

Preparedness for Recovery and the ICRP International Conference on Recovery in 2020



NEA Workshop on Preparedness for Post-Accident Recovery: Lessons From Experience

Tokyo, Japan
February 2020



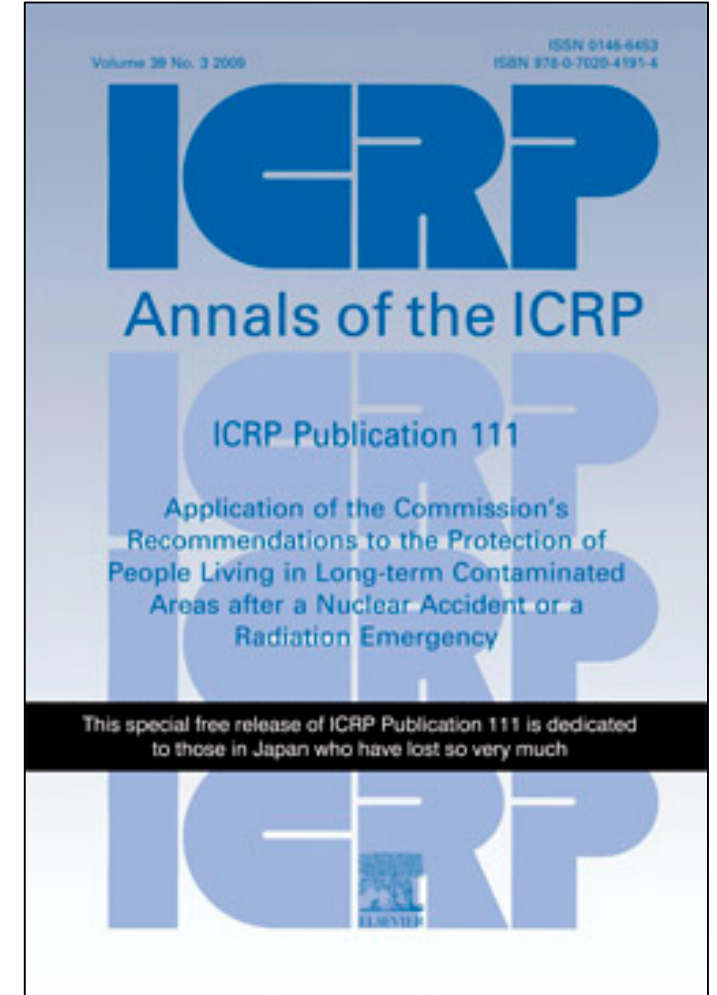
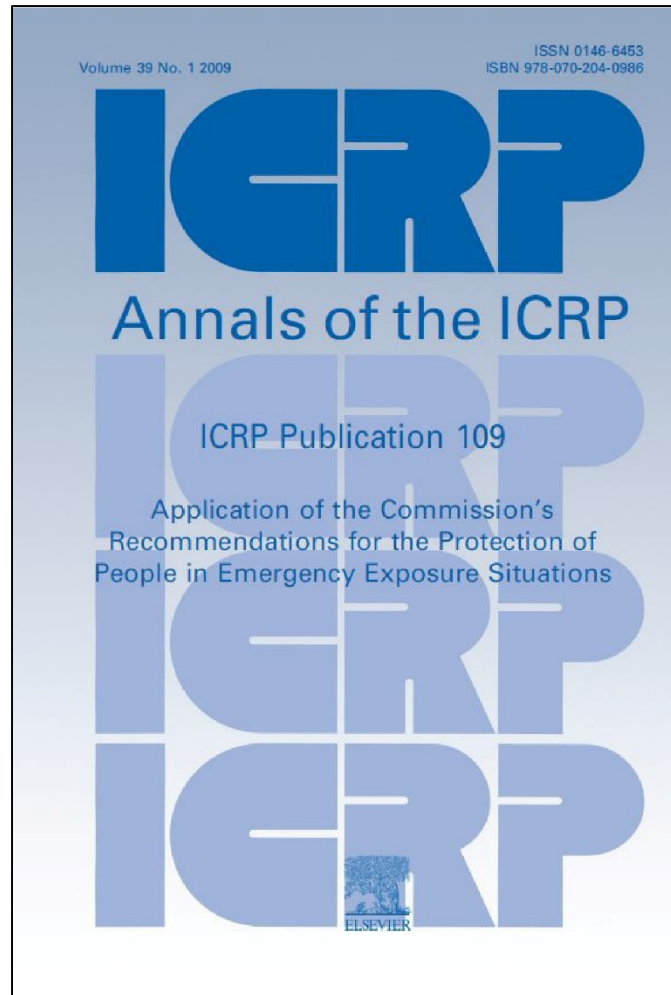
THANKS to supporters
of the Free the Annals
initiative, all ICRP
publications are **free**
two years after release

