

Current Nuclear Security Regime and Regulatory Framework in Japan

-Efforts for Compliance with NSS-13 and CPPNM Amendment-

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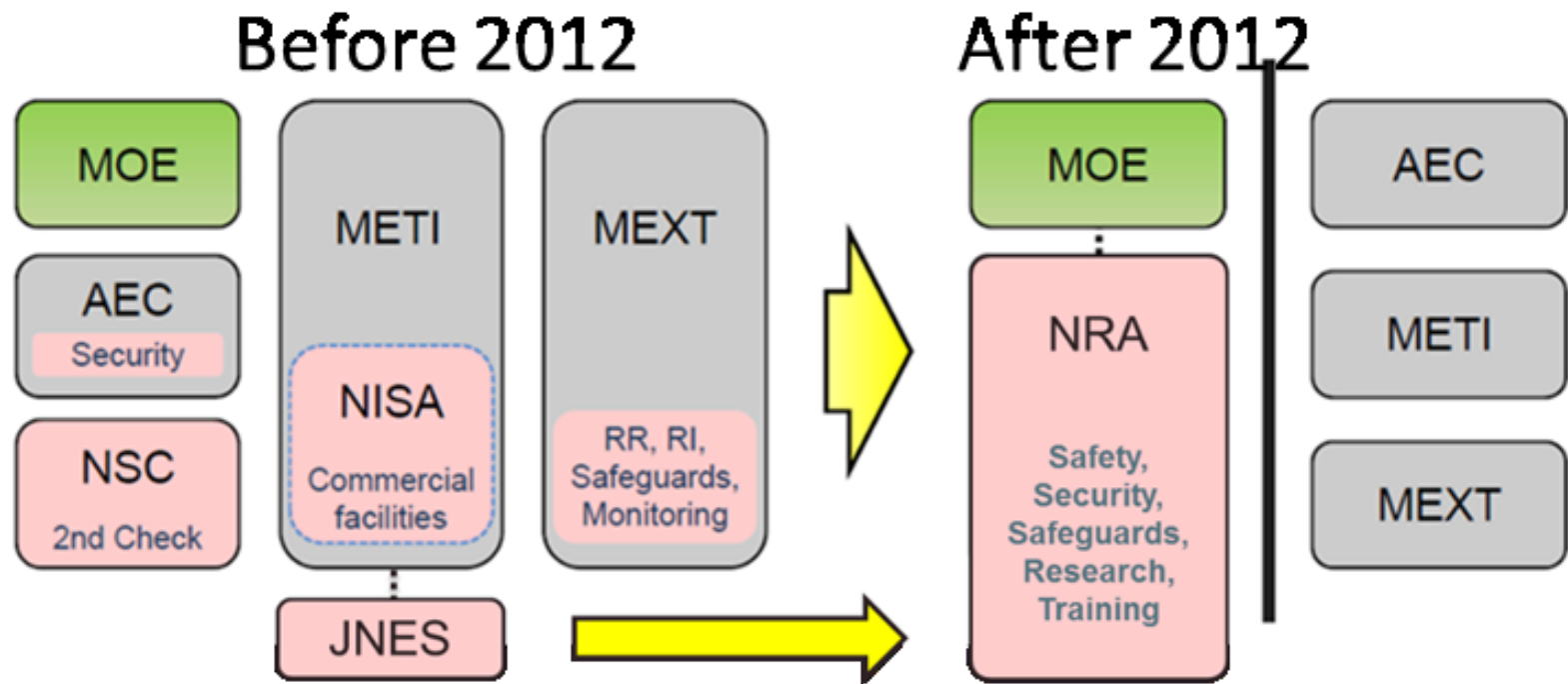


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Introduction

NRA, Japan was established as the only independent regulatory body for nuclear safety and security in 2012.

NRA has restructured the Japanese nuclear security regulation based on NSS-13 and the lessons learned from the accident.



