⑤



### Dismantling (2) - building demolition

After confirming that the targeted radioactive substances from inside the building have in fact been removed, the building is dismantled in the same way as a normal building.



### Site Use

The site can be used for a variety of purposes once it goes through legal procedures and its safety is confirmed. Alternatively, one current proposal is for the site to continue to be used effectively as a nuclear power site through cooperation with the local community.

(Note) The operator determines the specific method according to the conditions, and the Nuclear Regulatory Commission confirms the safety.

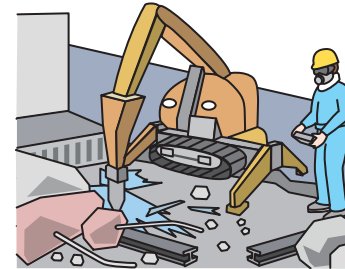
# Quantity and Types of Waste Generated During Decommissioning

The total amount of waste generated in decommissioning a 1.1 million kW class boiling water reactor (BWR) is approx. 536,000 tons.

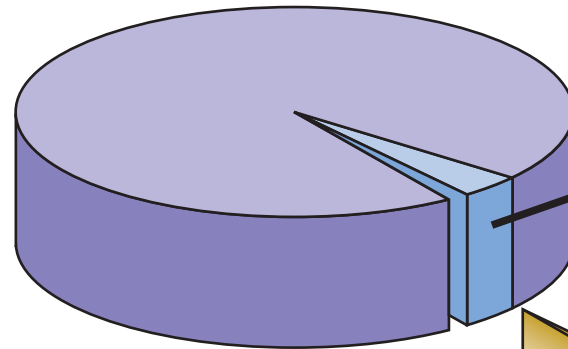
Waste that does not emit radioactivity

**Approx. 93%**

(Mostly waste concrete: approx. 495,000 tons)



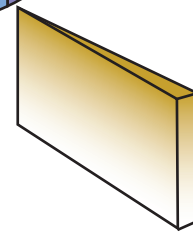
Building concrete, glass, metal, etc.



Materials below clearance level

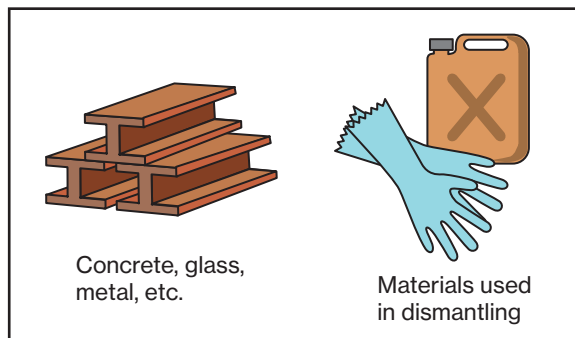
**Approx. 5%**

(Metal and concrete waste: approx. 28,000 tons)