Christopher Clement
Scientific Secretary

Current ICRP Publications on Emergency & Post-Accident Recovery

ICRP *Publication 109*
**Protection of People in
Emergency Exposure
Situations**

ICRP *Publication 111*
**Protection of People
Living in Long-term
Contaminated Areas after
a Nuclear Accident or a
Radiation Emergency**



ICRP Task Group 93

Update of ICRP *Publications 109 and 111*

Membership

Michiaki Kai (Chair), Japan

Toshimitsu Homma (Vice-Chair), Japan

Ralph Andersen, USA

Viktor Averin, Belarus

Edward (Ted) Lazo, NEA

Marcel Lips, Switzerland

Anne Nisbet, UK

Miroslav Pinak, IAEA

Thierry Schneider, France

Sergey Shinkarev, Russian Federation

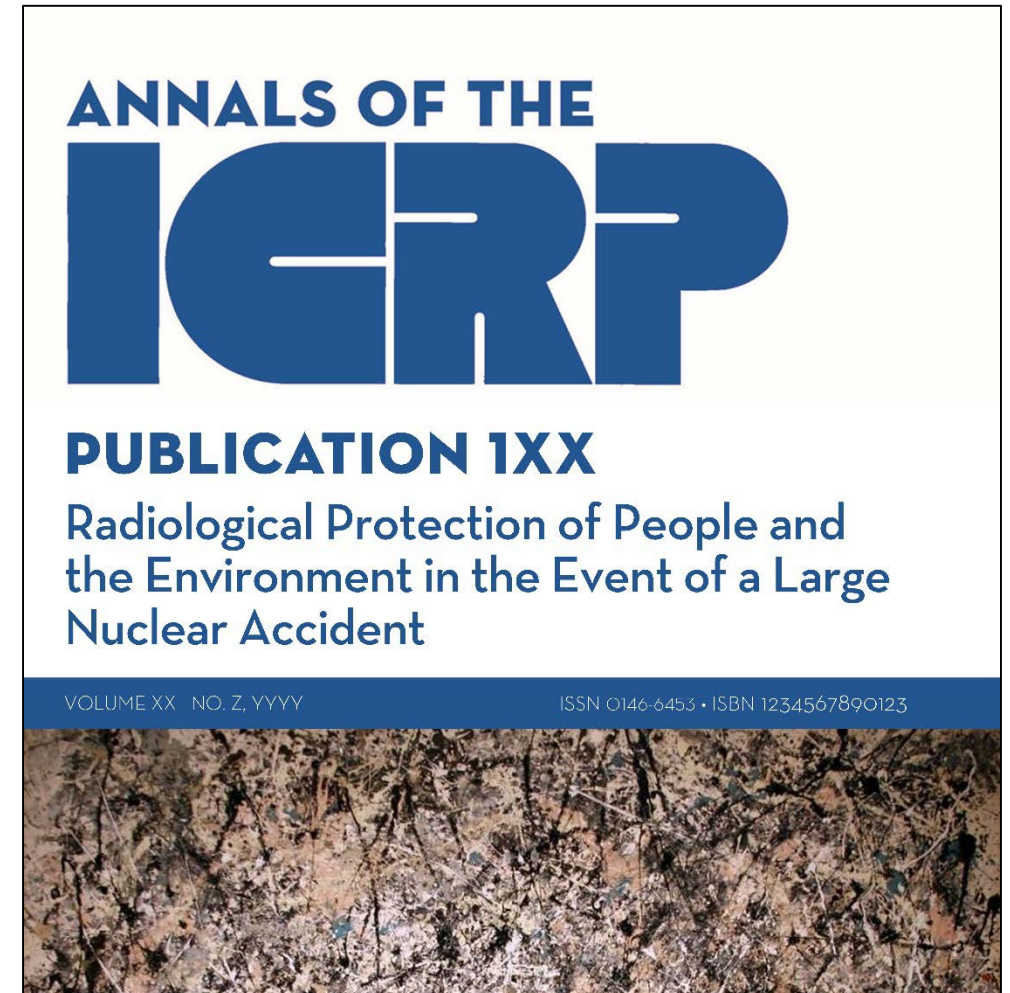


Successor to *Publications 109 & 111*

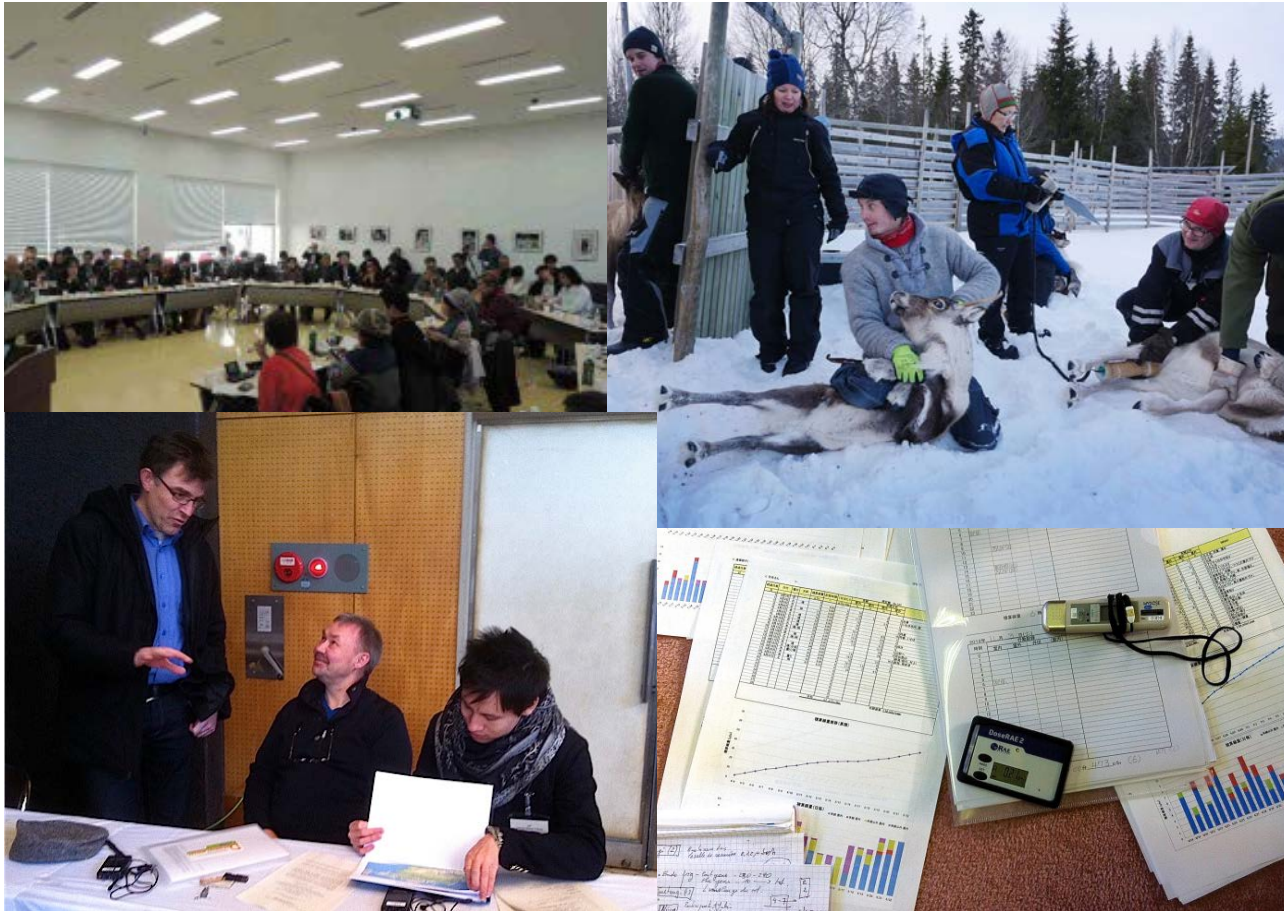
Will supersede *Publications 109 & 111*

However, the scope is narrower, covering only **large nuclear accidents** i.e. resulting in significant releases of radioactive material into the environment and impacting widespread areas

ICRP is considering future work to address other radiation emergencies and malicious events



ICRP Task Group 93 Benefitted from:



Lessons from the **Fukushima Daiichi accident**

Developments in protection of people in emergency exposure situations, and people living in long term contaminated areas after a nuclear accident

Very early assessment of issues by **Task Group 84**

Unprecedented Engagement in Development

Developed over **7 years** with **significant input from stakeholders**, especially but not only in Japan:

- Central government
- Local governments
- Impacted citizens
- Experts and expert organisations
- Nuclear power industry

Through Fukushima Dialogue Initiative, workshops, expert meetings, etc.



