

Experience and Future Activities for Introduction of Nuclear Power

Masaomi KOYAMA

Deputy Director

Nuclear Energy Policy Planning Division
Ministry of Economy, Trade and Industry, Japan

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1. Introduction of Nuclear Power Generation in Japan (1)

Energy Situation in Post-War Period

- Very little energy resources in Japan
- Insufficiency of electricity infrastructure
- Rapidly increase in demand for energy
 - Because of reconstruction and economic growth after the War.
- Difficult to meet the demand
 - There were not enough appropriate sites for large-scale hydropower stations.
 - Thermal power should be limited because the dependency of foreign resources should be reduced.



After nation wide discussion Japan set the Nuclear Power Generation as main energy source in the future.

<SCOPE>

- Introduction as early as possible
- Nationalization in the future



1. Introduction of Nuclear Power Generation in Japan (2)

Early stage of introduction of nuclear power plants in Japan (1950s-1960s)

Decision of Reactor Type

- Operating Experience (Performance of operation)
- Safety Features (Safety Records)
- Economic Efficiency
- Future Potential to Large Scale

Decision of Size

- Power Distribution Network
- Future Electricity Demand (esp. Minimum required load)
- Network Capacity and Margin Ratio

Decision of Site Selection

- Geological Condition
- Cooling and Other Water Requirements
- Distance from the Location of Demand
- Feasibility of Acquiring the Necessary land
- Safety-related issues such as the possibility of earthquakes and tsunami
- Evaluation of Public Dose Level in the Case of an Accident



1. Introduction of Nuclear Power Generation in Japan (3)

As a pioneering company of nuclear power development the Japan Atomic Power Company was established by electricity utility companies in 1957 (2 years after the national nuclear power programme started). The company has also a role of supporting human development programme of other electricity utilities.

First NPP

166MWe Gas-Cooled Reactor imported from UK

Commercial operation started in 1966

- getting natural uranium for fuel was easier than enriched uranium (supply of enriched uranium was uncertain) at the time
- only this type reactor had commercial operation record at the time

Second NPP and after

Light Water Reactors; BWRs and PWRs

- scale up of LWRs is easier than GCR
- recognised that getting enriched uranium was not so difficult.
- was considered LWRs would be major reactor type in the world



2. Expansion of Nuclear Power Generation in Japan(1)

Extensive impact to Japanese economy by the two oil crises
- Oil dependency ratio: over 70% (early 1970's)

Strong recognition of the significance of nuclear energy with
the experience of them.



Expansion of nuclear power as the effective way to decrease the
degree of dependence on oil.

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55 NPPs in operation, 2 NPPs under construction, 11 NPPs planned



2. Expansion of Nuclear Power Generation in Japan (2)

Public Acceptance Activities are crucial thing to expand nuclear power

Build trust between government and local communities

- Create a visible presence in communities where nuclear facilities are sited, dealing sincerely with their particular concerns in meetings at all levels.
- Stand on a common position of information recipients are very important.
- Enhance direct dialog with local residents (in small face-to-face meetings, etc.).
- Ultimately the responsible persons at the national level should make clear the government's thinking and policy.

Concrete Measures

- Information and opinion exchange between central government and local residents which lived near nuclear facilities sited to understand accurately about peaceful use of nuclear energy
- Holding experience-based exhibit, open seminars and workshops
- Sending experts to various kind of events to provide accurate information about nuclear energy

