

FACTBOX-Long-term Chernobyl effects lower than feared

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LONDON, Sept 22 (Reuters) - Much of the debate over whether or not countries should invest in nuclear technology for power production revolves around the potential danger of radiation leaks or even a reactor meltdown.

The International Atomic Energy Agency's (IAEA) International Nuclear Event Scale (INES) has seven categories, with one resembling an anomaly and seven representing a major accident.

On this scale, there has only ever been one category seven event, which was the Chernobyl nuclear reactor accident on 26 April, 1986.

The accident was a result of a violation in safety regulation, rather than a technical error, and the incident was not a full meltdown.

The accident at Chernobyl happened when the facility operators, in violation of safety regulations, switched off important control systems and allowed the reactor to reach unstable, low-power conditions, according to a United Nations report.

Although research continues, the first reports about long-term radiation damage have been published, and the results are that the radiation did less damage than initially feared.

"There is a tendency to attribute increases in the rates of all cancers over time to the Chernobyl accident, but it should be noted that increases were also observed before the accident in the affected areas," the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) said in its summer 2010 assessments of the radiation effects in Chernobyl.

"Moreover, a general increase in mortality has been reported in recent years in most areas of the former Soviet Union, and this must be taken into account when interpreting the results of Chernobyl-related studies," the report said.

The World Health Organization's (WHO) and Chernobyl Forum reports from 20 years after the accident in 2006 came to similar conclusions.

Below is a summary of these reports:

* Although those most highly exposed individuals are at an increased risk of radiation-associated effects, the great majority of the population is not likely to experience serious health consequences as a result of radiation from the Chernobyl accident.

* Among the residents of Belarus, the Russian Federation and Ukraine, there have been up to the year 2002 about 4,000 cases of thyroid cancer reported in children and adolescents who were exposed at the time of the accident, and more cases can be expected. Many of those cancers were likely caused by radiation exposures shortly after the accident.

* However, apart from this increase, there is no evidence of health impacts attributable to radiation exposure 20 years after the accident.

* There is no scientific evidence of increases in overall cancer incidence or mortality rates or in rates of non-malignant disorders that could be related to radiation exposure.

* The risk of leukaemia in the general population, and in overall cancer, mortality rates or rates of non-malignant disorders does not appear to be elevated.

* Many other health problems have been noted in the populations that are not related to radiation exposure.

* In its conclusion, the UN report says that "the vast majority of the population need not live in fear of serious health consequences due to the radiation from the Chernobyl accident".

* The report also said that the majority of the affected population in the region was exposed to radiation levels "comparable to or a few times higher than the natural background levels, and future exposures continue to slowly diminish as the radionuclides decay". (Reporting by Henning Gloystein; Editing by Sue Thomas)

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