Unprecedented Public Interest (in Japan)

7 minute national news story on NHK (Japan's public broadcaster) specifically on the consultation on the draft report

Focus on language of reference level ranges:

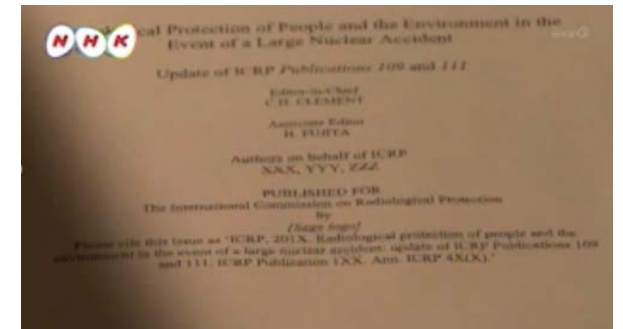
“lower part of 1-20 mSv”

“ ≤ 10 mSv”

“lower half of 1-20 mSv”

Interest groups requested public meetings and an extension of consultation

Many comments submitted by **individuals**



Unprecedented Consultation on Drafts



Invited peer-review of an advanced draft
(sent to many international organisations
and Japanese stakeholders)

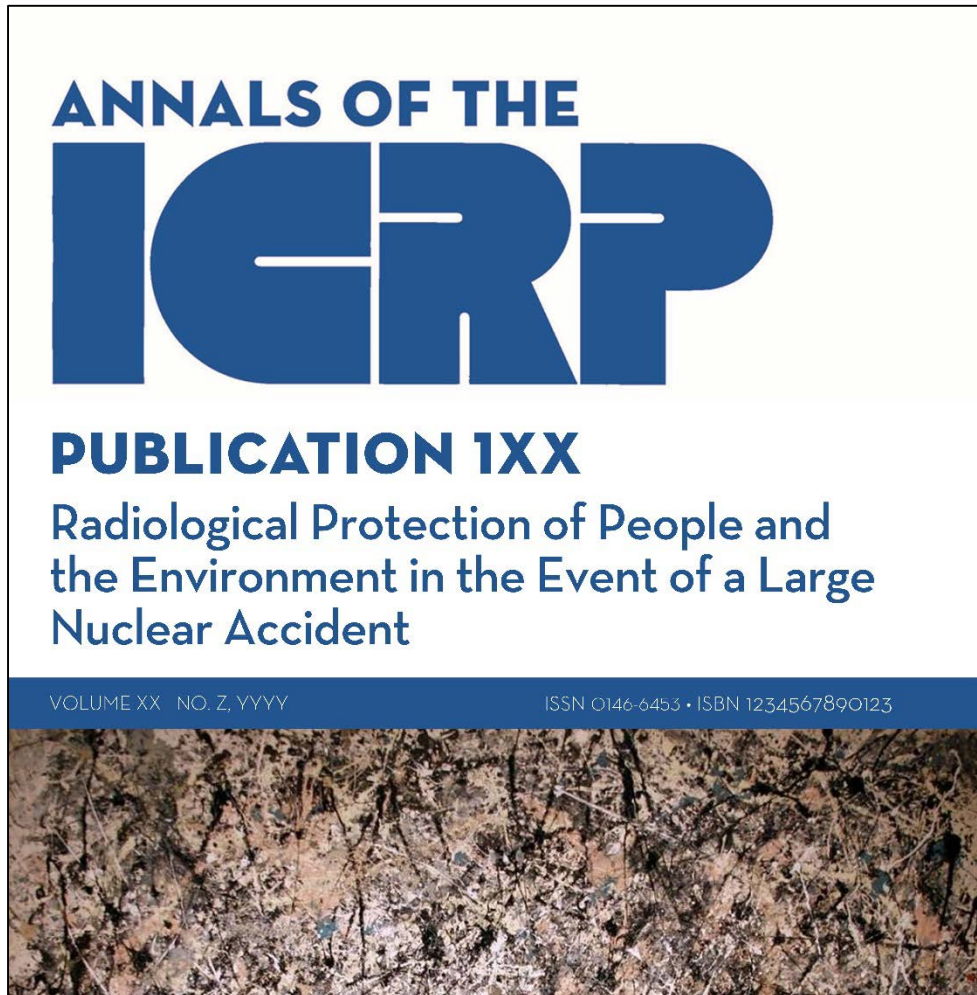
Presentation of a draft during a **Fukushima
Dialogue meeting**