AEC : Atomic Energy Commission
 METI : Ministry of Economy, Trade and Industry
 MEXT : Ministry of Education, Culture, Sports, Science and Technology
 MOE : Ministry of the Environment
 NISA : Nuclear and Industrial Safety Agency (abolished)
 NSC : Nuclear Safety Commission (abolished)
JNES : Japan Nuclear Energy Safety Organization (TSO, abolished)

Fig.1 Integration of nuclear safety and security regulatory body

Table 1 List of Regulated Nuclear Activities

No	Type of Activity	Number	Remarks
1	Fabrication and enrichment	7	Including MOX fabrication plant under construction
2	Commercial NPP	17	52 NPPs (including NPP under decommissioning and one NPP under construction)
3	NPP under development	2	2 NPPs (including NPP under decommissioning)
4	Research reactor	7	16 reactors (including reactors under decommissioning)
5	Interim storage of spent fuel	1	
6	Fuel reprocessing	2	
7	Disposal of radioactive waste	2	
8	Usage of nuclear material	20	
9	Specified nuclear facility (Fukushima-Daiichi NPP)	1	6 NPPs at Fukushima-Daiichi Station
	Total	59	

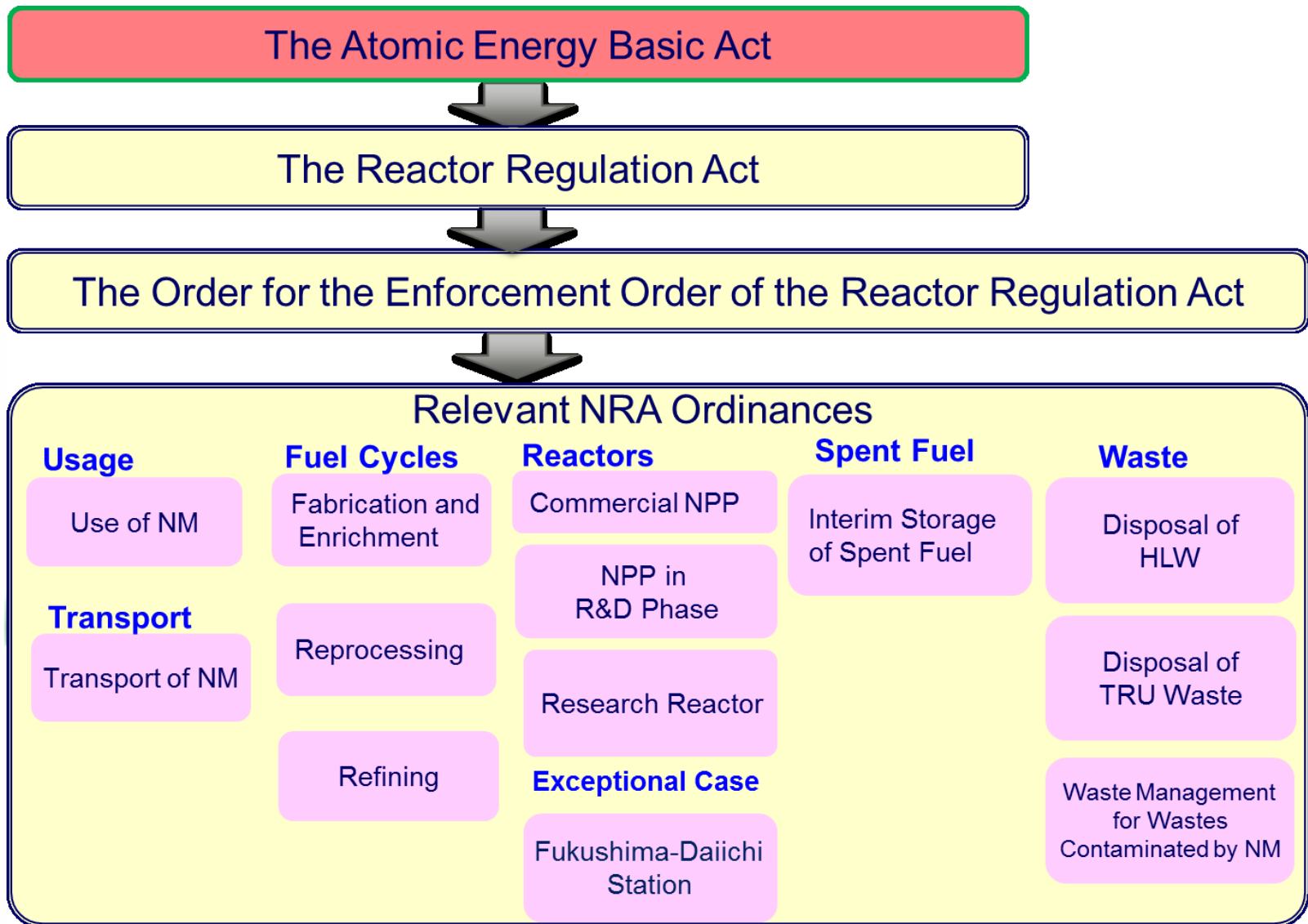


Fig.2 Structure of Nuclear Regulation in Japan

Efforts for Improvement of Nuclear Security Regime from 2011

The Japanese people requires the actions to prevent any types of radiological consequence containing sabotage for nuclear facilities after Fukushima-Daiichi accident.

NSS13 has just published in January in 2011.

NRA, Japan decided to adopt NSS-13 as a base of nuclear security regime and the revision has completed in 2012.

Establishment of trustworthiness check policy has been difficult challenge for NRA for long time because Japanese people had concerns for the violation of privacy by the government. NRA has developed trustworthiness check policy and currently enforced obtaining consensus.

Key Concepts of Physical Protection in Japan

1. Performance Based Approach

- Operators who have Cat.1 NM or nuclear facility over URC are required protection against DBT.**
- NRA establishes DBT in cooperation with the national police and coast guard.**
- Periodical evaluation and improvement by operators and check by NRA inspection.**

2. Graded Approach

- Categorization table for NM for unauthorized removal**
- URC as a only criteria for radiological consequence by sabotage.**

3. Defense in Depth

- Multi-layered barriers and sensors according to designated areas for protection.**