Low-level radioactive waste **Approx. 2%**

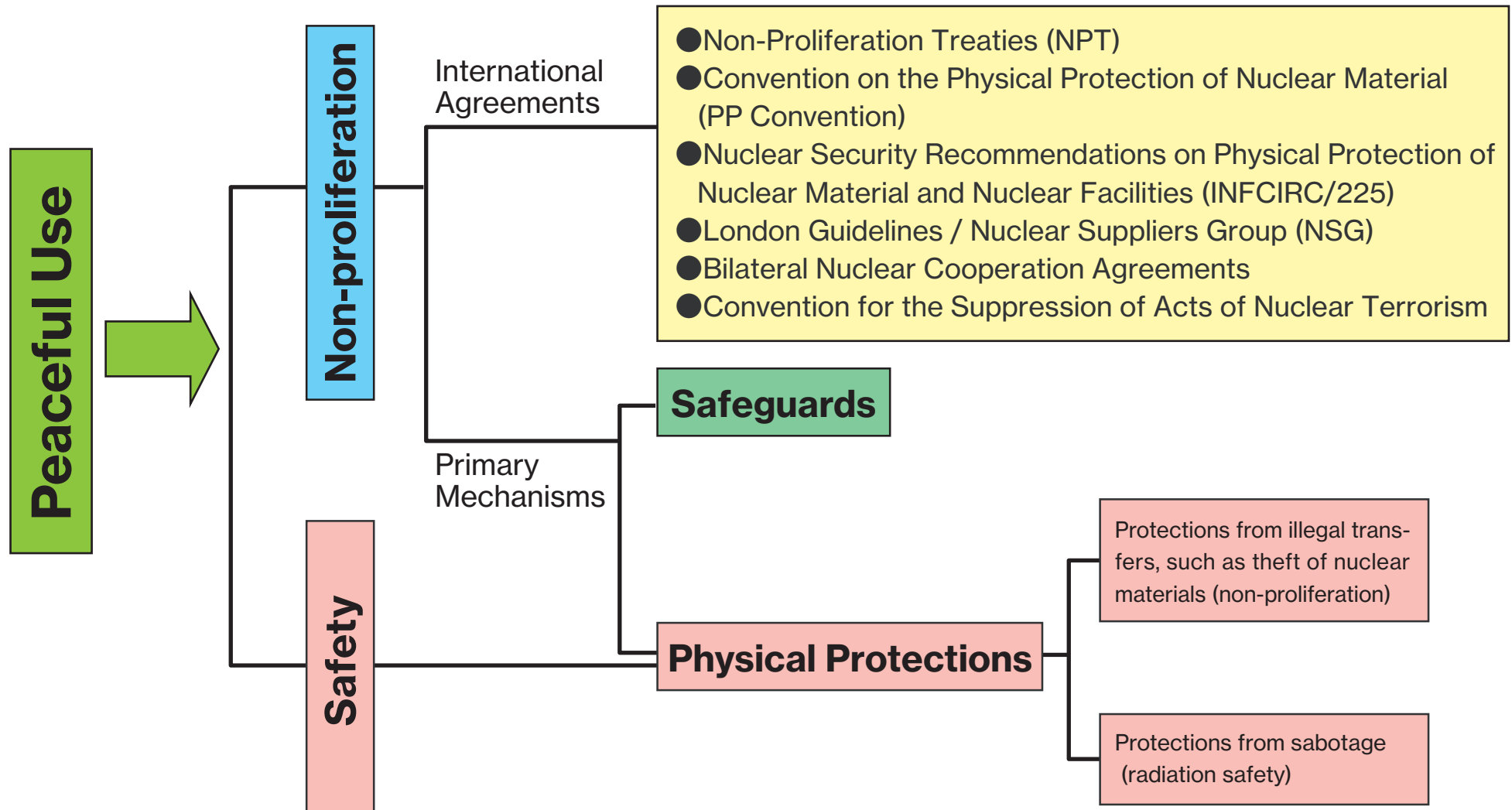
(Mostly metal waste: approx. 13,000 tons)



