

RIC 2010
International Cooperation on New Reactors
Japanese Regulatory Inspections
to address the challenge of
Nuclear Globalization

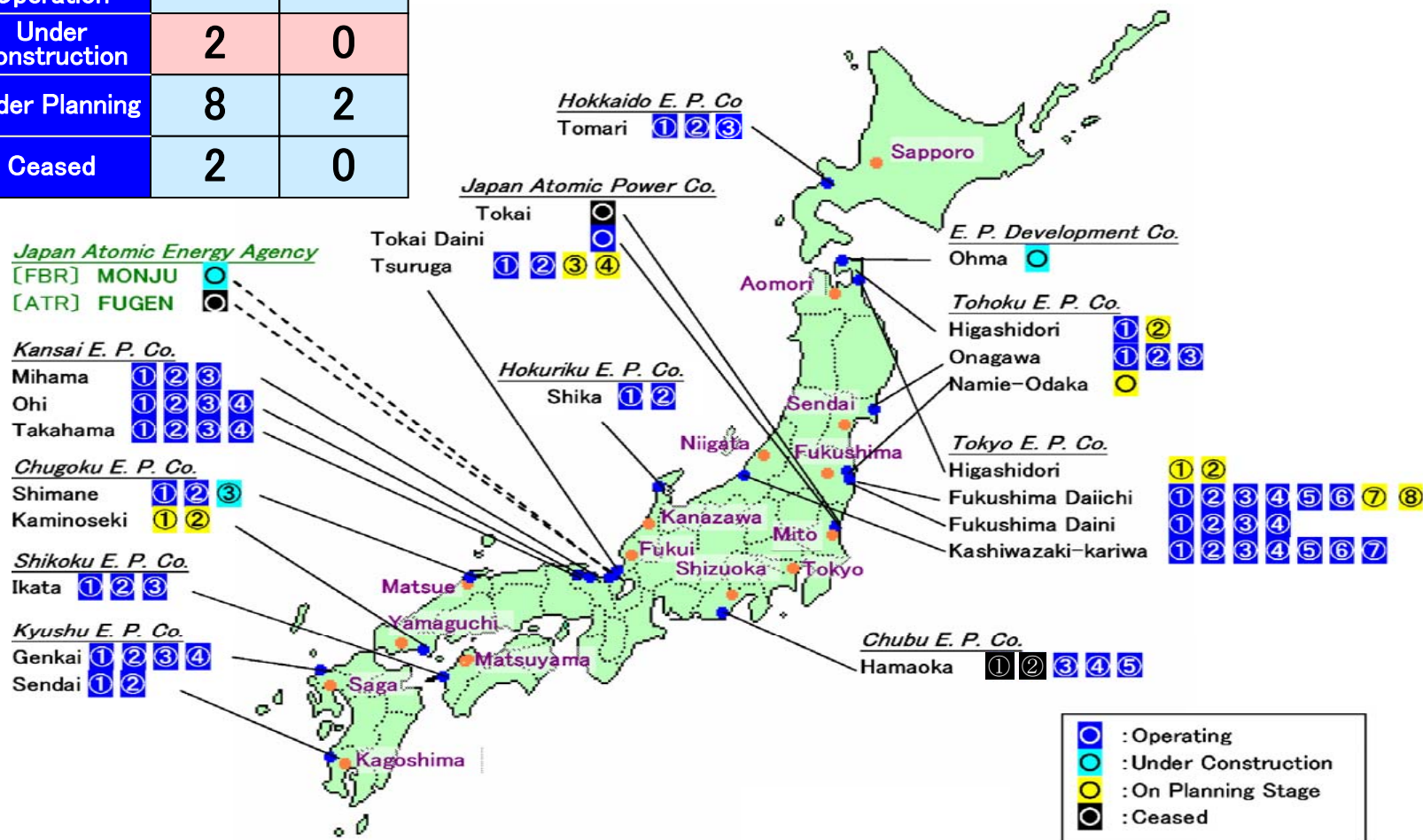
March 11, 2010
Atsuhiko Kosaka
Nuclear Industrial Safety Agency (NISA)
JAPAN

CONTENTS

- 1. The status of Japanese NPP construction**
- 2. Overview of Japanese Nuclear Safety Regulation for NPPs**
- 3. Japanese Regulatory Inspections**
- 4. International Cooperative Activities**
- 5. Items for Further Study**
- 6. Conclusion**

1. The status of Japanese NPP construction

| | BWR | PWR |
|--------------------|-----|-----|
| In Operation | 30 | 24 |
| Under Construction | 2 | 0 |
| Under Planning | 8 | 2 |
| Ceased | 2 | 0 |



Shimane 3 NPP (Under construction)



- Utility : The Chugoku Electric Power Company
- Plant : Shimane NO.3, ABWR 1,373MWe
- Construction start : Dec. 2005
- Turn over (Scheduled): Dec. 2011
- Construction Stage : About 80%

Ohma NPP (Under construction)