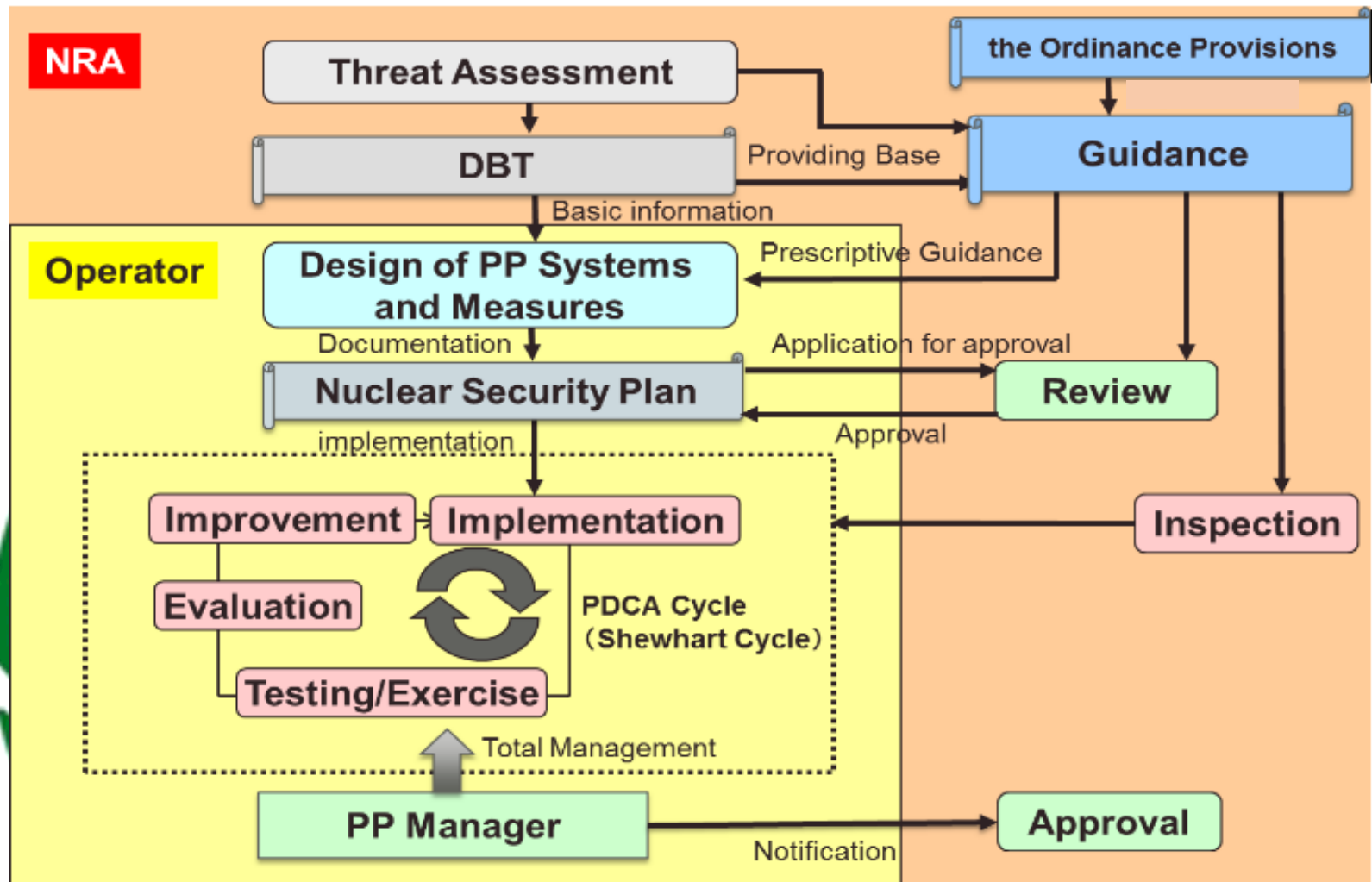


Fig.3 Overview of Nuclear Security Regulation in Japan

Overview of Regular Inspection

Regular Inspection Method

- At Least Two Inspectors
- Document Check and On-site Check
- About 1 Week
- Presence of Police and Coast Guard

