

## IAEA BACKGROUND DOCUMENT ON CHORNOBYL

The accident at the Chernobyl Nuclear Power Plant (NPP), occurred on 26 April 1986. Following the accident, the Agency called for a post-accident review meeting on the accident in Vienna, which was followed by the publication of a summary report of the meeting from the IAEA International Nuclear Safety Advisory Group<sup>1</sup>.

On May 11 1988, 2 years after the accident a Conference on ‘Medical aspects of the Chernobyl accident’ was organized in Kiev by the USSR’s Ministry of Public Health and its proceeding were published by the IAEA providing one of the first accounts of the health effects of the accident<sup>2</sup>.

Towards the end of 1989, the government of the USSR requested the IAEA to coordinate the organization and implementation of a project to carry out an international assessment of the USSR’s intention to allow the population to live in some areas affected by radioactive contamination after the accident and an evaluation of the effectiveness of the steps taken in these areas to safeguard the health of the population.

Following this request, the IAEA coordinated that major international [project](#) that involved all relevant organizations of the UN system, with the purpose of assessing the radiological consequences of the accident and evaluating protective measures.<sup>3</sup> The project was led by Dr Itsuzo Shigematsu, Chairman of the Hiroshima’s Radiation Effects Research Foundation (RERF) and involved about 200 international experts in the field.

The outcomes of IAEA project as well as other national and international assessments of the accident aftermath were addressed at an international conference entitled “*One Decade After Chernobyl: Summing up the Consequences of the Accident*”<sup>4</sup>, which was held in April 1996 and which was co-sponsored by the IAEA and other relevant international organizations. Dr. Angela Merkel, the then German Minister for the Environment, Nature Conservation and Nuclear Safety, presided over this Conference.

In 2003, a ‘Chernobyl Forum’, was established by the IAEA in cooperation with the governments of the most affected countries — Belarus, Russian Federation and Ukraine as well as with relevant international organisations to address recovery operations and to carry out radiological assessments of the affected areas. The Forum’s

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<sup>1</sup> Summary Report on the Post-Accident Review Meeting on the Chernobyl Accident. A report by the International Nuclear Safety Advisory Group. Safety Series No. 75-INSAG-1, IAEA, Vienna (1986).

<sup>2</sup> Medical Aspects of the Chernobyl Accident; IAEA-TECDOC-516; ISSN 1011-4289; IAEA, Vienna, Austria; July 1988

<sup>3</sup> The International Chernobyl Project: Technical Report -Assessment of Radiological Consequences and Evaluation of Protective Measures. Report by an International Advisory Committee. IAEA, Vienna, 1991 (ISBN 92-0-129191-4)

<sup>4</sup> Proceedings of an International Conference on One Decade After Chernobyl: Summing Up the Consequences of the Accident; jointly sponsored by the European Commission, International Atomic Energy Agency, World Health Organization, in co-operation with the United Nations (Department of Humanitarian Affairs), ... [et al.], and held in Vienna, Austria, 8-12 April 1996. IAEA, Vienna 1996. (Proceedings series, ISSN 0074-1884; STI/PUB/1001; ISBN 92-0-103796-1)

results were presented at the 2005 international conference on “*Chernobyl: Looking Back to Go Forward*,”<sup>5</sup> organized by the IAEA on behalf of the Chernobyl Forum. Dr. B.G Bennett from the Radiation Effects Research Foundation Japan/USA presided over this Conference.

The findings of the two aforementioned conferences, as well as other national and international initiatives, were subsequently taken into account by the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), which was mandated by the United Nations General Assembly (UNGA), to estimate the levels and effects of radiation exposures attributable to the Chernobyl NPP accident. The 2008 UNSCEAR report to UNGA<sup>6</sup> concluded that the observed health effects attributable to radiation exposure were:

“- 134 plant staff and emergency workers received high doses of radiation that resulted in acute radiation syndrome (ARS), many of them also incurring skin injuries due to beta irradiation;

- The high radiation doses proved fatal for 28 of those people;

- While 19 ARS survivors had died up to 2006, their deaths had been for various reasons, and usually were not associated with radiation exposure;

- Skin injuries and radiation-related cataracts are major impacts for the ARS survivors;

- Other than this group of emergency workers, several hundred thousand people were involved in recovery operations but, apart from indications of an increase in incidence of leukaemia and of cataracts among those who received higher doses, there is no evidence of health effects that can be attributed to radiation exposure;

- The contamination of milk from I<sup>131</sup>, for which prompt countermeasures were lacking, resulted in large doses to the thyroids of members of the general public; this led to substantial fraction of the more than 6,000 thyroid cancers observed to date among people who were children or adolescents at the time of the accident (by 2005, 15 cases have proved fatal);and

- To date there has been no persuasive evidence of any other health effect in the general population that can be attributed to radiation exposure.”

