



UNSCEAR

United Nations Scientific Committee
on the Effects of Atomic Radiation



60
years

EVALUATING SCIENCE FOR INFORMED DECISION-MAKING

unscear.org



- ▶ United Nations Scientific Committee reports to the General Assembly
- ▶ Assesses global levels and effects of ionizing radiation
- ▶ Provides scientific basis for protection and policy

“with scientific authority and independence of judgement”*

“world authority on global levels and effects of ionizing radiation”



ABOUT UNSCEAR

In 1955, the United Nations General Assembly established the Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) in response to concerns about the effects of ionizing radiation on human health and the environment. At that time, fallout from atmospheric nuclear weapons tests was reaching people through air, water and food. UNSCEAR was tasked with collecting and evaluating information on the levels and effects of ionizing radiation. Its first reports laid the scientific grounds on which the Partial Test Ban Treaty prohibiting atmospheric nuclear weapons testing was negotiated in 1963.

Over the decades, UNSCEAR has evolved to become the world authority on global levels and effects of atomic radiation. UNSCEAR's independent and objective evaluation of the science is to provide for—but not address—informed decision- and policymaking related to radiation risks and protection.

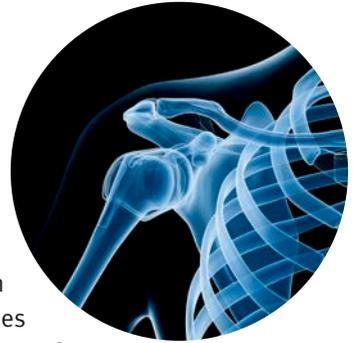
The United Nations General Assembly requested the following 27 countries to designate scientists to constitute UNSCEAR: Argentina, Australia, Belarus, Belgium, Brazil, Canada, China, Egypt, Finland, France, Germany, India, Indonesia, Japan, Mexico, Pakistan, Peru, Poland, Republic of Korea, Russian Federation, Slovakia, Spain, Sudan, Sweden, Ukraine, United Kingdom and United States.

UNSCEAR's future outlook is challenged by the flood of new information to be reviewed and synthesized into a coherent picture for use by policymakers and other stakeholders. The central role of UNSCEAR in developing a coherent understanding of radiation levels and effects will continue to be crucial in the future in areas concerning medical uses of radiation, emergency preparedness, environmental rehabilitation, waste disposal and the nuclear power option.

“valuable assessments for governments and international bodies”

LEVELS OF RADIATION

Even if treaties ban the testing of nuclear weapons, radiation comes from many other sources. Everyone is exposed to one of the most significant among them—natural sources. These include cosmic rays, radon and other radioactive elements naturally present in the environment. In addition, nuclear reactors are used in many countries to produce electricity, radioactive sources are used in industry and research, and the medical uses of radiation are common throughout the world. UNSCEAR evaluations show that the medical use of radiation dominates exposure to artificial sources.



UNSCEAR systematically evaluates global and regional levels and trends of radiation exposure of the public, of workers and of patients undergoing diagnosis or therapy. These evaluations are valuable to governments and to international bodies such as the International Atomic Energy Agency, the International Labour Organization and the World Health Organization, and have helped foster efforts to manage radiation exposures appropriately.

The United Nations General Assembly encourages Member States to take part in UNSCEAR’s Global Survey on Radiological Exposure and to nominate—via official channels—national contact persons (NCPs) to coordinate data collection at the country level and to ensure that they are representative and scientifically objective. NCPs are also responsible for the submission of data via UNSCEAR’s online platform.



For more information on
UNSCEAR’s online platform

survey.unscear.org

“synthesizes advances in scientific understanding”

EFFECTS OF RADIATION

High levels of radiation exposure (thousands of times greater than the average annual exposure) can cause radiation burns, acute radiation sickness or even death. At lower levels of exposure (hundreds of times greater than the average annual exposure), the principal concern is increased incidence of cancer among the population exposed. UNSCEAR regularly evaluates the evidence for radiation-induced health effects derived from studies of the survivors of the 1945 atomic bombings in Japan and other exposed groups.