Several **stakeholder workshops** in
Fukushima and **Tokyo** during consultation

Accepted comments in **Japanese**

A record **308 sets of comments** received
during the **extended** public consultation

Status of the New Publication



Consultation completed 25 Oct 2019

Significant effort is underway to reflect the many consultation comments

ICRP Main Commission will consider approving publication in May 2020

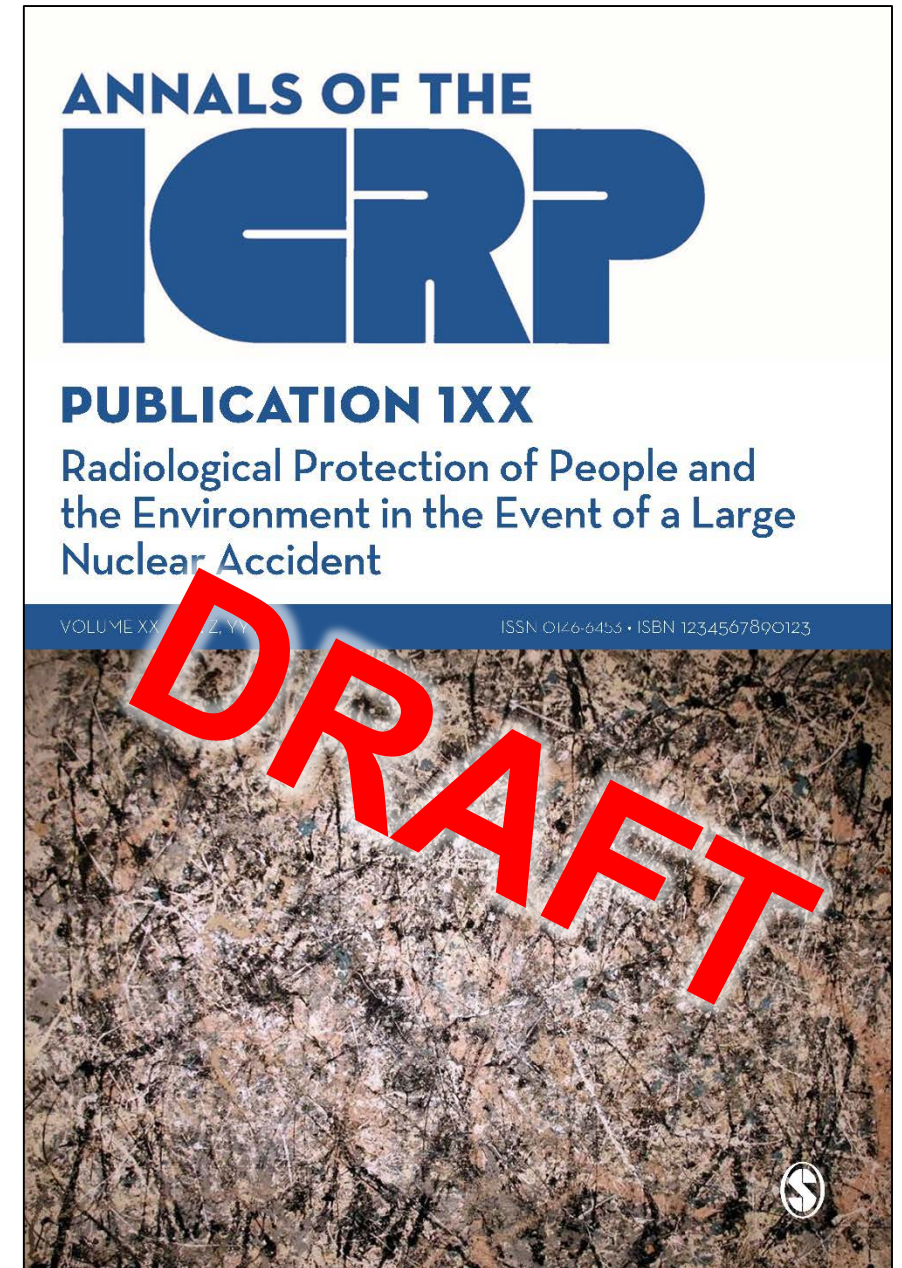
If approved, publication ~ Q3 2020

Resolution of comments document will accompany the publication

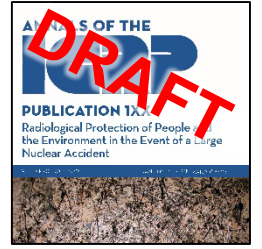
All following information is DRAFT

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Principles for Protection



For people: prevent severe tissue/organ damage, and reduce to the extent reasonably achievable cancer and heritable diseases

