

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

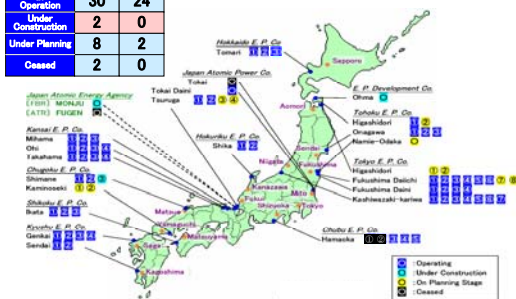
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1. The status of Japanese NPP construction

	BWR	PWR
In Operation	30	24
Under Construction	2	0
Under Planning	8	2
Canceled	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%

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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%

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2. Overview of Japanese Nuclear Safety Regulation for NPPs

2.1 The Japanese Regulatory Framework

➤ Reactor Regulation Law

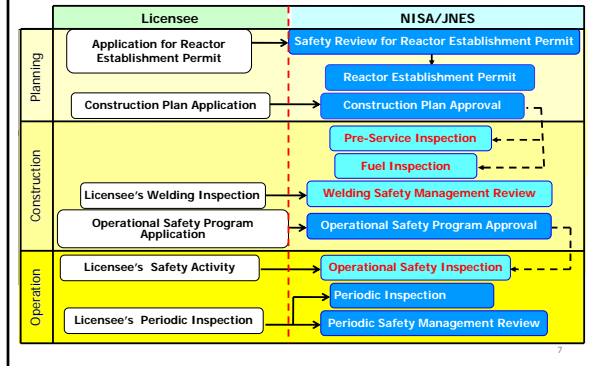
The law for the regulatory framework of Reactors, Nuclear Fuel/Source Materials.

➤ Electricity Utilities Industry Law

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

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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.

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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.

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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.**

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4. International Cooperative Activities

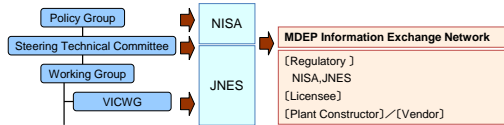
4.1 Japanese MDEP VICWG Activities

➤ Participation in MDEP VICWG Activities

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

• Witnessed Inspections

➤ Domestic Organization



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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

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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)

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4.2 Participation in MDEP VICWG Witnessed Inspections (3)

➤ JNES's Review at a vendor's shop



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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.

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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".

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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.**
