

TS12c.1

**Key Issues on Radiological Protection
from Radioactive Waste Management
in
Existing Exposure Situation**

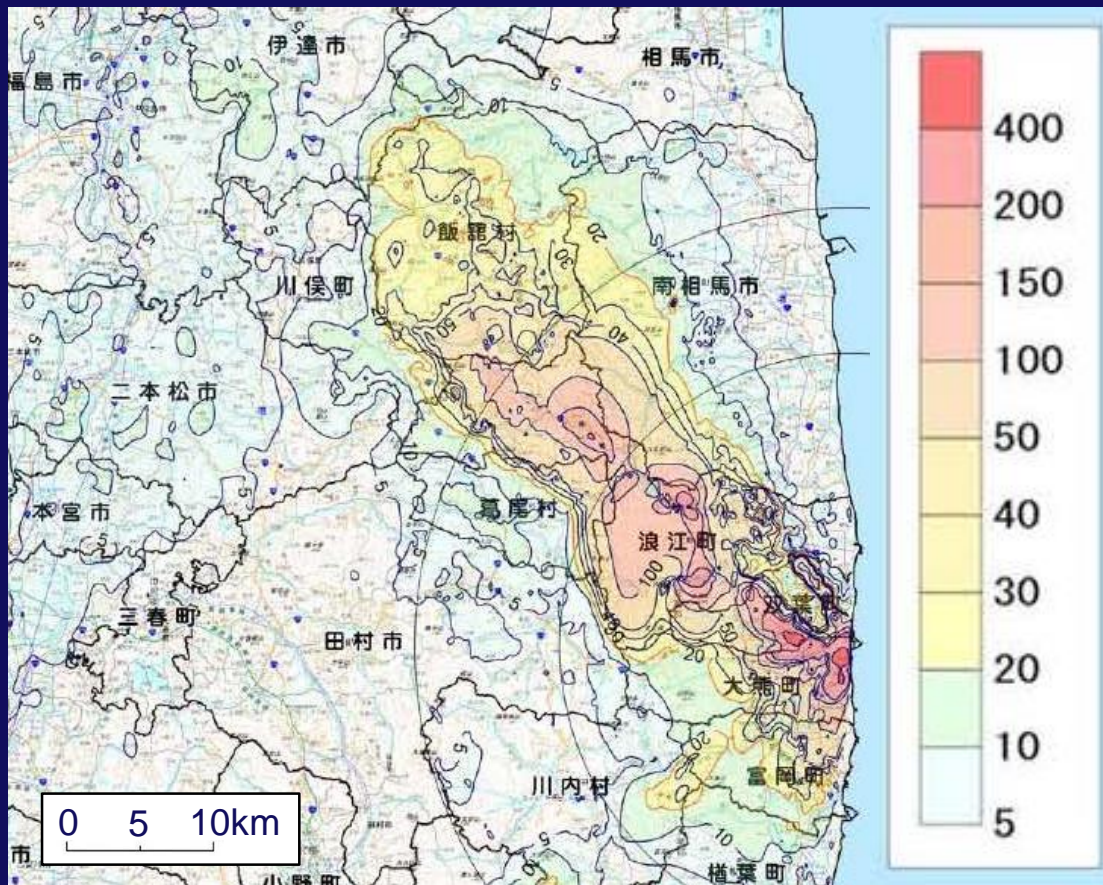
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Background



- ◆ Remediation
 - Decontamination
 - Radioactive waste management (all steps from its generation to disposal, including storage)
- ◆ Lack of RP system for WM in existing exposure situations

Annual dose [mSv/y]
(12 March 2011 – 11 March 2012)

