TASK GROUP 120

Radiological Protection for Radiation Emergencies and Malicious Events

Under Committee 4

ICRP 2025
8TH INTERNATIONAL SYMPOSIUM ON THE SYSTEM OF RADIOLOGICAL PROTECTION

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- Critically review the content of ICRP Publication 96 (2005) to identify out of date and redundant material as well as gaps such as nuclear detonations
- Broaden the scope to include other nuclear and non-nuclear radiation emergencies, not covered in ICRP Publication 146, including the impact of armed conflict
- 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 involving radioactive material
  - 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)
- Malicious acts, both actual and hypothetical
  - sabotage of nuclear facilities or materials
  - radiological dispersal devices (RDD)
  - radiological exposure devices (RED)
  - poisoning of individuals (e.g. Litvinenko, 2006)
  - contamination of food and drinking water supplies
  - nuclear detonations

Fig 1: Three Mile Island, 1979

Fig 2. Goiania, 1987

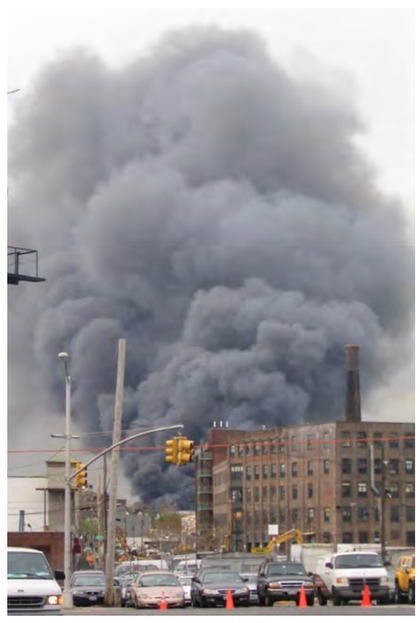


Fig 5. Hypothetical RDD

Fig 3. Poisoning of Litvinenko, 2006

Fig 4. Hypothetical RED

CURRENT STATUS

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

- Held 16 meetings and 12 brainstorming sessions
- Completed a critical review of ICRP Publications 96 and 146
- Designed and populated a template to collate relevant information on radiological and non-radiological information for a wide range of case studies; 15 templates have been completed
- Completed sections of the TG120 report relating to 'general considerations' and 'the early response phase', encompassing recommendations for the protection of responders, the public and the environment.
- 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

Fig 6. How to survive a nuclear detonation

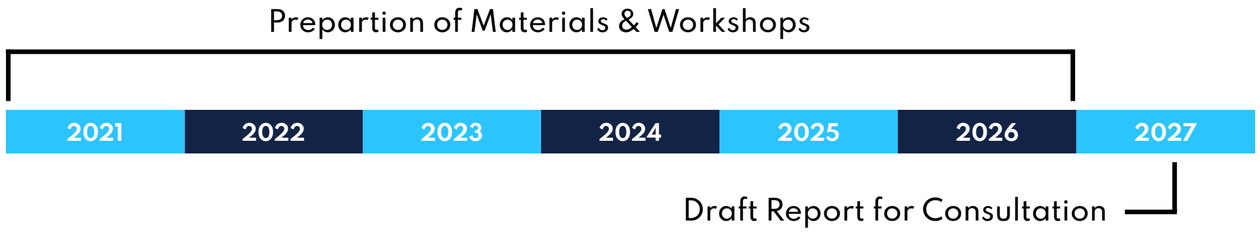
- Produced guidelines for for communicating during the first hour, first day and first week following the radiation emergency
- Undertaken extensive outreach at numerous international conferences, symposia and workshops, as well as through publications in peer reviewed journals

NEXT STEPS

- Drafting assignments relating to radiological protection advice for responders and members of the public during the late response phase
- Drafting assignments relating to planning and preparedness
- Production of a webpage providing guidance on the drafting of social media messages following a radiation emergency

APPROACH

The Task Group will interface with other ICRP Task Groups and Special Liaison Organisations. It will participate in topical workshops involving various groups, to both inform the Task Group discussions, and engage stakeholders as the ICRP positions are developed.



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