For the environment: Prevent or reduce frequency of deleterious radiation effects on biota

Consider potential adverse effects of radiation exposure on humans and biota, and the societal, economic, and psychological consequences of the accident and its management

Preserve, to the extent possible, the **health and well-being** of all affected individuals, **decent working conditions** for responders on-site, **quality of life** of affected communities off-site, and **biological diversity** in affected areas

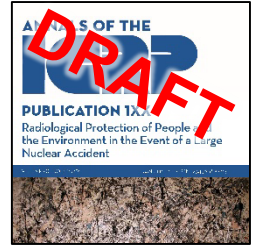
Main Point: Exposure Situations

The Commission distinguishes between an emergency response, managed as an **emergency exposure situation**, and transitioning to a recovery process, managed as an **existing exposure situation**

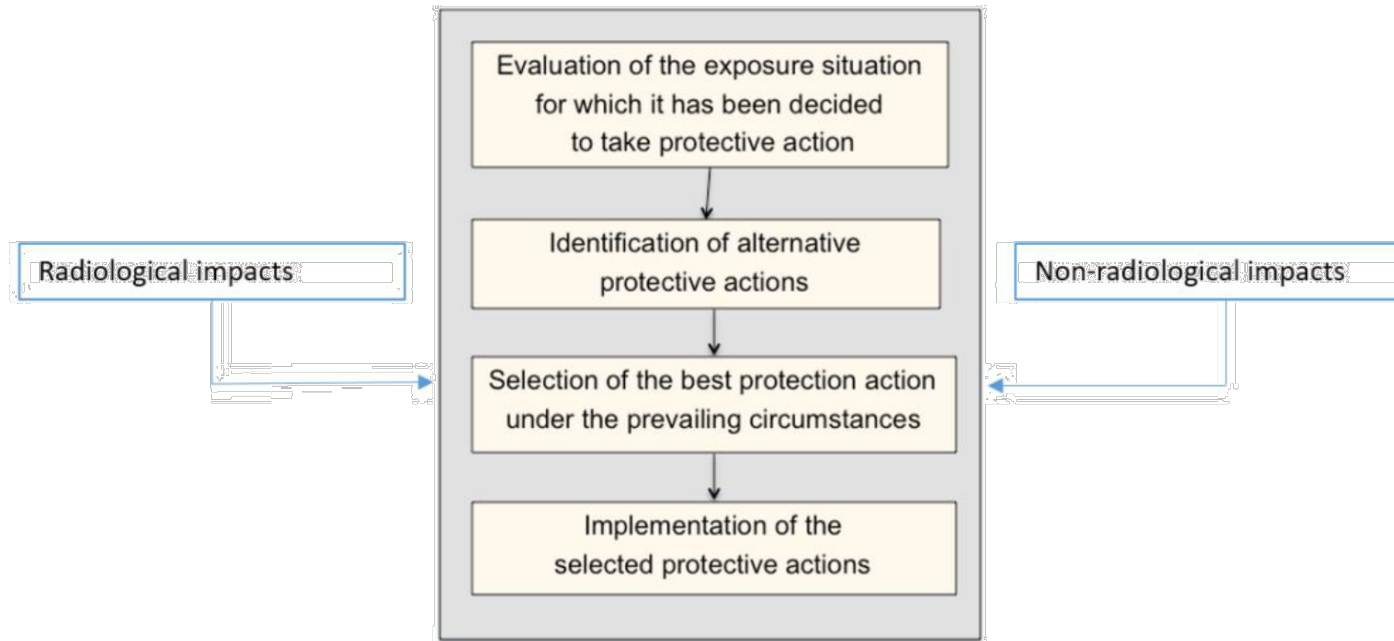
Emergency response		Recovery process
Early phase	Intermediate phase	Long-term phase