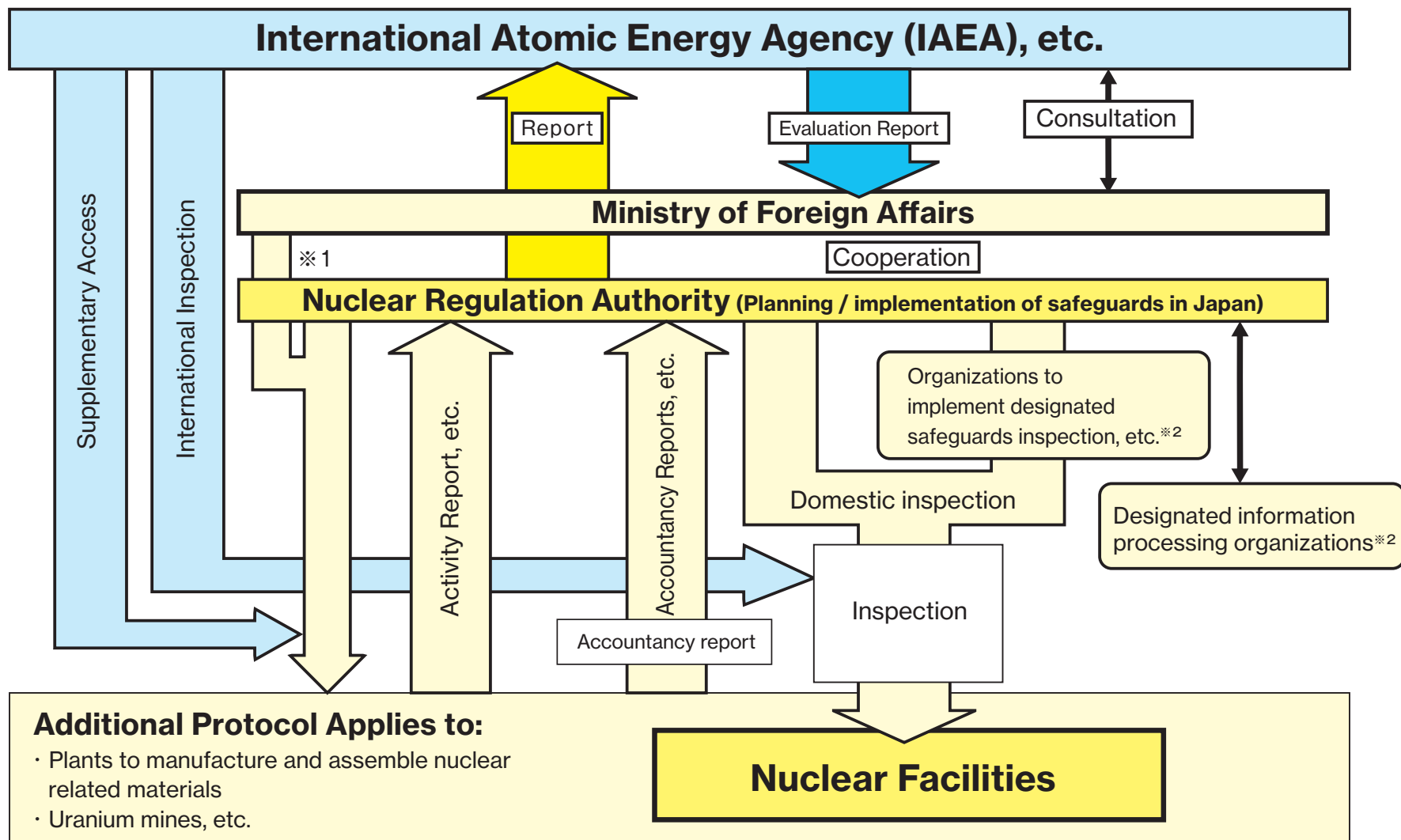
Concrete, glass, metal, etc.

Materials used in dismantling

# The Peaceful Use of Nuclear Energy and Protection of Nuclear Materials



# Safeguard System in Japan



※1 Except supplemental access, such as when arises during a normal inspection

※2 The Nuclear Material Control Center is specified according to the Nuclear Reactor Regulation Law as a Designated Organization for Implementing Safeguards and Inspections as well as a Designated Information Processing Organization.