The UNGA subsequently adopted a [Resolution](#)<sup>7</sup> welcoming the 2008 UNSCEAR report. Further to its report in 2008, UNSCEAR continued to assess the

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<sup>5</sup> Proceedings of an International Conference on Chernobyl: Looking Back to go Forward; organized by the International Atomic Energy Agency on behalf of the Chernobyl Forum and held in Vienna, 6–7 September 2005. IAEA, Vienna, 2008 (ISSN 0074–1884; STI/PUB/1312; ISBN 978–92–0–110807–4)

<sup>6</sup> UN Report of the United Nations Scientific Committee on the Effects of Atomic Radiation 56th session (July 2008). General Assembly; Records; Sixty-third Session; Supplement No. 4; Document A/63/46.

<sup>7</sup> United Nations General Assembly. Sixty-third session; Agenda item 27. Resolution 63/89 Effects of atomic radiation; adopted by the General Assembly on 5 December 2008 [on the report of the Special Political and Decolonization Committee (Fourth) (A/63/398)]

radiation levels and effects of the Chomobyl accident but the updated information did not alter its previous general conclusions.

Also, following the publication of various reports, academic papers and media articles, on large carcinogenic and hereditary health effects being attributed to the relatively low long-term radiation doses in the aftermath of the Chornobyl accident, the United Nations General Assembly (UNGA) adopted a Resolution in 2007<sup>8</sup> recalling UNSCEAR's intention "to clarify further the assessment of potential harm owing to chronic low-level exposures among large populations and also the attributability of health effects" and encouraged UNSCEAR "to submit a report on that issue at its earliest convenience."

Thus, in its 2012 report to UNGA, UNSCEAR addressed the attribution of health effects to different levels of exposure to ionizing radiation, and [concluded](#),<sup>9</sup> *inter alia*, that: an increase in the incidence of hereditary effects in human population cannot be attributed to radiation exposure; and, in general, increases in the incidence of health effects in populations cannot be attributed reliably to chronic exposure to radiation at levels that are typical of the global average background levels of radiation. Therefore, UNSCEAR declared that it did not recommend multiplying very low doses by large numbers of individuals to estimate numbers of radiation-induced health effects within a population exposed to incremental doses at levels equivalent to or lower than natural background levels. UNGA, in 2012, adopted a [Resolution](#)<sup>10</sup> welcoming with appreciation the 2012 UNSCEAR report.

More recently, in 2018, UNSCEAR issued a white paper on evaluation of data on thyroid cancer in regions affected by the Chornobyl accident. The paper concluded that the previously observed increase in the incidence of thyroid cancer was attributable to a variety of factors such as: increased spontaneous incidence rate with ageing of the birth cohort exposed as children or adolescents in 1986 to radiation exposure; increased awareness of thyroid cancer risk after the accident, and improvement of diagnostic methods to detect thyroid cancer. UNSCEAR estimated in the paper that a fraction of the incidence of thyroid cancer attributable to radiation exposure due to the Chornobyl accident among non-evacuated residents of Belarus, Ukraine and the four most contaminated oblasts of the Russian Federation, who were children or adolescents was in the order of 25%.

In 2019, the Secretary General of the United Nations took account of all the findings of the relevant organizations of the UN system and produced a report on the persistent legacy of the Chornobyl disaster.<sup>11</sup> It concluded that despite the efforts made during the past decade to better understand the risk of radiation-induced thyroid cancer, UNSCEAR notes that open questions still remain on the health status of the affected

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<sup>8</sup> United Nations General Assembly; Sixty-second session; Agenda item 30. Resolution 62/100 on Effects of atomic radiation; adopted by the General Assembly on 17 December 2007 [on the report of the Special Political and Decolonization Comité (Fourth Committee) (A/62/402)]

<sup>9</sup> United Nations Report of the United Nations Scientific Committee on the Effects of Atomic Radiation; Fifty-ninth session (21-25 May 2012) General Assembly; Official Records; Sixty-seventh session; Supplement No. 46. Document A/67/46

<sup>10</sup> United Nations General Assembly; Sixty-seventh session, Agenda item 50; Resolution 67/112 on Effects of atomic radiation; adopted by the General Assembly on 18 December 2012 [on the report of the Special Political and Decolonization Committee (Fourth Committee) (A/67/421)]

<sup>11</sup> United Nations General Assembly. Document A/74/461. September 2019.

populations and that basic scientific research on the underlying processes of cancer development still requires continued follow-up. IAEA and UNSCEAR continues to closely follow up on scientific developments in order to integrate them into its knowledge and evaluations of radiation levels and the effects on the public and the environment.