Main Point: Optimisation of Protection



The principle of **optimisation of protection** applied with **reference levels**, **considering all impacts** (radiological, non-radiological, social, economic, and environmental), is essential to mitigate the consequences during the emergency response and to improve living conditions in affected areas during the recovery process

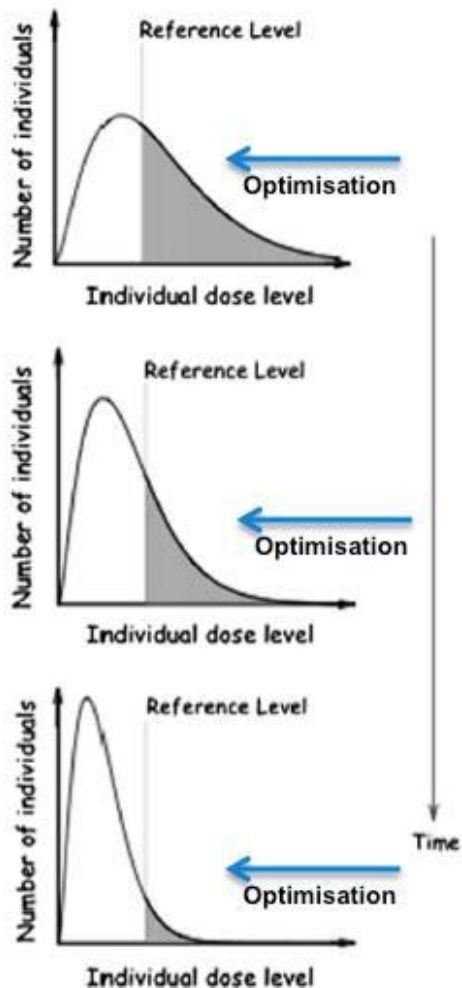


Main Point: Emergency Responders

For protection of responders and the population during the emergency response, the **reference level should not generally exceed 100 mSv**, while recognising that **higher values may be necessary** to save lives and for the prevention of catastrophic conditions



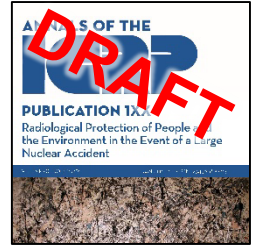
Main Point: RLs for Recovery



... during the recovery process ... reference levels should be selected to support ... progressive improvement ... within or below the ... **1–20 mSv band** taking into account the actual distribution of doses ... and the tolerability of risk for the long-lasting existing exposure situations, and would not generally need to exceed 10 mSv per year

The objective ... is a **progressive reduction in exposure to levels on the order of 1 mSv per year**

Reference Levels (revised post-consultation)



	Emergency Exposure Situation	Existing Exposure Situation
Public	$\leq 100 \text{ mSv}^*$	Lower half of the 1-20 mSv/y band [†] with the objective to reduce exposure progressively to levels close to 1 mSv/y or below
Responders	$\leq 100 \text{ mSv}^*$ Could be exceeded in exceptional circumstances [‡]	$\leq 20 \text{ mSv/y}$

* Previously, the Commission recommended the selection of a reference level in the 20-100 mSv (acute or in a year) band. The current recommendation recognises that the most appropriate reference level may be lower than 20 mSv in some circumstances.

[†] This clarifies the expression 'lower part' as used in *Publication 111*.

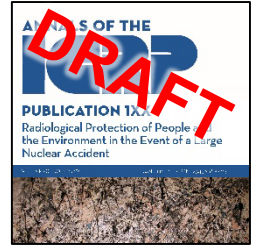
[‡] Take all practicable actions not to exceed 1000 mSv to avoid severe deterministic effects.

