

German Affiliate of the International Physicians for the Prevention of Nuclear War (IPPNW) and German Society for Radiation Protection (GfS)

Literature Review

Health Effects of Chernobyl 20 years after the reactor catastrophe

Executive Summary

The Chernobyl catastrophe changed the world. Millions of people were made victims overnight. Gigantic stretches of land were made uninhabitable. The radioactive cloud spread all over the world. An understanding of the dangers of the use of nuclear energy grew in a countless number of minds. Even in Germany, people became sick and died due to the radiation they incorporated into their bodies through eating and breathing.

An analysis of the effects of Chernobyl is massively handicapped by the number of very varying levels of facts. Essential data on the course of events of the catastrophe and its health effects are not publicly available. They are classified in both East and West. The structure of the authorities responsible is overstretched in its capability to detect the exposition to radiation of the liquidators and the population. There has been significant migration from the most radioactively contaminated areas to less contaminated areas that is difficult to fully reconstruct today. Contaminated food was distributed in uncontaminated areas and uncontaminated food was transported to contaminated areas. This means that comparisons between contaminated and uncontaminated areas are dubious. Moreover, the age structure of the three most affected countries in the region surrounding Chernobyl has greatly changed. This makes comparisons of the cancer and disease statistics harder to consider.

Stochastic radioactive damage is very hard to prove methodically. Large epidemiological studies are very expensive and only possible with state assistance. However, not only the governments of Russia, Belarus and the Ukraine, but also the states with operational nuclear power plants in the West, and the relevant organs of the United Nations (IAEA, WHO), are not interested in a comprehensive and publicly reviewed research into the effects of Chernobyl. On top of this, many studies published in Russian have not been read or considered in the Western scientific world due to the language barrier.

This paper evaluates studies that contain plausible indications of health damage caused by the Chernobyl catastrophe. The authors of this paper attach importance to the selection of methodically accurate and comprehensible analyses. Due to the already mentioned methodical difficulties, it is not our aim to present the "right" statistics in contrast to the obviously wrong ones given by the IAEA, since these can never be found. They can only supply us with indications for which health effects we should be looking at and to what extent we are dealing with, when we talk about the health effects of Chernobyl.

According to figures given by the Russian authorities, more than 90% of the liquidators have become invalids (sick and unable to work). This would mean that 540,000 to 775,000 of the liquidators are invalids. If one was to apply this to the overall number of liquidators (600,000 to 1,000,000) then one would have to reckon with 540,000 to 900,000 invalids in this group of people alone. The liquidators are ageing prematurely. More than average numbers are developing various forms of cancer, leukaemia, somatic and psychological illnesses. A large number have cataracts. Due to long latency periods, a significant increase in carcinogenic

disease is to be expected in the coming years. Prof. Lengfelder has estimated that between 50,000 and 10,000 liquidators will have died by the year 2006. Congenital defects found in the children of liquidators and people from the contaminated areas could affect future generations to an extent that cannot yet be estimated.

Infant mortality (perinatal mortality) has significantly risen in several European countries. The studies at hand estimated the number of fatalities amongst infants as a result of Chernobyl to be about 5000.

Genetic and teratogenic damage (malformations) have also significantly risen in many European countries. In Bavaria alone, between 1000 and 3000 additional birth deformities have been found since Chernobyl. We fear that in Europe more than 10,000 severe abnormalities could have been radiation induced. The estimated figure of unreported cases is high, given that even the IAEA came to the conclusion that there were between 100,000 and 200,000 abortions in Western Europe because of the Chernobyl catastrophe.

The overall extent of the genetic damage caused by the Chernobyl catastrophe can only be vaguely estimated. By referring to UNSCEAR one arrives at between 12,000 and 83,000 children born with congenital deformations in the region of Chernobyl, and around 30,000 to 207,000 genetically damaged children worldwide. Only 10% of the overall expected damage can be seen in the first generation.

In Belarus alone, over 10,000 people developed thyroid cancer since the catastrophe. According to a WHO prognosis, in the Belarussian region of Gomel alone more than 50,000 children will develop thyroid cancer during their lives. If one adds together all age groups then about 100,000 cases of thyroid cancer have to be reckoned with in the Gomel region.

A study in the Czech Republic found over 400 additional thyroid cancers. Altogether, the number of Chernobyl related cases of thyroid cancer to be expected in Europe (outside the borders of the former Soviet Union) is between 10,000 and 20,000.