# Parties to the NPT and IAEA Safeguard Agreements

## Parties to the NPT (191 Countries)

(As of February, 2015)

## Parties to the Comprehensive Safeguards Agreements (174 Countries)

(As of May 21, 2014)

<b>East Asia (4)</b> ★ Korea North Korea ★ Japan ★ Mongolia	<b>Middle East &amp; Southeast Asia (18)</b> ★ Afghanistan ★ United Arab Emirates ★ Yemen ★ Iraq ★ Iran ● ★ Oman ★ Qatar ★ Kuwait ★ Saudi Arabia ★ Syria ★ Sri Lanka ★ Nepal ★ Bahrain ★ Bangladesh Bhutan Maldives ★ Jordan ★ Lebanon <b>Eastern Europe (27)</b> ★ Azerbaijan ★ Albania ★ Armenia ★ Ukraine ★ Uzbekistan ★ Estonia ★ Kazakhstan ★ Kyrgyzstan ★ Georgia ★ Croatia ★ Slovakia ★ Slovenia	★ Serbia ● ★ Tajikistan ★ Czech Republic Turkmenistan ★ Hungary ★ Bulgaria ★ Belarus ● ★ Poland ★ Bosnia-Herzegovina ★ Macedonia ★ Moldova ★ Montenegro ★ Latvia ★ Lithuania ★ Romania <b>Western Europe (24)</b> ★ Iceland ★ Ireland Andorra ★ Italy ★ Austria ★ Netherlands ★ Greece ★ Cyprus ★ San Marino ★ Switzerland ★ Sweden ★ Spain ★ Denmark ★ Germany ★ Turkey ★ Norway	★ Vatican ★ Finland ★ Belgium ★ Portugal ★ Malta ★ Monaco ★ Liechtenstein ● ★ Luxembourg <b>Africa (44)</b> ★ Algeria ★ Angola ★ Uganda ★ Egypt ★ Ethiopia ★ Ghana ★ Cameroon ● ★ Gabon Gambia ★ Kenya ★ Cote d'Ivoire ● Comoros ★ Republic of Congo ★ Democratic Republic of Congo ★ Zambia ● ★ Sierra Leone ★ Djibouti ★ Zimbabwe ★ Sudan ★ Swaziland ★ Seychelles ★ Senegal ● ★ Tanzania	★ Chad ★ Central Africa ★ Tunisia ● ★ Togo ★ Nigeria ★ Namibia ★ Niger ★ Burkina Faso ★ Burundi ★ Botswana ★ Madagascar ★ Malawi ★ Mali ★ South Africa ★ Mauritius ★ Mauritania ★ Mozambique ★ Morocco ★ Libya ★ Rwanda ★ Lesotho <b>North &amp; South America (34)</b> ★ Argentina Antigua & Barbados ★ Uruguay ★ Ecuador ★ El Salvador ★ Guyana ★ Canada ★ Guatemala Grenada ★ Cuba	★ Costa Rica ★ Columbia ★ Jamaica Suriname St. Kitts and Nevis Saint Vincent and the Grenadines Saint Lucia ★ Chile ★ Dominica ★ Dominican Republic ★ Trinidad and Tobago ★ Nicaragua ★ Haiti ★ Panama ★ Bahamas ★ Paraguay Barbados ★ Brazil ★ Venezuela ★ Belize ★ Peru ★ Bolivia ★ Honduras ● ★ Mexico	<b>Oceania (1)</b> Micronesia <b>Southeast Asia (1)</b> East Timor ● <b>Africa (9)</b> ★ Eritrea Cape Verde ● Guinea ● Guinea-Bissau ● Sao Tome and Principe Equatorial Guinea Somalia ★ Benin ● ★ Liberia	<b>Middle East &amp; South Asia (1)</b> Palestine <b>Voluntary Safeguards Agreement Countries (Nuclear-weapon States)</b> ★ U.S.A. ★ U.K. ★ France ★ Russia ★ China
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★: IAEA Signatories (164 countries)

★: Additional Protocol Parties (126 countries)

●: Parties that Signed but Failed to Ratify the Additional Protocol (15 of the 21 Parties to the Comprehensive Safeguards Agreements)

(IAEA Board)  
 35 Countries (2014-15)

(Other Notes)  
 ·The IAEA concluded a safeguard agreement with Taiwan as well.  
 ·The IAEA concluded an additional protocol with EURATOM.

