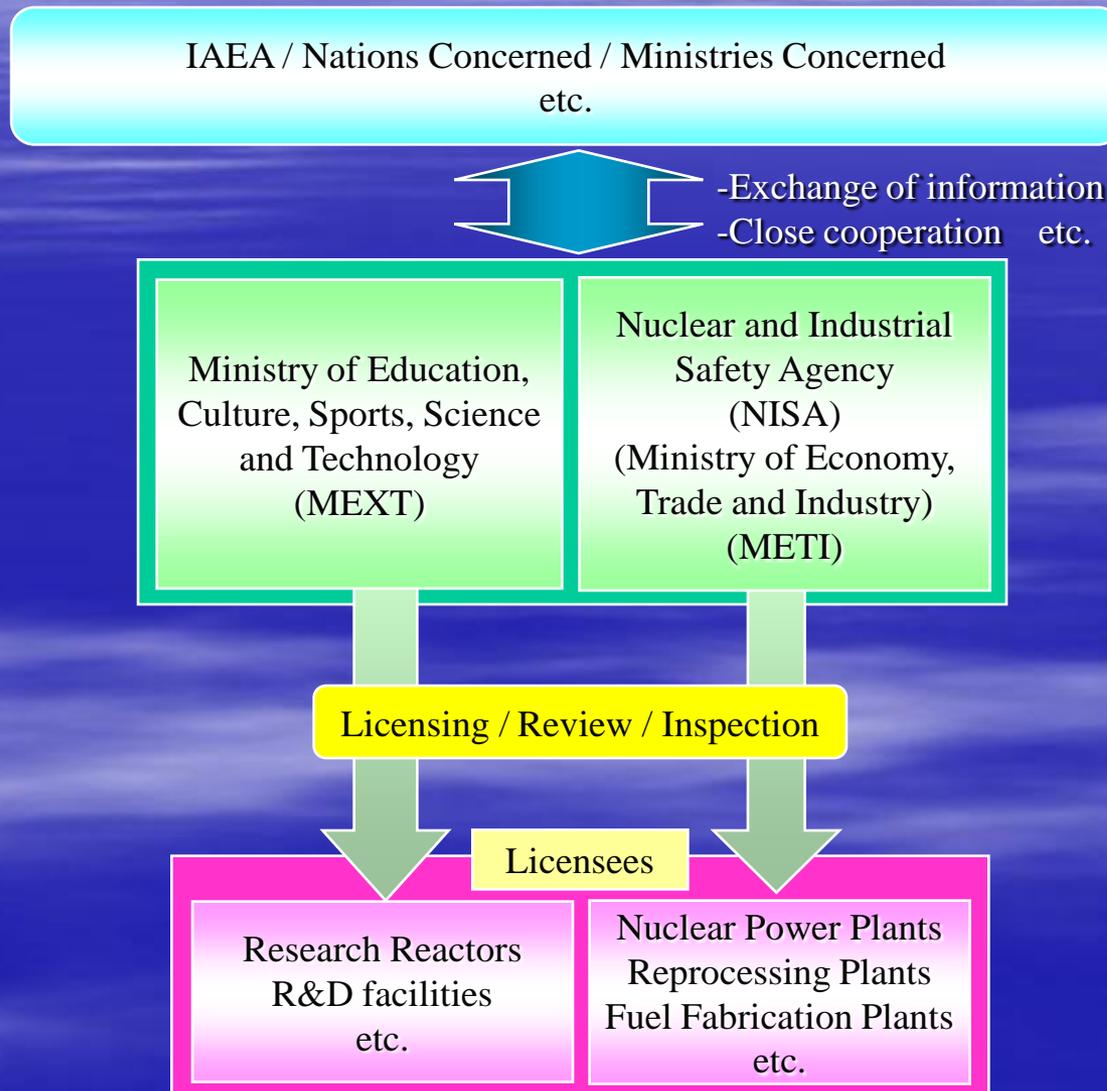


Current Nuclear Physical Protection Measures in Japan

July 2008

**Ministry of Education, Culture, Sports,
Science and Technology (MEXT)
Ministry of Economy, Trade and Industry (METI)**

Structure of Physical Protection in Japan



Enhancement of Nuclear Security Measures after Sep.11, 2001

- **Intensified security measures by Licensees**
- **Close cooperation with National Security Authorities**
- **Reinforced regulatory regime for physical protection**

Intensified Security Measures by Licensees

- **After Sep. 11, the Nuclear and Industrial Safety Agency (NISA) and Ministry of Education, Culture, Sports, Science and Technology (MEXT) issued directives on security enhancement to their Licensees.**
- **In accordance with the directives, Licensees implemented enhanced security measures such as stricter access control, intensified security surveillance, and so on.**

Close Cooperation with National Security Authorities

- Cooperation with national security authorities (National Police Agency (NPA), Japan Coast Guard (JCG)) was expanded.
- Round-the-clock security checks by special police forces and JCG patrol boats were implemented for nuclear facilities.

