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How many more lives will Chernobyl claim?

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Rob Edwards

THE cloud of radiation spewed out by the world's worst nuclear accident at Chernobyl 20 years ago could kill up to 60,000 people - 15 times as many as officially estimated. So say scientists who are accusing two UN organisations, the International Atomic Energy Agency (IAEA) and the World Health Organization (WHO), of downplaying the impact of the accident.

Chernobyl reactor number 4 in Ukraine was ripped apart by an explosion on 26 April 1986, and burned for 10 days. It disgorged a massive amount of radioactivity - up to 14 exabecquerels (14×10^{18} becquerels) - over Europe and the rest of the world.

Last September, the IAEA and the WHO released a report which claimed to reveal "the true scale of the accident". Its headline conclusion that radiation from the accident would kill a total of 4000 people was widely reported (*New Scientist*, 10 September 2005, p 14), but that figure is now being challenged. In a report this week for the Green group in the European Parliament, Ian Fairlie and David Sumner, two independent radiation scientists from the UK, say that the death toll from cancers caused by Chernobyl will in fact lie somewhere between 30,000 and 60,000.

They accuse the IAEA/WHO report of ignoring its own prediction of an extra 5000 cancer deaths in the less contaminated parts of Ukraine, Belarus and Russia, and of failing to take account of many thousands more deaths in other countries, where more than half of Chernobyl's fallout ended up. "It is poor scientific practice to issue figures which only reflect part of the real situation," Fairlie says.

Zhanat Carr, a radiation scientist with the WHO in Geneva, says the 5000 deaths were omitted because the report was a "political communication tool". "Scientifically, it may not be the best approach," she admitted to *New Scientist*. She also accepts that the WHO estimates did not include predicted cancers outside Ukraine, Belarus and Russia. The health impact in other countries will be "negligible", she says, adding that there is no epidemiological research showing otherwise. The WHO "has no reasons to deliberately mislead anyone", she insists. "WHO's position is independent, free from political issues, and based on scientific evidence of the highest quality." The IAEA refused to comment.

Fairlie and Sumner's accusations are backed by other experts. The IAEA/WHO report "misrepresents reality by significantly underestimating the number of cancer deaths", says Timothy Mousseau of the University of South Carolina in Columbia. A paper co-authored by Mousseau and published this week in *Trends in Ecology and Evolution* (DOI: 10.1016/j.tree.2006.01.008) points to studies suggesting that fallout from Chernobyl has already caused germline mutations in animals and plants.

Elizabeth Cardis, a radiation specialist from the WHO's International Agency for Research on Cancer in Lyon, France, says that 30,000 to 60,000 cancer deaths is "the right order of magnitude". She is due to publish a study later this month that will estimate the number of excess cancers attributable to Chernobyl amongst 570 million Europeans. Though they will be difficult to detect, as they will only form a tiny proportion of the millions of cancer deaths from all causes, this doesn't mean that they should be ignored, Cardis says. "They are real people who suffer from the accident."

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