### Countries with other safeguard agreements

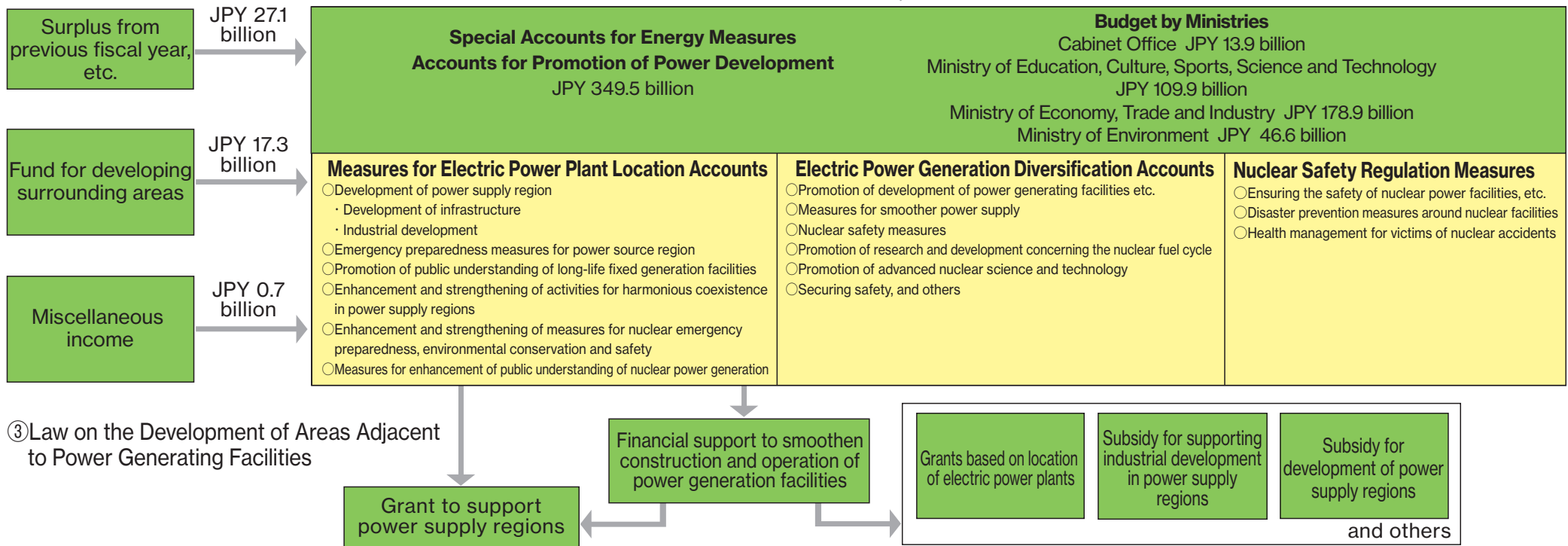
- ★ Israel
- ★ India ●
- ★ Pakistan

# Electric Power Development based on the Three Laws

## ① Law on Tax for Promotion of Electric Power Development

Tax rate  
 Until Sep.2003 JPY 0.445/kWh  
 Oct.2003 - Mar.2005 JPY 0.425/kWh  
 Apr.2005 - Mar.2007 JPY 0.40/kWh  
 Apr.2007 From JPY 0.375/kWh

①, ② and ③ are called “Electric Power Development based on the Three Laws”.



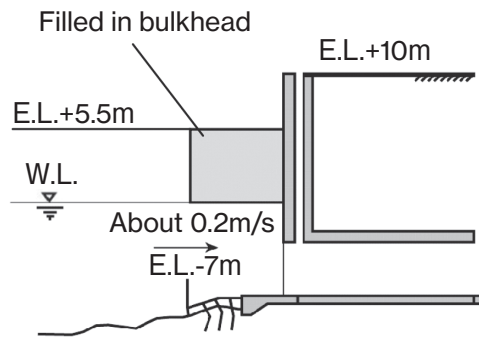
※ “Special Accounts for Promotion of Electric Power Development Acceleration Measures” and “Special Accounts for Petroleum and Sophisticated Structure of Energy Supply and Demand” were merged into “Special Accounts for Energy Measures” in FY2007. Among this, “Accounts for Promotion of Electric Power Development” took over operation of the “Special Account for Promotion of Electric Power Development Acceleration Measures”.