Reinforced Regulatory Regime for Physical Protection

- **NISA regulates nuclear security activities at nuclear power plants, reprocessing plants, and fuel fabrication plants in Japan.**
- **MEXT regulates activities at research reactors, critical assemblies, and R&D facilities.**

Recent Enhancements to Physical Protection Measures

- **NISA and MEXT committees separately discussed how to enhance physical protection measures.**
- **Based on the committee reports, the Law for Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors, as well as related ordinances for physical protection, were amended.**

Discussion in the Committees

- The committees compiled their final reports, both titled “Enhanced Physical Protection Measures at Nuclear Facilities” (NISA: Dec. 2004; MEXT: Jan. 2005)
- Major recommendations of the reports are:
 - To define Design Basis Threat (DBT)
 - To implement physical protection inspections
 - To enhance the security of sensitive information related to physical protection

Amendments of the Law and Ordinances

- **Law:**
Mainly covers physical protection inspections, physical protection information confidentiality, and penalties
 - Amended May 2005
 - Took effect December 2005
- **METI and MEXT Ministerial Ordinances:**
Cover the application of DBT and other requirements for physical protection measures
 - Amended December 2005
 - Took effect December 2005/June 2006

DBT and Protective Measures

- **METI/MEXT, in consultation with National Security Authorities (NPA, JCG) *(not legally required)*, define the threat and notify Licensees.**
- **Licensees are required to implement protective measures, taking DBT into account.**

Fuel Category and DBT Application

Category	I	II Except NPP	III	NPP
NISA	○	Pu, U ₂₃₃ , HEU —	Pu, U ₂₃₃ , HEU —	○
		LEU —	LEU ×	
MEXT	○	Pu, U ₂₃₃ , HEU ○	Pu, U ₂₃₃ , HEU ○*	—
		LEU ×	LEU ×	

○: Applied
 ×: Not applied
 —: No facilities

NPP : Nuclear Power Plant
 HEU : High-Enriched Uranium
 LEU : Low-Enriched Uranium

* Facilities with more than 15g of Pu, U233 or HEU

Amendments related to the Security Plan and Physical Protection Inspection

Protective measures implemented by Licensees are described in their Security Plans, which are examined and approved by the Security Authorities (NISA and MEXT).

Security plans are required to cover the following:

- Organizations and function of Physical Protection (PP)
- Defining of protected/restricted areas
- Access control
- Material control
- Physical Protection System (PPS)
- Information management (including confidentiality)
- Education and Training
- Emergency preparedness plan
- Measures taking into account DBT
- Evaluation and necessary improvements
- Recordkeeping
- Other

(Underlined items are those amended in the ordinances.)

Amendments related to the Security Plan and Physical Protection Inspection (cont.)

- **Revised Security Plans were submitted to NISA/MEXT in Feb. 2006, and, after examination, approved in May/June 2006.**
- **Regulatory authorities (NISA, MEXT) consult on the Security Plan with relevant security authorities (NPA, JCG) before approval.**
- **Compliance with the Security Plan is checked on site through periodic physical protection inspections (conducted annually), and improvements are ordered as necessary.**

Physical Protection Inspections

- The effectiveness of a Security Plan is examined by physical protection inspectors through inspection of physical protection systems and evaluation of an on-site guard training/exercise.
- The legally established numbers of Physical Protection Inspectors are:
 - 25 inspectors for NISA (for NPS, reprocessing plants, etc.)
 - 15 inspectors for MEXT (for research reactors, critical assemblies, R&D facilities)
- Most NISA Inspectors are deployed in regional METI offices.
- Inspections have been conducted since June 2006.