- Utility: The Electric Power Development Company
- Plant: Ohma NO.1, ABWR 1,383MWe
- Construction start : May. 2008
- Turn over (Scheduled): Nov. 2014
- Construction Progress : About 5%

2. Overview of Japanese Nuclear Safety Regulation for NPPs

2.1 The Japanese Regulatory Framework

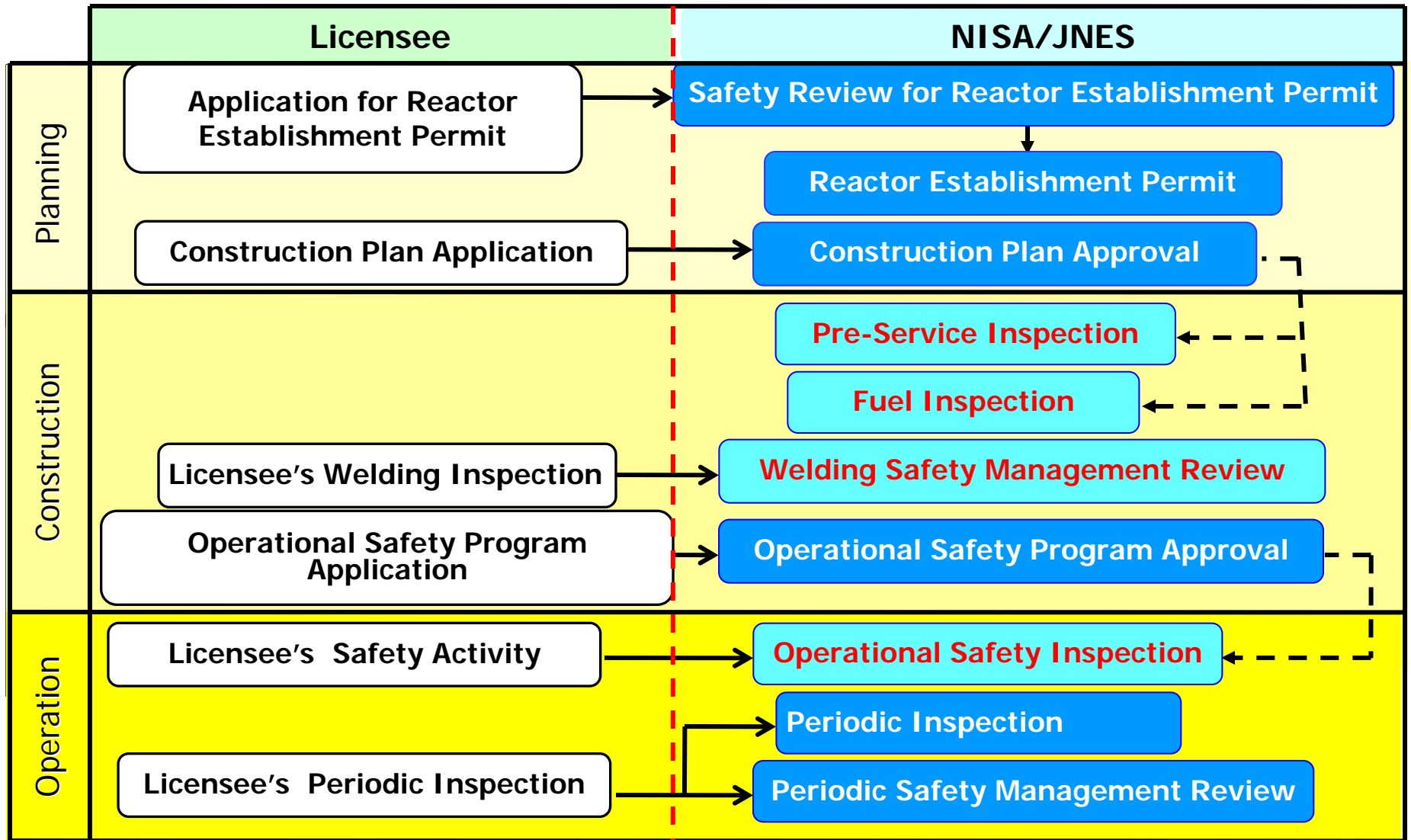
➤ Reactor Regulation Law

The law for the regulatory framework of Reactors, Nuclear Fuel/Source Materials.

➤ Electricity Utilities Industry Law

Based on this Law, all the regulations on NPP components are conducted through the electricity utilities in Japan.

2.2 Regulations for NPPs Nuclear Safety



3. Japanese Regulatory Inspections

The following **multiple inspection methods** are combined for conducting **the indirect regulatory inspection on the vendors' activities through utilities.**

- **Welding Safety Management Review**
- **Pre-service Inspection**
- **Fuel Inspection**
- **Operational Safety Inspection**

3.1 Welding Safety Management Review

- **The licensees have the prime responsibility for safety and conduct inspections on components during manufacturing.**
- **The regulator closely oversees the licensees' inspection activities on vendors' welding, because welding is of prime importance for the safety of components.**
- **The licensees' welding inspection program includes the QA program.**

3.2 Regulatory Pre-service Inspection

- This inspection has to **be done at each construction stage** to ensure the compliance with the approved Construction Plan .
- For components (there are **more than 1,000 components in one NPP**), this inspection is conducted at vendors' shops and can be regarded as the vendor inspection.
- Reactor systems function is inspected before the NPP is put into operation.