※ Since FY2007, the revenue from “Promotion of Power-resources Development Tax” has transferred to the annual revenue of the general account. The necessary amount has been transferred from the general account to “Special Accounts for Energy Measures” each year.

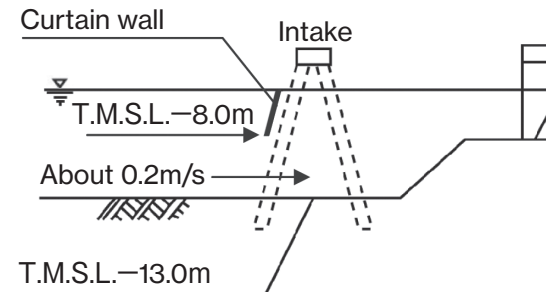
※ In addition, approximately 8.8071 billion yen is set aside as a nuclear damages compensation support account.

※ Revenue of Power-Resources Development Tax is the estimated amount for the 2015 fiscal year.

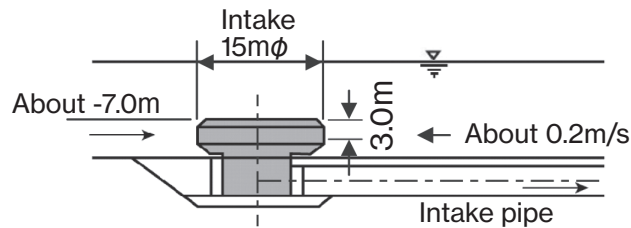
# Overview of Water Intake Systems



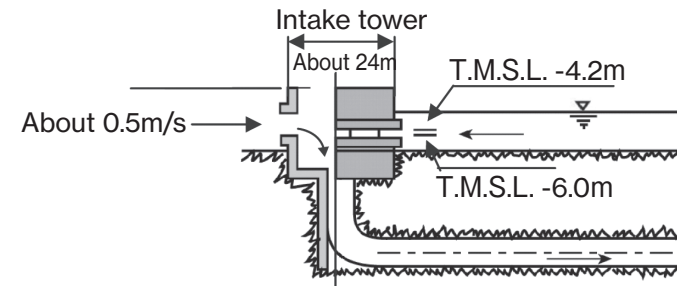
Surface water intake system (Tomari Nuclear Power Station, Units 1, 2)



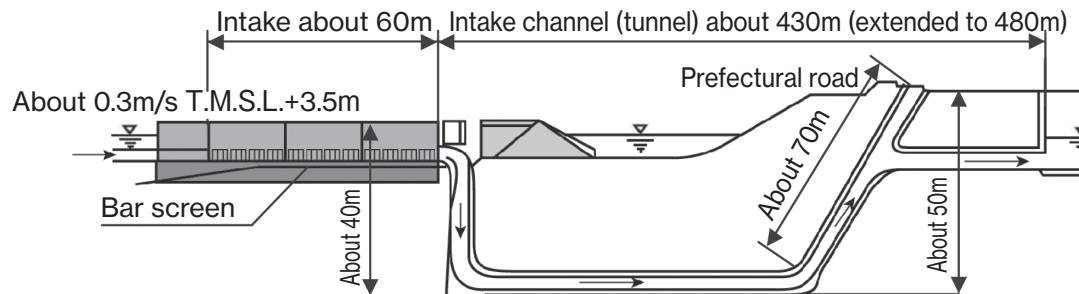
Curtain wall-type deep water intake system (Tomari Nuclear Power Station, Units 1 to 4)