Contents of Physical Protection Inspection

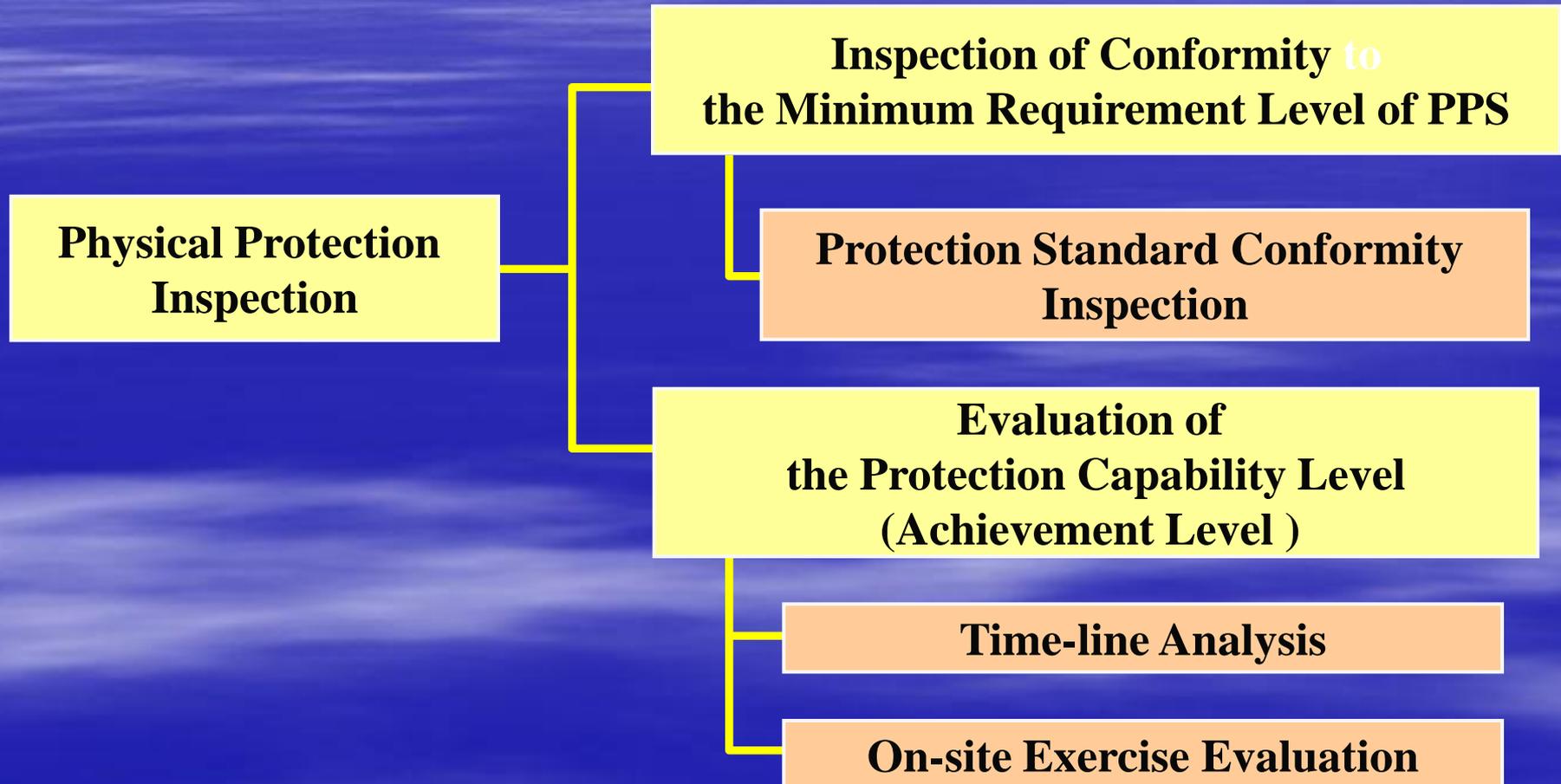
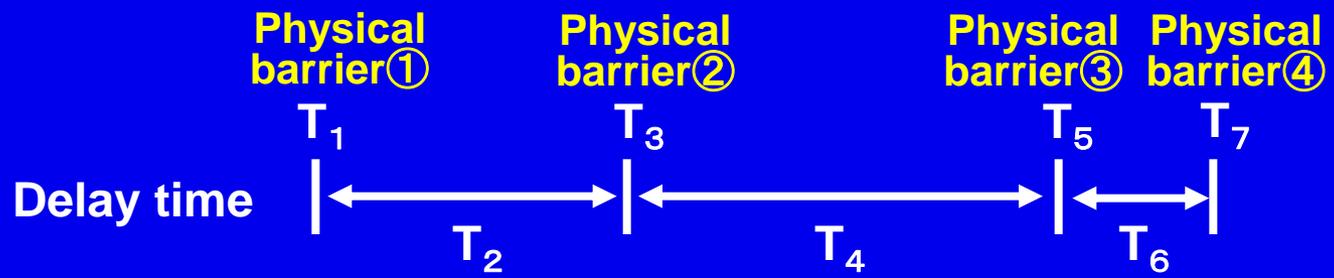
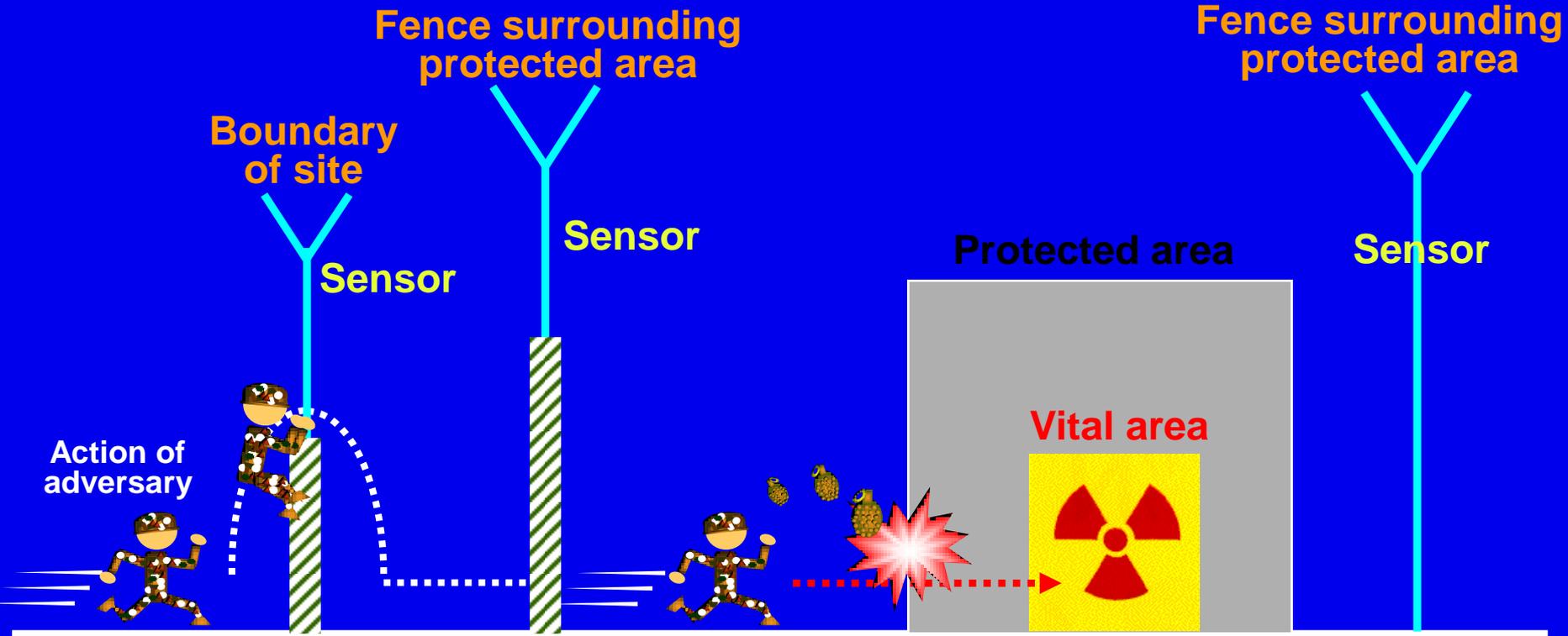