3.3 Fuel Inspection

- This inspection is conducted to ensure that **fuel assemblies are manufactured in accordance with the design approved by the regulator.**
- The inspection is performed both at the vendors' shop and at the NPPs.

3.4 Operational Safety Inspection

- This inspection is conducted to confirm that **the management of plant operation and maintenance are** in accordance with the approved operational safety program.
- This inspection confirms **the licensees' QA system including procurement control** for modification.

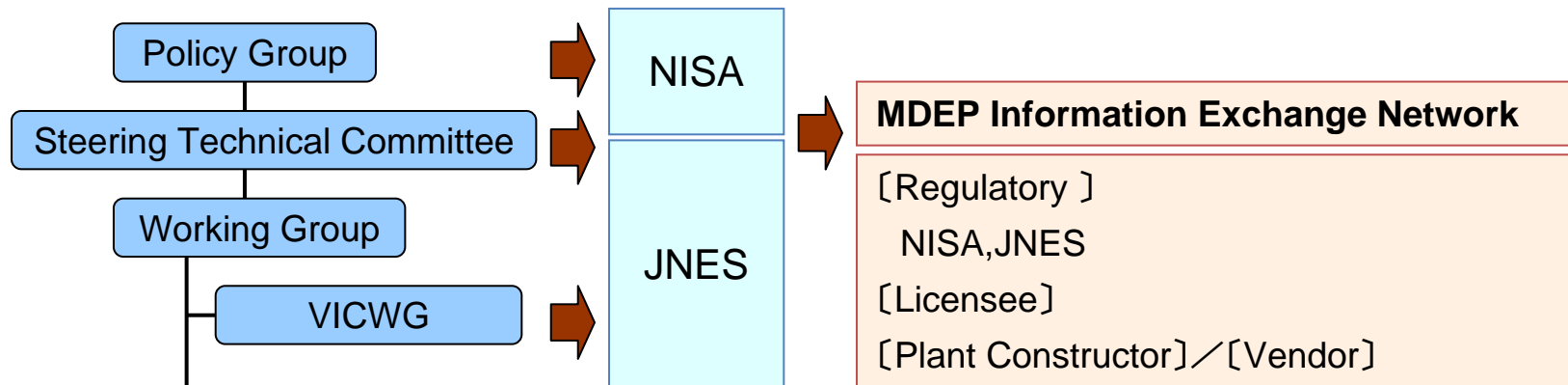
4. International Cooperative Activities

4.1 Japanese MDEP VICWG Activities

➤ Participation in MDEP VICWG Activities

- The Survey of Regulatory Inspection System and QA Criteria MDEP member Countries
- **Witnessed Inspections**

➤ Domestic Organization



4.2 Participation in MDEP VICWG Witnessed Inspections (1)

- **Inspection sponsored by NISA/JNES**
 - 🌐 **Welding Safety Management Review at Hitachi-GE**
- **Inspections observed by NISA/JNES**
 - 🌐 **NRC Inspection to JSW**
 - 🌐 **NRC Inspection to SMI**
 - 🌐 **ASN QA Audit to MHI**
 - 🌐 **ASN Inspection to AREVA**

4.2 Participation in MDEP VICWG Witnessed Inspections(2)

➤ Witnessed inspection sponsored by NISA/JNES

Welding Safety Management Review

- Date: 22-25, June 2009
- Licensee: Electric Power Development
Company
- Vendor: Hitachi-GE Nuclear Energy
- Review items: Pressure Containment Vessel
- Observer: CNSC (3 persons)

4.2 Participation in MDEP VICWG Witnessed Inspections (3)

➤ JNES's Review at a vendor's shop



4.2 Participation in MDEP VICWG Witnessed Inspections(4)

➤ Followings have been identified during the witnessed inspection

🌐 **Commonalities and differences have been observed** on the QA audit systems among NRC, ASN and NISA.

🌐 **Information exchange** of the results of inspections and QA audits is useful for regulatory actions and nuclear safety.

4.3 Participation in other International Cooperative Activities

- **The procurement control by licensees is becoming more important for nuclear safety due to nuclear globalization.**
- **Therefore, Japan is participating actively in the CNRA program of OECD/NEA for developing the Green Booklet “The regulator’s Role in Assessing Licensee Control of Vendor and Other Contracted Services”.**

5. Items for Further Study

Started to discuss the followings;

- **To develop the most appropriate regulatory approach to ensure the vendors' quality management system.**
- **To develop inspection system addressing the challenge of worldwide trends of industry globalization and regulatory harmonization.**

6. Conclusion

- Regulatory inspection on licensees' procurement control is important for safety.**
- International cooperative activities give us valuable insights in addressing the challenge of nuclear globalization.**