Intake pipe-type deep water intake system (Yanai Power Plant, Units 1, 2)

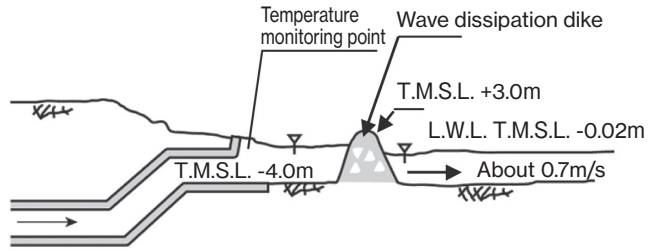


Intake tower-type deep water intake system (Hamaoka Nuclear Power Station, Unit 4)

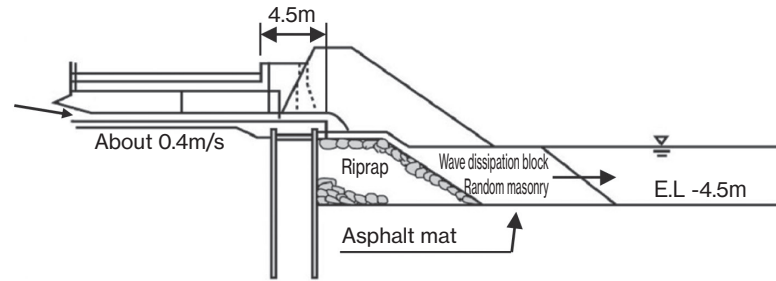


Porous dike-type deep water intake system (Shika Nuclear Power Plant, Unit 1)

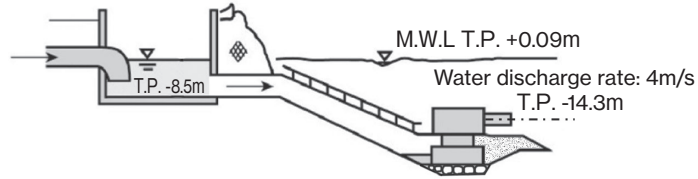
# Overview of Water Discharge Systems



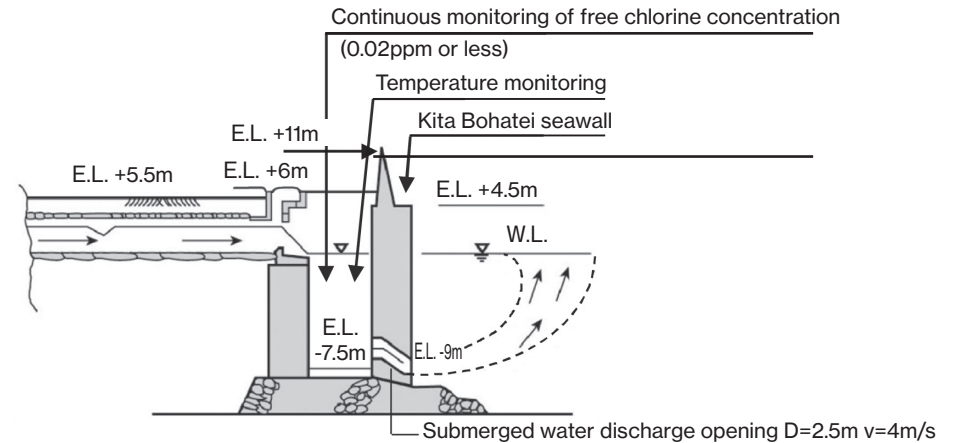
Surface water discharge system  
(Tomari Nuclear Power Station, Units 1-4)



Multi-stage discharge water system  
(Higashi Niigata Thermal Power Plant, Units 1-3)



Drainpipe-type submerged water discharge system  
(Genkai Nuclear Power Plant, Units 3, 4)