Image figure of time line analysis



Accumulated delay time $T = T_1 + T_2 + T_3 + T_4 + T_5 + T_6 + T_7$

On-site Exercise Evaluation

- Licensees carry out simulated intrusion exercise periodically, evaluate the results and the effectiveness of the protective measures.
- In addition to the simulated intrusion exercise and communication exercise, which are performed internally, licensees also carry out a joint exercise to respond adversaries with the local legal enforcement arbitrarily.

Japan Coast Guard joint exercise
(Response to unidentified ships)



Physical Protection inspection in FY2007 (MEXT)

- Responsible facilities
22 sites (7 Research Reactor,
22 Nuclear Material users)
- Inspection period
June 2007 ~ February 2008

Physical Protection inspection in FY2007 (METI)

- Responsible facilities
 - 28 sites (19 Nuclear Power Plants,
2 Reprocessing Plants,
6 Fuel Fabrication Plants,
1 Radioactive Waste
Management Facilities)
- Inspection period
 - June 2006 ~ March 2007

Prospect of Physical Protection inspection in FY2008

- Inspections in FY2008 have started in July.
- Inspection for performance of protected measures procedure is needed to judge its effectiveness of performance of protected measures.
(alarm devices, intrusion sensors, etc.)

Amendments related to Security Information Confidentiality

- Detailed physical protection information is categorized as “Sensitive Information” and the highest confidentiality is required.
- Sensitive Information includes the following:
 - Design Basis Threat (DBT)
 - Details of Physical Protection Systems (PPS)
 - Details of surveillance and guards
 - Details of emergency plans
 - Detailed results of assessments
etc.
- Penalties for the unlawful disclosure of Sensitive Information: Up to one year in prison, and/or up to one million yen in fines.

Framework of Enhancements to the Physical Protection Regime in Japan

External and internal threats

- Theft of nuclear material
- Sabotage of facilities