http://radioactivity.mext.go.jp/en/contents/5000/4171/24/1750_1108_set.pdf

Key Issues

Fundamental Concept

- ✓ Existing exposure situation
- ✓ Justification and optimisation

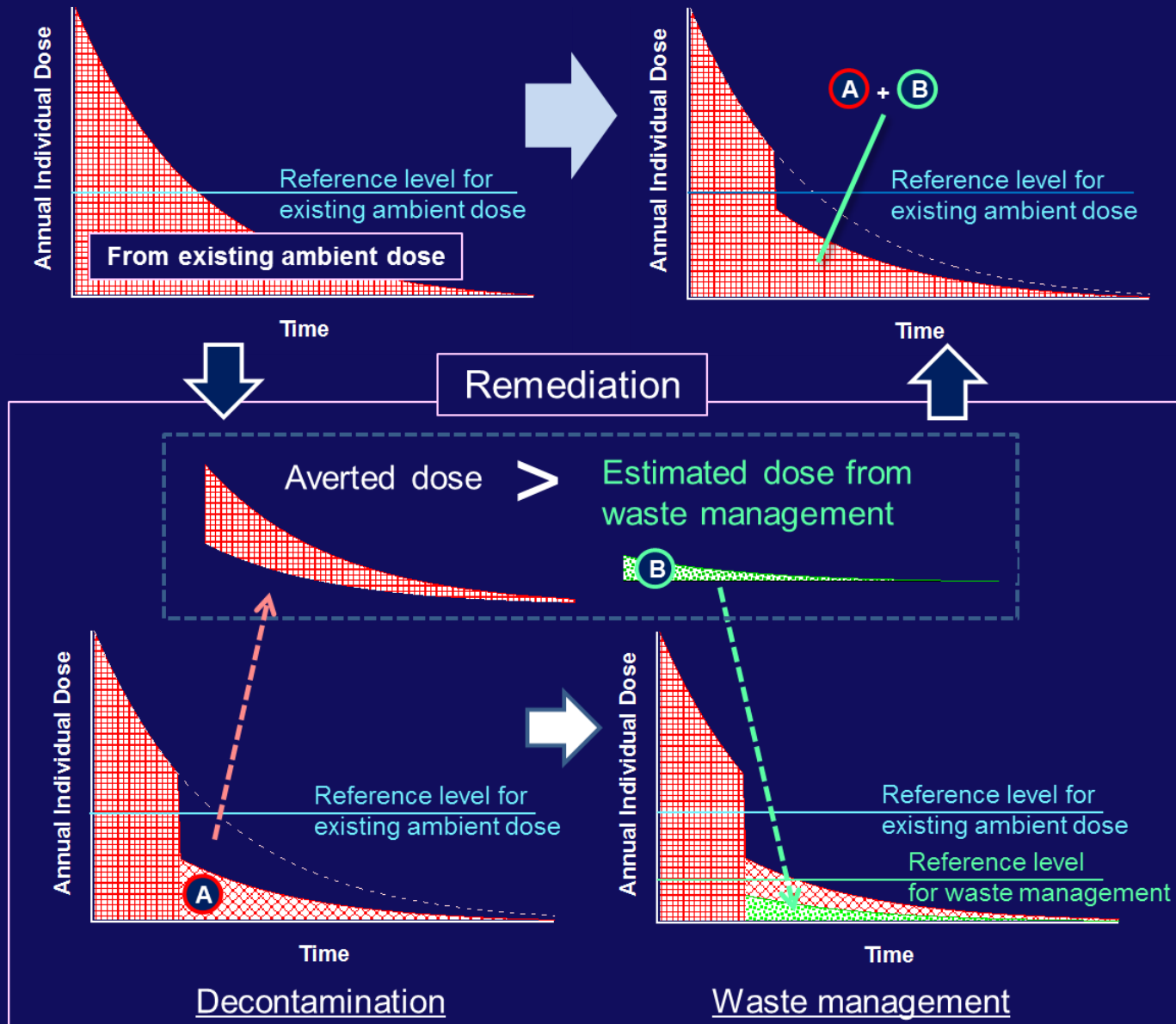


- ◆ **Definition and Selection of Reference Levels for existing ambient dose and radioactive waste management**
- ◆ **Participation of stakeholders in the decision-making process**

Definition and Selection of Reference Levels

- ◆ Reference level (ICRP Pub. 103 & 111)
 - Source-related restriction to individual dose
 - Selected in 1-20 mSv/y dose band
- ◆ Potential exposure from radioactive waste management is:
 - Justified when the individual dose reduced
 - **Optimised taking the averted existing ambient dose into account**
- ◆ **Intermediate reference levels should be selected progressively**
 - Final target at 1 mSv/y for disposal