Other forms of cancer have also risen since Chernobyl. The liquidators and the inhabitants of highly contaminated areas are particularly affected. More women in Belarus suffer at an early age from breast cancer. The number of children in the Ukraine with malignant and benign tumours of the central nervous system has risen disconcertingly. This increase in tumours is particularly great amongst young children. In Ukraine and Belarus there has been a distinct rise in new cases of leukaemia in different sections of the population.

In more contaminated areas of Germany a significant cluster of very rare tumours has been found amongst children, the so-called neuroblastoma. In Germany, Greece, Scotland and Rumania, there has been a significant increase in cases of leukaemia. In the fallout regions of Northern Sweden, there were 849 additional cases of cancer up until 1996. It is to be feared that other kinds of cancer and leukaemia since Chernobyl could amount to several tens of thousands. The steep increase in various somatic and psychological illnesses in the most severely contaminated regions has been almost entirely disregarded by the official authorities in the West.

In a paper published by the Chernobyl Ministry in the Ukraine, a multiplication of the cases of disease was registered of the endocrine system (25 times higher from 1987 to 1992), the nervous system (6 times higher), the circulation system (44 times higher), the digestive organs (60 times higher), the cutaneous and subcutaneous tissue (50 times higher), the musculo-

skeletal system and psychological dysfunctions (53 times higher). Among those evaluated, the number of healthy people sank from 1987 to 1996 from 59 % to 18%. Among inhabitants of the contaminated areas from 52% to 21% and among the children of affected parent from 81% to 30%.

It has been reported for several years that type I diabetes (insulin-dependent diabetes mellitus) has risen sharply amongst children and youth. These cases outnumber the more spectacular cases of leukaemia and cancer greatly.

At the “Chernobyl Forum of the United Nations” organised in September 2005 by the International Atomic Energy Agency and the World Health Organisation, the presentation of the results of work on the effects of Chernobyl showed serious inconsistencies. For example: the press release of the WHO and IAEA stated that in the future, at most, 4000 surplus fatalities due to cancer and leukaemia amongst the most severely affected groups of people might be expected. In the report of the WHO on which this was based, however, the actual number is given as 8.930 deaths. These deaths were not mentioned in any newspaper articles. When one examines the source quoted in the WHO report, one arrives at a number between 10,000 and 25,000 additional fatalities due to cancer and leukaemia.

Given this it can be rationally concluded that the official statements of the IAEA and the WHO have manipulated their own data. Their representation of the effects of Chernobyl has little to do with reality.

The Chernobyl Forum does not take into account that even UNSCEAR has estimated that the collective dose (the usual measurement for radiation damage) for Europe outside the region of the former Soviet Union to be higher than the corresponding data for the Chernobyl region. 53% of the collective dose from the catastrophe was distributed throughout Europe, 36% throughout the affected regions in the Soviet Union, 8% in Asia, 2 % in Africa and 0.3% in America. If one takes the data and the mindset that UNSCEAR and WHO use, then between 28,000 and 69,000 deaths from cancer and leukaemia would ensue worldwide as a result of the Chernobyl catastrophe. If one was to count the cases of carcinogenic disease then one would arrive at a much greater number.

Up until today, there has been no conclusive overview of the changes in the health condition of the whole of the affected population in the region of Chernobyl, not to mention the lack of an overview of the catastrophe for the people in the Northern hemisphere. The numbers referred to here may seem on the one hand to be terribly high, on the other hand rather low. But it has to be taken into account that nearly all of the collated studies dealt with relatively small sections of the population. Even supposedly slight changes in rates of sickness can signify serious health damage and a large extent of human suffering when they are extrapolated onto a larger population group.

The German affiliate of the international physicians' federation IPPNW and the German Society for Radiation Protection therefore demand from the government of the German Federal Republik, of all other European states and of the United Nations, that the people suffering from the effects of Chernobyl finally receive assistance that is effective and long-term. Scientists, associations and interested citizens must be provided with unrestricted access to all the existing data on the Chernobyl catastrophe.

Since the experience of Chernobyl, it is certain that the continued use of nuclear energy in Europe is irresponsible. In a classified document, the German Ministry for the Economy

refers to the possible effects of a reactor catastrophe in Germany. According to this, a maximum credible accident could bring about more than 1.7 million deaths from cancer.

For this reason, IPPNW Germany and the German Society for Radiation Protection demand from the German government and from other European states that they shut down all of their reactors.

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