Composition of Regular Inspection

①Baseline Inspection

Inspection based on Operator's Nuclear Security Plan

Inspection of Cyber Security

Check of Performance Testing of PP Systems by Operator

②Timeline Evaluation

On-site Check of possibility of Change in Operator's Timeline Evaluation

③Exercise

Exercise of Response to Nuclear Security Event Contains Response

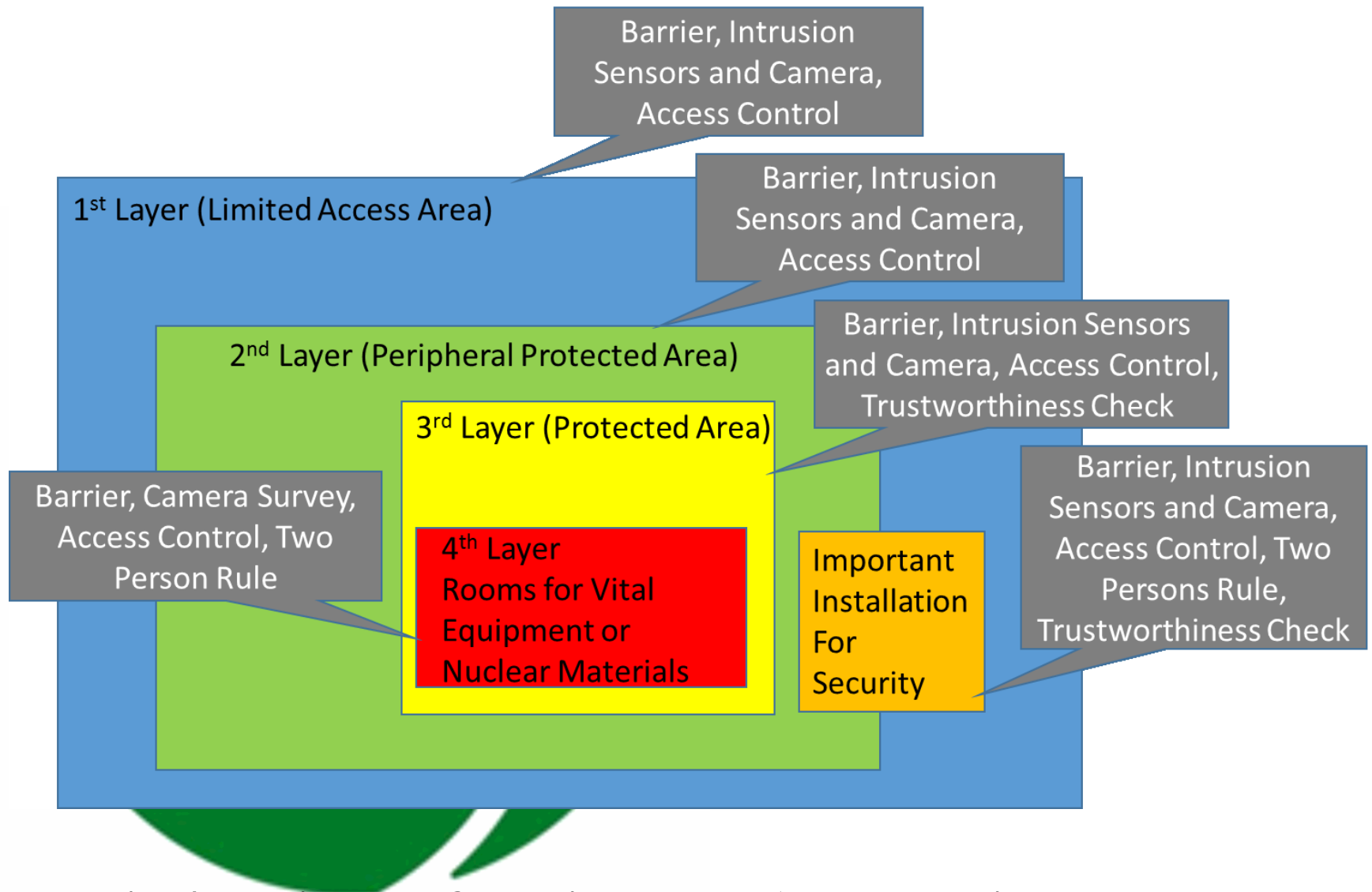


Fig.4 Typical Defense in Depth Approach in NPPs

Main Physical Protection Measures

1. Response Force

- Installation of armed special police force on site**

2. Insider Threat Mitigation

- Trustworthiness check by operators**
- Installation of CCTV for surveillance of insider threat**

3. Exercise

- Regular field exercise jointly with police**

4. Computer Security

- Regulatory requirement and related guidances**

(M.Imase et al., IAEA International Conference on Computer Security in a Nuclear World: Expert Discussion and Exchange, 1-5 June 2015)

5. Fostering Nuclear Security Culture

- Operator's effort to foster nuclear security culture is required by regulation.**
- Code of conduct for NRA employ**

(S.Tanaka, IAEA International Conference on Nuclear Security: Commitments and Actions, 5-9 December 2016)

