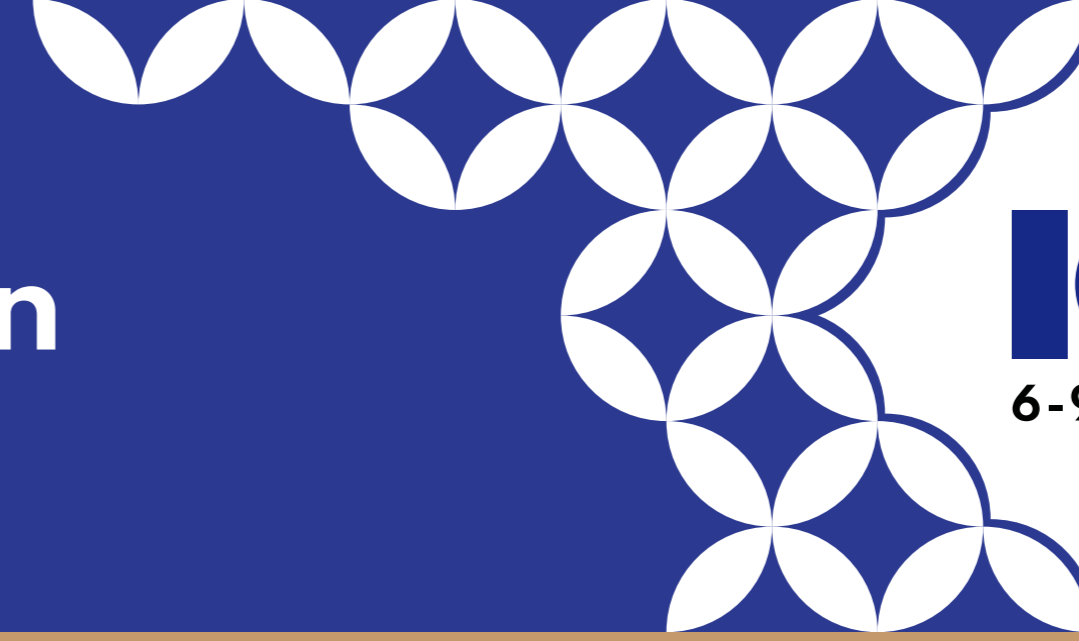


TASK GROUP 120

Radiological Protection for Radiation Emergencies and Malicious Events



Mandate

The Task Group will develop ICRP recommendations for radiological protection for a wide range of radiation emergencies and malicious events, complementing those given in Publication 146 (2020) for large nuclear accidents. In doing so, the Task Group will:

- Critically review the content of ICRP Publication 96 (2005) to identify out of date and redundant material as well as emerging gaps
- Broaden the scope to include other nuclear and non-nuclear radiation emergencies, not covered in ICRP Publication 146
- Conduct extensive literature reviews to ensure information provided is based on current scientific knowledge, evolving social values and practical experiences
- Provide consolidated, coherent, and comprehensive guidance on protection of people and the environment from accidents and malicious events, according to the exposure situation and using appropriate dose criteria

Scope

Accidents at nuclear and non-nuclear facilities:

- criticalities and operating faults (e.g. Tokaimura, 1999; Three Mile Island, 1979)
- fires and explosions at storage and waste disposal facilities (e.g. Kyshtym, 1957; Techa River, 1961; Hanford, 1976;)
- transport accidents (e.g. Palomares 1986, Cosmos 954, 1978)
- inadvertent damage to sealed sources (e.g. Goiania, 1987; Harborview, 2019)



Fig 1. Three Mile Island, 1979



Fig 2. Goiania, 1987



Fig 3. Poisoning of Litvinenko, 2006



Fig 5. Hypothetical RDD

Malicious events, both actual and hypothetical:

- sabotage of nuclear facilities or materials
- theft of radiation sources
- radiological dispersal devices (RDD)
- radiological exposure devices (RED)
- poisoning of individuals (e.g. Litvinenko, 2006)
- tactical use of nuclear weapons

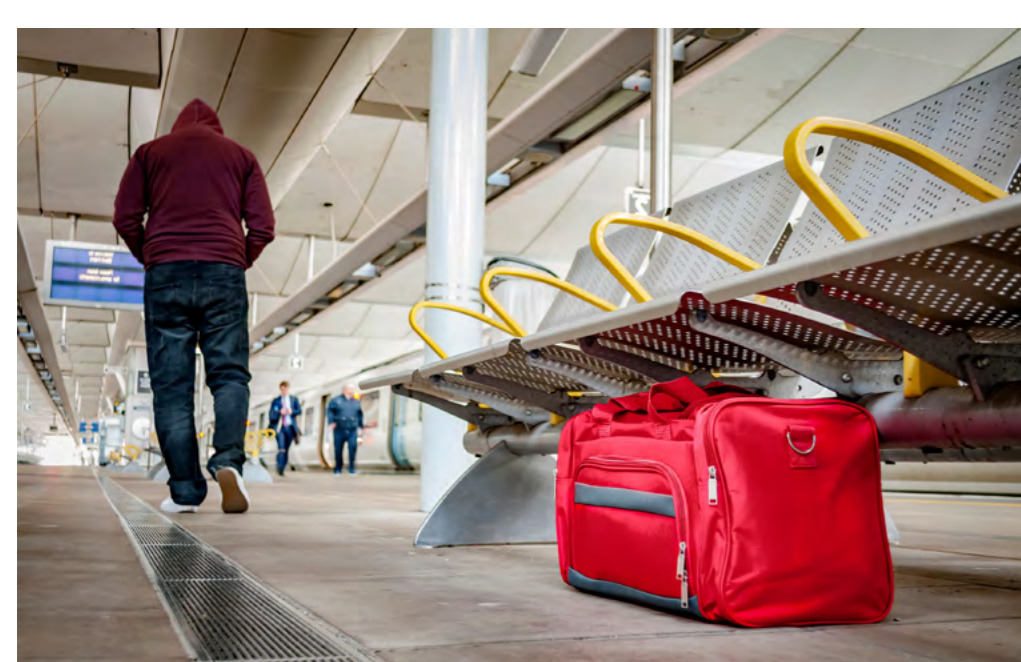


Fig 4. Hypothetical RED

Current Status

Since its inception in July 2021, the Task Group has:

- Held 7 meetings and 5 brainstorming sessions
- Completed a critical review of ICRP Publications 96 & 146
- Designed a template to collate relevant information on a wide range of case studies including nuclear accidents, other radiation emergencies and hypothetical malicious scenarios to ensure that the recommendations developed are broadly applicable and comprehensive
- Developed a detailed outline structure and content of its report
- Completed drafting assignments for chapter on 'general considerations'
- Published ICRP guidance for public protection in case of a nuclear detonation, including advice for the first 10 minutes, first 24 hours and next 48 hours. Additional information is provided on preparedness and responding to alerts.
- Recruited 2 mentees with backgrounds in social science and risk communication



Fig 6. How to survive a nuclear detonation

Next Steps

- A series of brainstorming sessions to deep dive into (i) priorities for communication, (ii) deriving radiological criteria for early response phase, (iii) identification of affected populations and environments
- Drafting assignments relating to radiological protection advice for responders and members of the public during early response phase, highlighting differences between accidents and malicious events
- Guidelines on when, how and what to communicate; including how to counter misinformation. Production of templates for social media messaging following a radiation emergency

Approach

The Task Group will interface with liaison organizations for participation in topical workshops involving various groups, to both inform the Task Group discussions, and engage stakeholders as the ICRP positions are developed.

