



**UNSCEAR**

United Nations Scientific Committee  
on the Effects of Atomic Radiation

# UNSCEAR Global Survey on Public Exposure

## Topical Webinar: Past Activities and Accidents

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13 May 2021



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# Past Activities and Accident – Scope

- Data relating to public exposure resulting from:
  - Military uses
    - Nuclear test sites
  - Global fallout
  - Legacy sites
    - Past industrial activities with NORM
    - Waste disposal
    - Past activities with artificial radionuclides
  - Nuclear and radiological accidents
    - Fukushima
    - Chernobyl
    - Mayak
    - Others
  - Sea disposal of radioactive wastes
- Exposures relating to the survey period 2007-present



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# Public Exposure from contaminated sites

- Long lived fission and neutron activation products
  - e.g. Cs-137, Cs-134, Sr-90, Co-60, Pu isotopes, Am-241, etc.
- Long lived natural radionuclides
  - e.g. Ra-226, U-238, etc.
- Gamma exposure to public
- From sites that are
  - Past industrial activities including waste disposal & sea dumping
  - Nuclear weapons test sites
  - Past nuclear and radiological accidents



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# Exposed Populations and Exposure Pathways

- Members of the public
  - General public, most exposed individuals and children
  - Exposed or potentially exposed
- Global fallout from atmospheric tests
  - General public



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# Environmental Measurements of Human Environment

- Releases to the environment
- Air dose rates
- Activity concentrations
  - Soil, building materials, industrial products and wastes
  - Air for inhalation assessments
  - Foods and drinking water
- Human measurements
  - Used to assess dose from whole body counting



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# Methodology

- UNSCEAR methodology as applied to other reports
  - Methodology as applied for external and internal public exposure with environmental radionuclides and long-term post-accident exposures
  - Fukushima, Chernobyl, UNSCEAR 2008 & UNSCEAR 2000
- Methodology updates where required
  - i.e. dose coefficients and model parameters
- Uncertainties and variables
  - As being developed for the project



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# Data Required

- General data
  - Country, date, population & NCP details
- Essential data
  - Site information, location, area of contamination, contamination type, total inventory, type of radionuclides, environment type, source of contamination
  - Number of exposed individuals, average & collective effective doses, pathways of exposure, activity concentrations or surface density
  - References
- Data to be sourced from survey and literature



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# References

- NCPs are in the best position to obtain nationally published references
- National reports relating to the status of legacy sites and estimates of public exposure
- Most recent reports even if they are prior to 2007
- Any other peer reviewed publications relating to sites





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# Format of Survey – General Information

| United Nations Scientific Committee<br>on the Effects of Atomic Radiation  |   |
|--|---|
| Version 1.7 PE-SG7 2021-03-01  | Please read the further instructions given as comments. They become visible when moving the mouse cursor on the cells.<br>Do not modify the structure of this spreadsheet, as it will be processed automatically. |
| <b>General information</b>   |   |
| <b>Country information</b>   |   |
| Country code   | 036   |
| Date of submission   | generated on upload   |
| Years (period, from [year] to [year] )*  |   |
| Population [inhabitants]* (local, national or regional)  |   |
| Population (survey base)*  |   |
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| Institution  |   |
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| <b>Comments</b>  |   |
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# Report

- Data published in compiled tables and graphs
- Effective doses to members of the public from past activities and accidents
- Geographical/regional and temporal trends where available