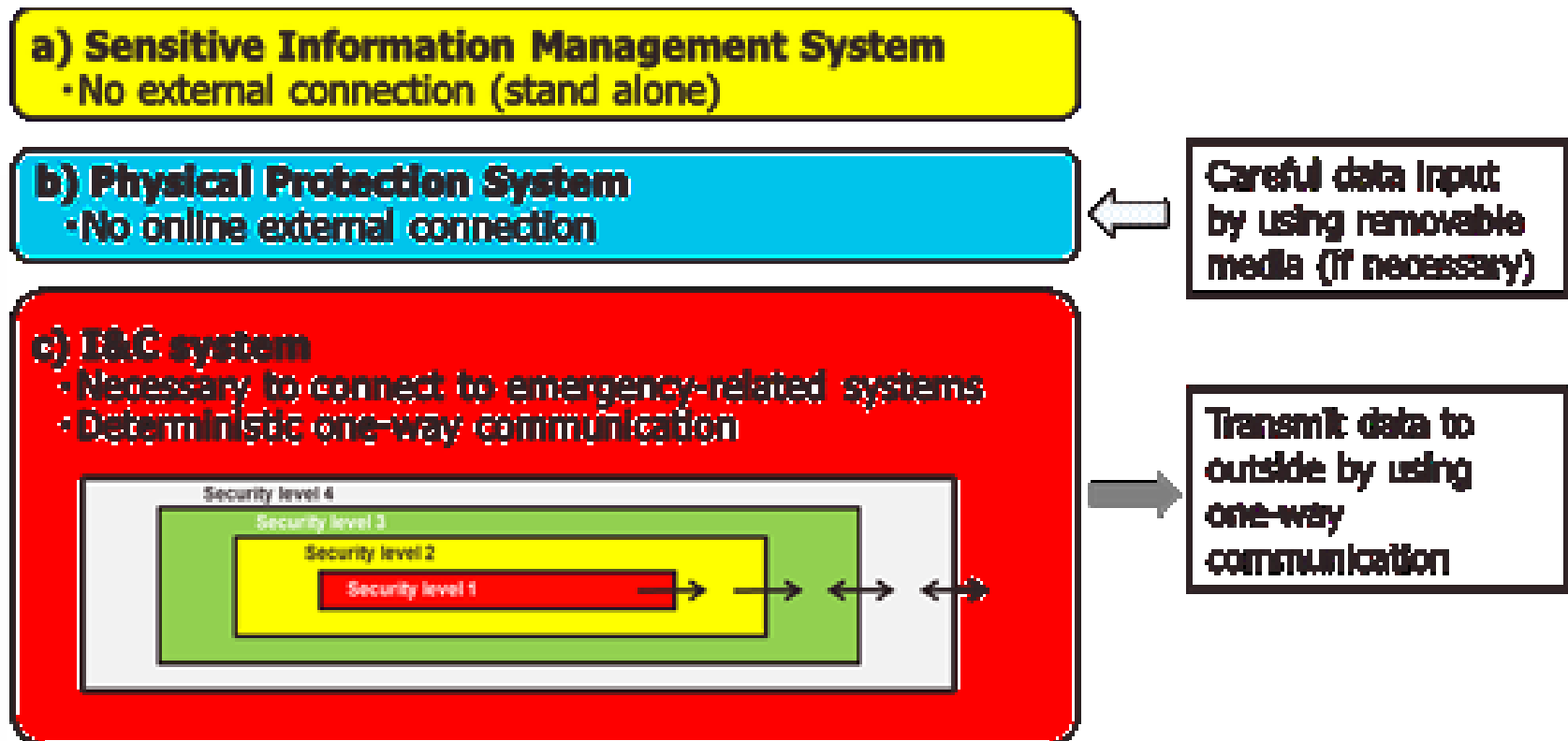


Fig.5 Example of Applicable Security Policy Based on Data Flow Control

National Policy of Trustworthiness Check

Target

- (1) A person who access to sensitive PP information,
 - (2) A person who access to the protected area without escort.
- Clarification of Operator's responsibility for Trustworthiness Check before authorization of access to sensitive PP information or access to Protected Area.
 - Requirements for Trustworthiness Check provided by NRA ordinances as a part of PP measures in nuclear facilities.

Outline

- A person who needs trustworthiness check shall submit an application with official certifications and other related personal information.
- The Operator shall check his trustworthiness based on the submitted application, interview and mental check etc.
- The Operator shall determine the trustworthiness of applicant.
- Procedure of trustworthiness check shall be part of Operator's nuclear security plan and reviewed by NRA inspection.

