

# UNSCEAR GLOBAL SURVEY

## Web version

April 2006

### QUESTIONNAIRE

#### **Global Survey of Occupational Radiation Exposures (1995-2002)**

The United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) was established by the United Nations General Assembly to assess and report levels and effects of ionizing radiation. Governments and organizations throughout the world rely on its reports to provide the basis for evaluating radiation risks and for establishing protective measures. In this regard, UNSCEAR collects and analyses global data on occupational exposure to radiation from natural and man-made sources. The next UNSCEAR report to the General Assembly on this subject is envisaged for the year 2007. In order to prepare this report, Member States were requested in 2001 and 2004 to consider providing data to extend the previous UNSCEAR evaluation that was issued in the year 2000.

The General Assembly in its resolution A/60/98 of 8 December 2005 has expressed “its appreciation for the assistance rendered to the Scientific Committee by Member States”, and invited them to “increase their cooperation in this field” and to provide “further relevant data about doses [...] from various sources of radiation, which would greatly help in the preparation of future reports of the Scientific Committee to the General Assembly”.

This present document is to serve both as a reminder to those Member States who have not as yet responded to the request for information, and as an opportunity for others to consider providing additional or updated data.

The data solicited with this Questionnaire are for the period 1995–2002. The questionnaire is formulated as six Microsoft Excel<sup>®</sup> workbooks:

Workbook W1	<b>Nuclear fuel cycle</b>
Workbook W2	<b>Medical uses</b>
Workbook W3	<b>Industrial uses</b>
Workbook W4	<b>Natural sources</b>
Workbook W5	<b>Defence activities</b>
Workbook W6	<b>Miscellaneous</b>

Each workbook comprises several worksheets. Electronic copies of these Excel<sup>®</sup> workbooks can be downloaded from the UNSCEAR web-site ([www.unscear.org](http://www.unscear.org)) or requested by addressing an e-mail to:

[susan.habersack@unscear.org](mailto:susan.habersack@unscear.org)

In order for data to be analysed and published in the next UNSCEAR Report, completed worksheets must be returned to the UNSCEAR Secretariat no later than **31 July 2006**.

All contributions will be acknowledged in the report to the General Assembly.

## Notes for completion of the workbooks

The objective of the survey is to assess long-term trends in occupational radiation exposures, identifying the main contributors to these exposures and the distributions of exposures within various work categories.

### Data for specific occupational categories

#### **Workbook W1: Nuclear fuel cycle**

- W1A Uranium mining
- W1B Uranium milling
- W1C Uranium enrichment and conversion
- W1D Fuel fabrication
- W1E Reactor operation
- W1F Fuel reprocessing
- W1G Research in the nuclear fuel cycle

#### **Workbook W2: Medical uses**

- W2A Diagnostic radiology
- W2B Dental radiology
- W2C Nuclear medicine
- W2D Radiotherapy
- W2E All other medical uses

#### **Workbook W3: Industrial uses**

- W3A Industrial irradiation
- W3B Industrial radiography
- W3C Luminizing
- W3D Radioisotope production

- W3E Well-logging
- W3F Accelerator operation
- W3G All other industrial uses

#### **Workbook W4: Natural sources**

- W4A Civilian aviation
- W4B Coal mining
- W4C Other mineral mining
- W4D Oil and natural gas industries
- W4E Handling of minerals and ores

#### **Workbook W5: Defence activities**

- W5A Nuclear ships and support facilities
- W5B All other defence activities

#### **Workbook W6: Miscellaneous**

- W6A Educational establishments
- W6B Veterinary medicine
- W6C Other specified occupational group
- W6D Accidents with serious effects

Occupational exposure is defined here as all exposure that occurs while the employee is at work. However, in practice it is normal to subtract from the passive dosimeter reading the exposure that the dosimeter received while it was not being worn. Doses can also be assessed, for example, from area monitoring and estimates of occupancy times, or based directly on individual dose measurements. In reporting results, please describe the dosimetric procedure used, any assumptions made and values of key assumed parameters.

“Occupational group” refers to any subgroups within the general category for which data are collected and can usefully be presented separately. For example under Reactor operation (Form W1E) the “operational group” could be used to distinguish between occupational doses received according to specific reactor types (PWR, BWR, HWR, GCR, LWGR, FBR, other); and/or between employees and contractors; and, if data are available, between occupational doses received by particular groups of workers, such as reactor operators, health physicists and so on. In a similar manner, for Radiotherapy (Form W2D) it would be helpful to distinguish between doses received by workers performing teletherapy and those performing brachytherapy as well as between medical and nursing staff. If no indication is given, data will be assumed to apply to the entire category.

“Monitored workers” are defined here as those for whom individual dose records are maintained. The dosimetric information requested is the total effective dose. Please specify if the dose is primarily due to exposure to radon or other natural sources, and if internal or neutron exposures have made significant contributions to the total. These data, if available, may be submitted on additional forms. If protective equipment (e.g. lead aprons) are worn, specify whether the dosimeter was worn under or over the protective equipment. The dose estimates may be determined from dosimeter readings, ambient monitoring, reconstructions (in the case of lost or damaged dosimeters) or from other means.

The number of “measurably exposed” workers will be inferred from the number of workers above the minimum detectable level (MDL), an indication of the dosimeter sensitivity. If a higher level is used as a minimum reporting level, please specify this level in place of the MDL. For doses less than the MDL, indicate the value recorded, e.g. 0, 0.5 MDL or the MDL value.

Any bibliography, reference documents, additional papers and reports that can be enclosed in support of the data would be particularly helpful and are welcomed. Also, please feel free to add comments to your answers or to supply any other information that might be of interest to the review by UNSCEAR.

Please complete those workbooks/worksheets that are relevant to your country as fully as possible with available information – however UNSCEAR is interested in responses even if the information is incomplete. For information to be considered by UNSCEAR in its final report on occupational exposures, the responses must be returned, preferably by email, no later than the end of **31 July 2006** to:

UNSCEAR Secretariat  
Vienna International Centre  
Wagramerstrasse 5  
P.O.Box 500  
A-1400 Vienna, Austria

E:mail address: [susan.habersack@unscear.org](mailto:susan.habersack@unscear.org)

Your assistance in contributing to this important survey is very much appreciated. UNSCEAR will inform you of the results in due course.

UNSCEAR also encourages the relevant competent bodies to have systems in place for routinely collecting such data so that they can contribute to future global surveys effectively and efficiently.