Definition and Selection of Reference Levels



Participation of Stakeholders

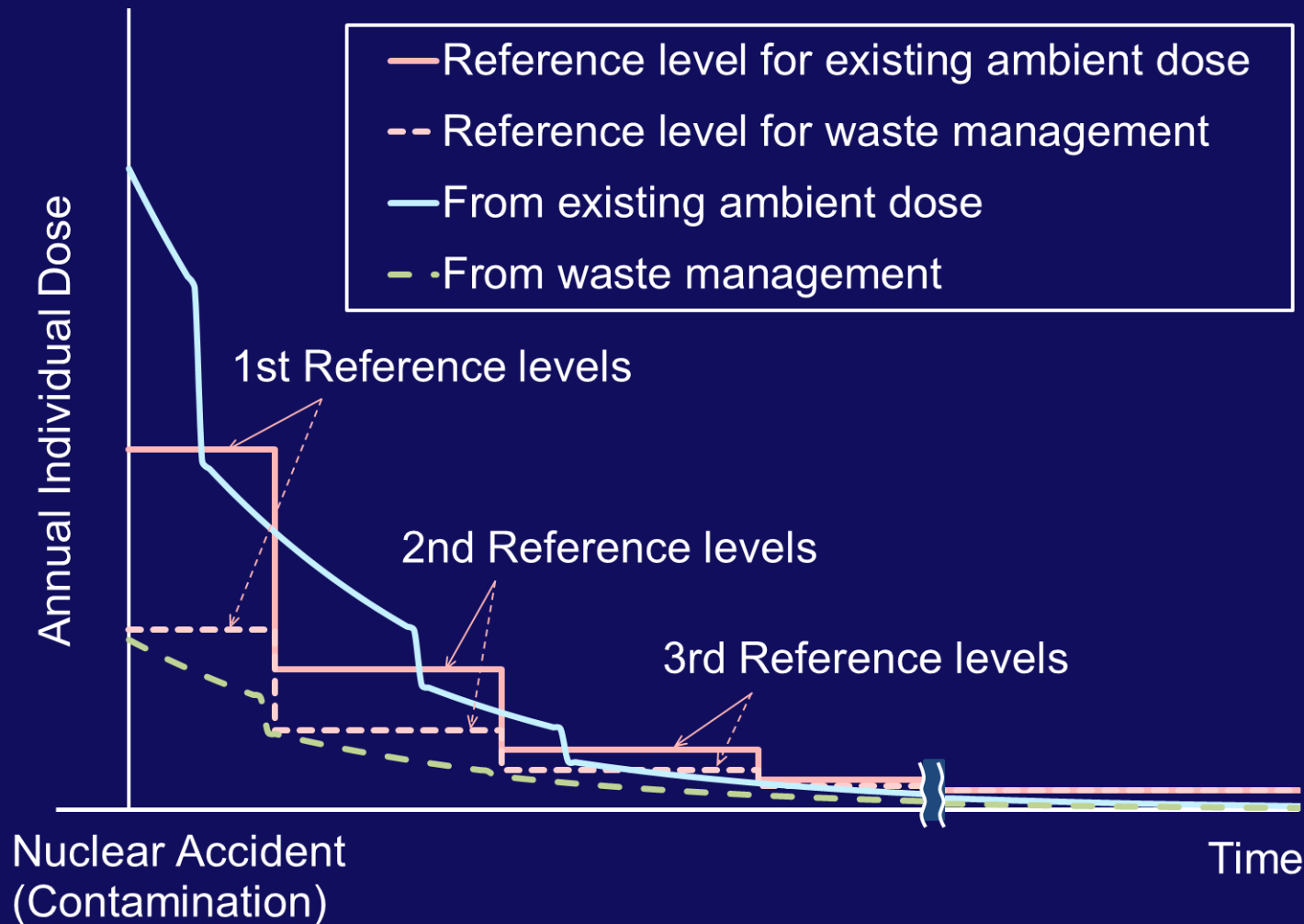
- ◆ Participation of the stakeholders in the decision-making is strongly recommended (ICRP Pub. 82 & 111)
- ◆ It is appropriate to **select gradual intermediate reference levels** for the existing annual ambient dose and for waste management **according to the progress of the reduction in the individual doses** in the integrated plan of environmental remediation

Framework of RP for Radioactive Waste Management in Existing Exposure Situation

- ◆ The reference level for radioactive waste management is selected below the reference level selected for the existing annual ambient dose in the environment.
- ◆ Intermediate reference levels are adopted gradually according to the progress of the reduction in the existing ambient dose in the environment including the participation of stakeholders.

Application to Fukushima

◆ Decontamination of Cs-137 & Cs-134



Conclusions

- ◆ **Proposal** of a framework of radiation protection from radioactive waste management in existing exposure situations
 - **Intermediate reference levels for such waste management are adopted gradually** according to the progress of the reduction in the existing annual ambient dose in the environment to or below the order of 1 mSv/y that corresponds to the natural background level.
 - Intermediate reference levels are selected to make the remediation activities reasonably practical **on the basis of the principle of justification and optimisation including the participation of relevant stakeholders** living in existing exposure situations.

Current Guideline for Disaster Waste (Ministry of the Environment)

“Where is Optimisation!”

Radioactivity of Cs-134 and Cs-137

100,000 Bq/kg 1 mSv/y for Public (Operation)
10 μ Sv/y for Public (Post-closure)

- Interim Storage
- Strictly Controlled Landfill Disposal

8,000 Bq/kg : 1 mSv/y for Worker (Operation)

- Controlled Landfill Disposal

(Disposed as Generic Wastes)