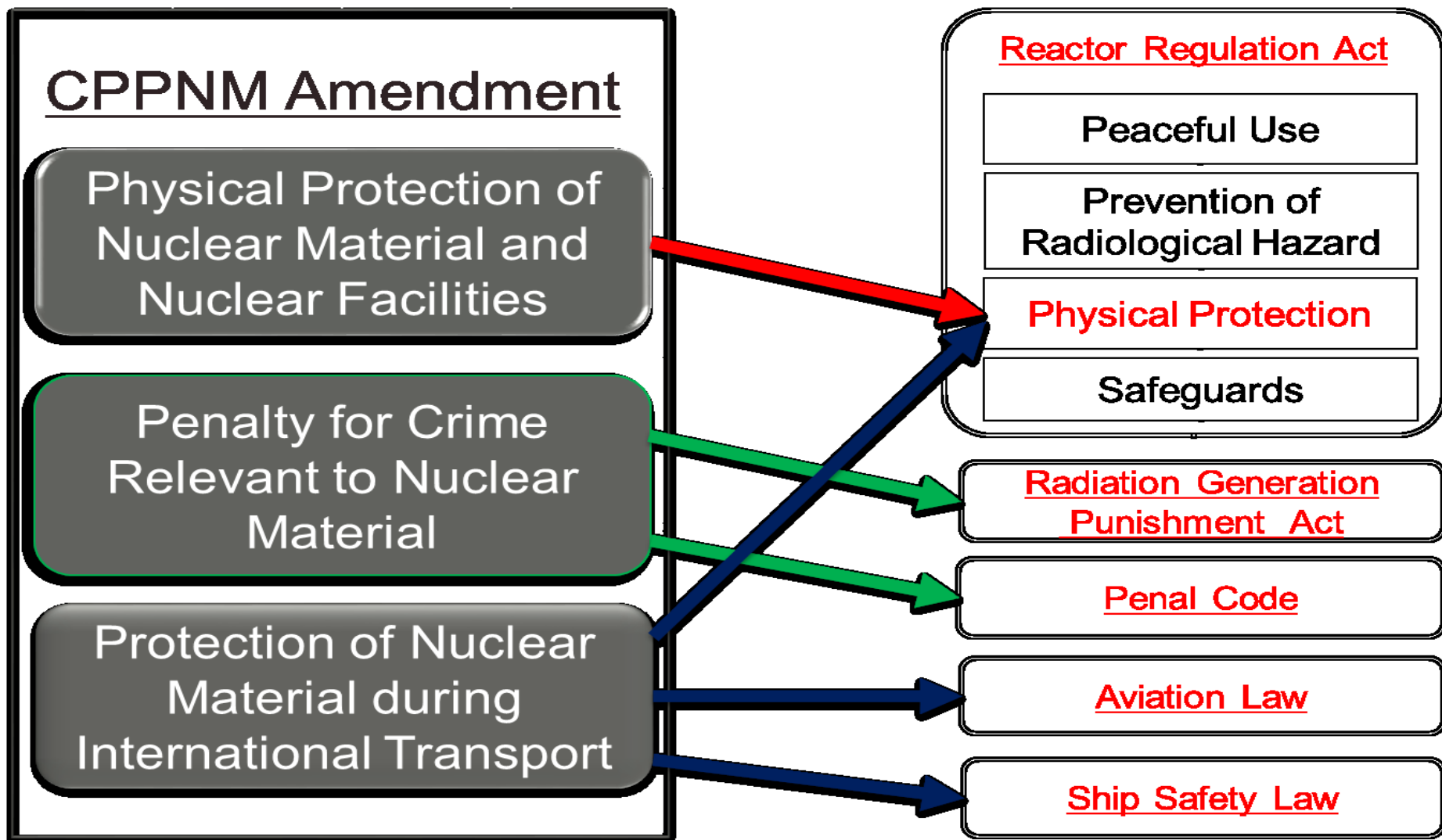
Enforcement of Trustworthiness Check

Trustworthiness Check

October 2015: NRA's Decision for National Trustworthiness Policy
September 2016: Revision of related NRA Ordinances
Publishing Guideline for Trustworthiness Check

Relevant Insider Mitigation Measures

Enhancement of Surveillance Measures in Protected Area to
Monitor Insider's Suspicious Actions



**Fig.6 Relationship between CPPNM Amendment
and Relevant Law of Japan**

The IPPAS mission in 2015

The team concluded that,

“Overall, the nuclear security regime and the implementation of physical protection measures for nuclear facilities and nuclear material in Japan was robust, sustainable, and had been significantly enhanced in recent years”.

NRA has been discussing with IAEA about the follow-up mission in 2018.

Summary

NRA, Japan has developed nuclear security regime using performance based approach with nuclear security as a condition for the Daiichi Nuclear Power Plant.