Main Point: Co-Expertise

Co-expertise is an approach in which authorities, experts, and stakeholders work together to share experience and information in affected communities, with the objective of developing a practical radiological protection culture to **enable individuals to make informed decisions about their own lives**



Recovery Process



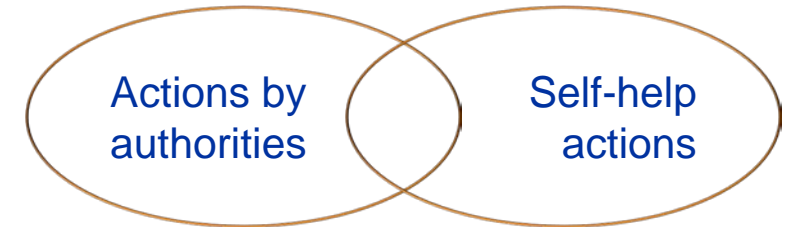
Stakeholder involvement in the **protection strategy** is central to success

Actions driven by authorities at national and local levels complement **self-help protective actions** implemented by affected people

Co-expertise facilitates radiological protection culture among local people allowing **informed protection decisions**

Eventually, exposures of people, fauna, and flora will decrease, and decisions must be made to **maintain, modify, or withdraw protective actions**

Protection Strategy



ICRP

INTERNATIONAL CONFERENCE ON RECOVERY AFTER NUCLEAR ACCIDENTS

*Radiological Protection Lessons from Fukushima
and Beyond*

30 November – 4 December 2020
Fukushima, Japan

会津地方

中通り

浜通り

ICRP Conference on Recovery after Nuclear Accidents: ORGANISATION

30 November to 4 December 2020

Iwaki area, Fukushima Prefecture

3 days of **presentations, panel discussions, posters, and displays**

2 days of **field visits**

Interim Storage Facility, Japan Atomic Energy Agency technical facilities, and other areas where recovery work is taking place

Public information session for non-specialists



ICRP Conference on Recovery after Nuclear Accidents: OBJECTIVES



Share **experiences and lessons** related to **radiological protection** aspects of recovery from the Fukushima Daiichi nuclear accident, the Chernobyl accident, and other events

Improve international understanding of the **current state of recovery** in Japan

Consider strategies that may **accelerate recovery**

Improve preparedness for recovery from possible future major nuclear accidents

ICRP Conference on Recovery after Nuclear Accidents



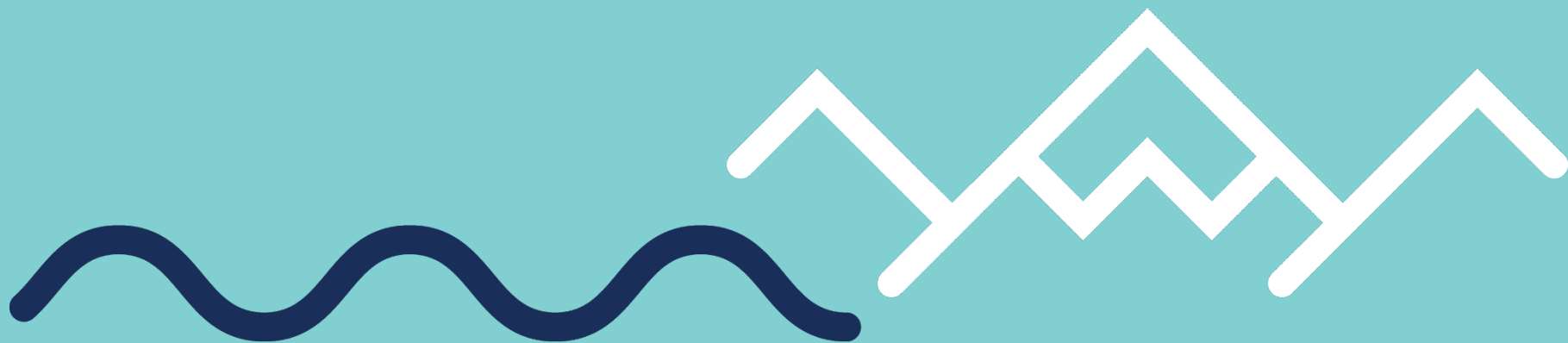
Organised by the International Commission on Radiological Protection

In collaboration with Japanese, International, and other organisations (to be announced in the coming months) – **opportunities for collaboration and support are still available**

Register interest via links at www.icrp.org

Contact hiroki.fujita@icrp.org for further information

Registration opens April/May 2020



ICRP2021

1-5 NOV 🍁 VANCOUVER

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