Porous dike-type submerged water discharge system  
(Tomari Nuclear Power Station, Units 1, 2)

# Table of Fish Breeders Using Hot Water from Power Plants (Nuclear-Power Related)

Business	Water Intake Source		Main Fish Species
	Power Plant	Capacity (10,000kW)	
Shizuoka Thermal Effluent Utilization Research Center	Chubu Electric Power Co. Hamaoka Nuclear Power Plant	Unit 3--110.0 Unit 4--113.7 Unit 5--126.7	(Hatchlings) Red sea bream, flounder, swimming crab, mud crab, abalone, Japan tiger prawn, grouper, tiger globefish
Ishikawa Prefectural Fisheries Research Center, Production Department Shiga Plant	Hokuriku Electric Power Co. Shika Nuclear Power Plant	Unit 1--54.0 Unit 2--120.6	Abalone, flounder, turban shell
Kansai Electric Power Co., Ltd. Takahama Nuclear Power Plant	Kansai Electric Power Co., Ltd. Takahama Nuclear Power Plant	Units 1,2--82.6 each Units 3,4--87.0 each	Abalone, turban shell

# Changes in Nuclear Fuel Tax Rates

(As of September 2025)

Prefecture	Established		Currently		
	Year Established	Tax Rate	Tax Rate	Valid	Notes
<b>Fukui</b>	1976	5%	18% <sup>*1, 6</sup>	Nov. 2021 to Nov. 2026	9th update
<b>Ibaraki</b> <sup>*4</sup>	1978	5%	18% <sup>*1</sup>	Apr. 2024 to Mar. 2029	9th update
<b>Ehime</b>	1979	5%	18% <sup>*1, 6</sup>	Jan. 2024 to Jan. 2029	9th update
<b>Saga</b>	1979	5%	18% <sup>*1, 6</sup>	Apr. 2024 to Mar. 2029	9th update
<b>Shimane</b>	1980	5%	17% <sup>*2, 6</sup>	Apr. 2025 to Mar. 2030	9th update
<b>Shizuoka</b>	1980	5%	17% <sup>*2</sup>	Apr. 2025 to Mar. 2030	9th update
<b>Kagoshima</b>	1983	7%	18% <sup>*1</sup>	Jul. 2024 to Jul. 2029	9th update
<b>Miyagi</b>	1983	7%	17% <sup>*2, 6</sup>	Jun. 2023 to Jun. 2028	8th update
<b>Niigata</b>	1984	7%	18% <sup>*3</sup>	Nov. 2024 to Nov. 2029	8th update
<b>Hokkaido</b>	1988	7%	17% <sup>*2</sup>	Sep. 2023 to Aug. 2028	7th update
<b>Ishikawa</b>	1992	7%	17% <sup>*2</sup>	Oct. 2022 to Oct. 2027	6th update
<b>Aomori</b> <sup>*5</sup>	2004	10% (Currently 12%)	17% <sup>*2</sup>	Apr. 2024 to Mar. 2029	5th update

\* 1 : The tax rate of 18% breaks down to 8.5% of the cost and 9.5% of the output (the output percentage is a conversion of the tax amount/heat output into a percentage - the notes below also apply this rule).

\* 2 : The tax rate at 17% breaks down to 8.5% of the cost and 8.5% of the output.

\* 3 : The tax rate at 18% breaks down to 4.5% of the cost and 13.5% of the output.

\* 4 : The nuclear fuel taxes for Ibaraki Prefecture have been taxed since April 1999 as a "Nuclear Fuel Handling Tax".

\* 5 : The nuclear fuel taxes for Aomori Prefecture are taxed from April 2004 as a "Nuclear Fuel Materials Handling Tax".

\* 6 : For Fukui Prefecture (from November 2016), Shimane Prefecture (from April 2017), Saga Prefecture (from April 2017), Ehime Prefecture (from August 2017) and Miyagi Prefecture (from March 2020), output tax is levied even during decommissioning.