Japan has accepted the CPPNM (Convention on the Physical Protection of Nuclear Material) and the IAEA (International Atomic Energy Agency) standards.

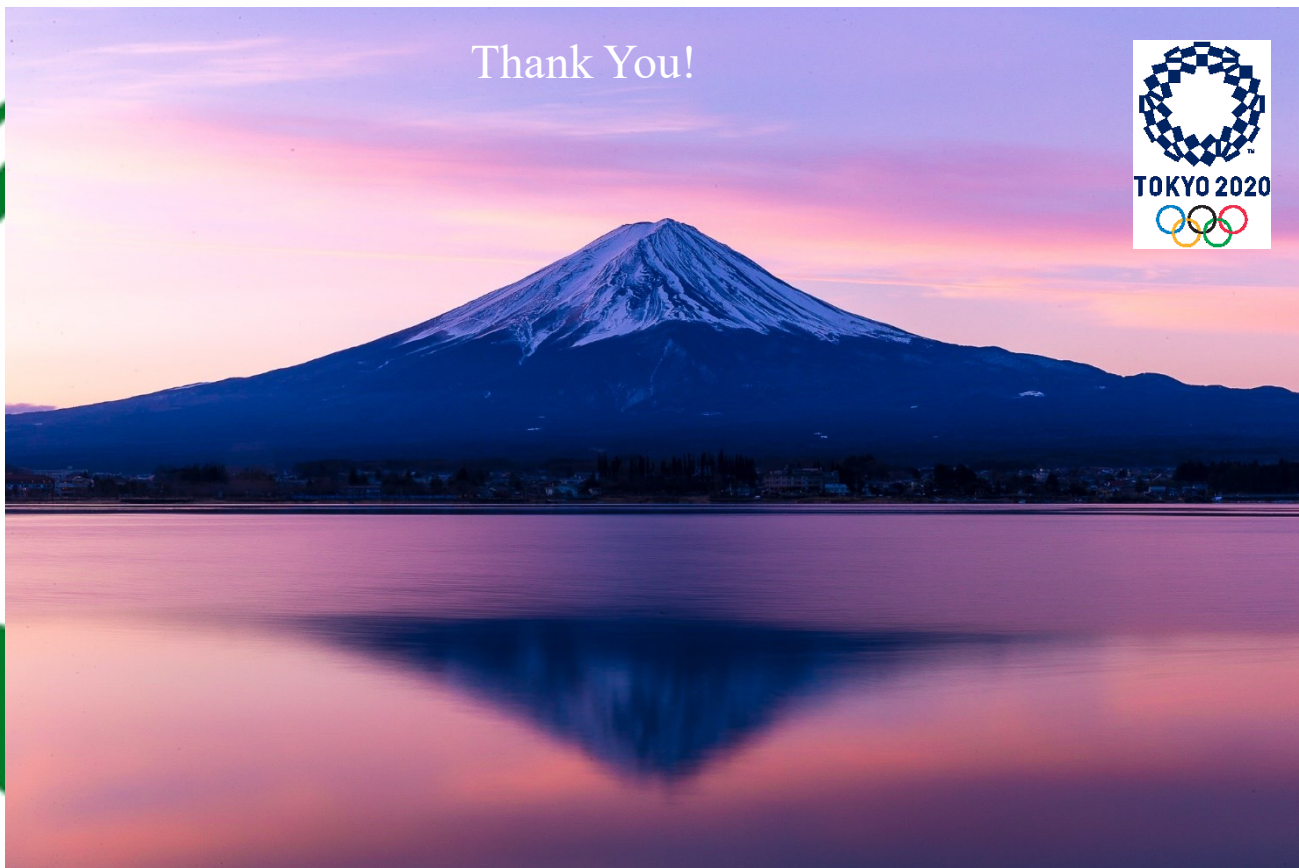
NRA has accepted the CPPNM and the IAEA standards for the person who has access to nuclear facilities and materials.

IAEA has accepted the CPPNM and the IAEA standards for the person who has access to nuclear facilities and materials in Fukushima.



END

Thank You!



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