At lower levels of exposure (comparable with the average annual exposure), any increases in cancer rates would be difficult or even impossible to discern. Therefore, UNSCEAR synthesizes advances in the scientific understanding of the mechanisms by which the health effects of radiation can manifest themselves. These assessments provide a scientific foundation used by the International Commission on Radiological Protection in developing its recommendations on radiation protection and by the relevant agencies in the United Nations system in the formulation of safety standards.

The United Nations General Assembly requested UNSCEAR to further clarify the assessment of potential harm owing to chronic exposures to low doses among large populations, attributing health effects to radiation exposure and inferring risks. UNSCEAR summarizes the available information and state of knowledge regarding the risks associated with such exposure in its 2012 Report.

Ionizing radiation (also known as atomic radiation) is energy in the form of particles or electromagnetic waves powerful enough to liberate electrons from atoms. Alpha and beta particles, and gamma and X-rays, are examples of ionizing radiation. Radio waves and ultraviolet, infrared and visible light are forms of non-ionizing radiation.

UNSCEAR’s remit is to deal only with ionizing radiation.

“assessment of exposures from major radiation accidents early on”



RADIATION ACCIDENTS

Chernobyl accident

The Chernobyl accident in 1986 was a tragic event for its victims, and those most affected suffered major hardship. UNSCEAR was involved from early on in the assessment of radiation exposures and health effects. In 1988, it published a study of acute radiation effects in emergency workers and of global fallout and exposures. A more detailed assessment of radiation levels and effects was published in 2000.

Apart from the increase in thyroid cancer incidence among those exposed at a young age, and some indication of increased leukaemia and cataract incidence among the workers, there is no clearly demonstrated increase in the incidence of solid cancers or leukaemia due to radiation among the exposed populations.

Thus, UNSCEAR concluded that the vast majority of people, even in areas most affected by the Chernobyl fallout, need not live in fear of serious health consequences from radiation exposure. The recognition of this conclusion has changed the focus of international efforts to address the consequences of the accident. Based on more recent information, UNSCEAR has updated the details of its assessment in its 2008 Report, which is also available in Russian.

Fukushima-Daiichi accident

In March 2011, the Fukushima-Daiichi nuclear power plant suffered major damage after the great east-Japan earthquake and subsequent tsunami. The General Assembly endorsed UNSCEAR's decision to carry out a full evaluation of the levels of exposure and possible health effects. The questions addressed include: How much radioactive material was released and what was its composition? How was it dispersed over land and sea? What is the likely radiation impact on human health and the environment?

UNSCEAR concluded in its 2013 Report that no radiation-related deaths or acute diseases were observed among the workers and general public exposed to radiation from the accident. The full report and its supporting annexes are also available in Japanese. UNSCEAR has also established a mechanism to closely follow and review scientific literature in order to keep abreast of the latest developments and assess how they correlate with the main findings of the UNSCEAR 2013 Report. A first review has been published as a “White Paper”, which is also available in Japanese.

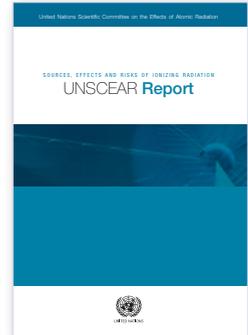
“highly regarded as authoritative reviews”

UNSCEAR PUBLICATIONS

UNSCEAR produces detailed reports for the United Nations General Assembly, which are published by the United Nations. These are highly regarded as authoritative evaluations examining radiation exposure from natural sources, nuclear power production and nuclear weapons tests, medical diagnosis and treatment, and occupational radiation sources. They also evaluate detailed studies on radiation-induced cancer and hereditary diseases, and assess the radiological consequences of accidents on health and the environment.

UNSCEAR secretariat

The UNSCEAR secretariat in Vienna, Austria, for which the United Nations Environment Programme has organizational responsibilities, manages the preparation of documents for the Scientific Committee’s scrutiny and organizes and services the annual sessions. Many national and international organizations contribute significantly to the work of UNSCEAR and its secretariat.



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* The statement cited on the cover page was first used in General Assembly Resolution 52/32 of 11 November 1980.