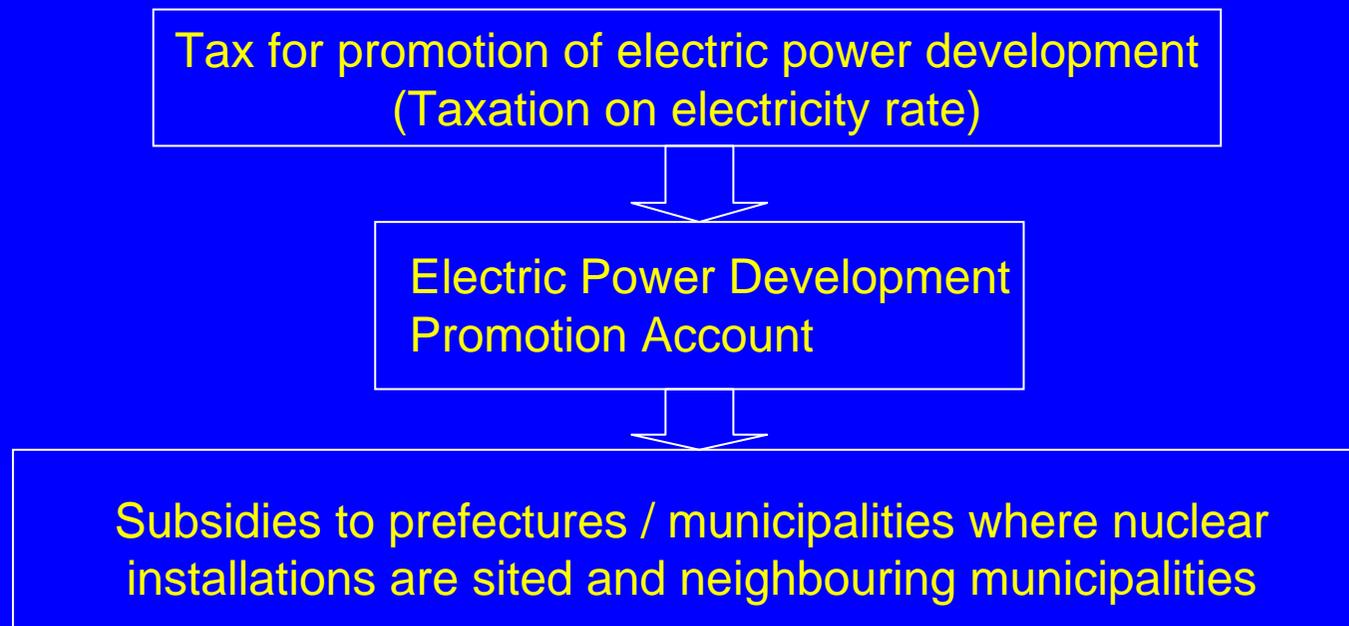


2. Expansion of Nuclear Power Generation in Japan (3)

Support to development of the region in which nuclear installations are sited

For the development of regions with nuclear power plants, subsidies are granted to

- 1) Prefectures and municipalities where nuclear power plants are sited,
- 2) Within calculated limits based on energy output, the amount of power generated, and population, etc.,
- 3) For projects in the hardware and software sectors for which these local communities apply, based on their own initiative.



3. Current and Future Activity to the Cooperation on Introduction of Nuclear Power (1)

Bi-lateral cooperation

Bi-lateral cooperation for the Infrastructure development to the introduction of nuclear power generation (ex. VietNam, Indonesia, Kazakhstan)

<Example>

Cooperate in human resource development

- Providing human resource development programme
- Holding training course
- Sending experts
- Holding public information seminars



3. Current and Future Activity to the Cooperation on Introduction of Nuclear Power (2)

Multi lateral cooperation

- Multi lateral cooperation is not easy because the needs for infrastructure of each countries are very different.
- Nuclear safety, nuclear non-proliferation and nuclear security is major premises.
- Agency's activity on the development infrastructure to introduction of nuclear power generation in Member States is appropriate and timely.

Newly Voluntary Contribution to the Agency

To help the Agency's activity on the development infrastructure to introduction of nuclear power generation in Member States, Japan will contribute extra-budgetary fund and cost-free expert to the Agency (expected from mid-2008).

Ministry of Economy, Trade and Industry is now requesting the budget for this contribution to the Ministry of Finance.



Thank You For Your Attention !

