417,000 cancers forecast for Fukushima 200 km contamination zone by 2061

[Pr Chris Busby](#)
[Scientific Study](#)
[Fukushima Initial Analysis](#)
[The report with all methods, assumptions and data](#)

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Scientific Secretary of the [European Committee on Radiation Risk](#) (ECRR), Professor Chris Busby, has released calculations of the cancer incidence to be expected in fallout areas of Japan.

Using data from the International Atomic Energy Agency and official Japanese web sites he has used two methods to estimate the numbers of cancer cases. He compares these results with estimates derived from [ICRP](#) (International Commission on Radiological Protection) modelling.

The "Tondel" Method is based on a conservative study by Martin Tondel in northern Sweden.
This [examined cancer incidence during 10 years after Chernobyl](#).
It differentiated the varying levels of land contamination and found that the disease increased by 11% for each 100 kiloBecquerels of fallout per square metre of land surface.
Professor Busby has applied this factor to the zone up to 100 km from the reactors, where IAEA has reported, on average, 600kBq per sq.m (kBq/m²) radioactivity.

In the 3.3 million population of this 100 km zone a 66% increase over and above the pre-accident rate is predicted in 10 years. This implies 103,329 extra cancers due to the Fukushima exposures between 2012 and 2021.

Applying the "Tondel" method to the ring between 100 km and 200 km from Fukushima, population 7.8 million but lower concentrations of fallout, 120,894 extra cancers are to be expected by 2021.

Assuming permanent residence and no evacuation the total predicted yield according to the "Tondel" method is 224,223 in ten years.

The second method is derived from weighting factors advised by the ECRR on the basis of the different ways in which different radionuclides behave in biological systems.

This predicts 191,986 extra cancers in the 0 - 100km circle and 224,623 in the outer ring.
Probably half of these will be expressed in the first ten years and the remainder between 10 and 50 years.
Assuming permanent residence and no evacuation the total predicted yield according to the second method will be 416,619 of which 208,310 will appear in the first ten years.

There is thus good agreement between the two methods.

The ICRP method predicts 6158 additional cancers in 50 years which, among the 2.5 million cancer cases expected normally in that population over half a century, would be invisible and deniable.

Information in live : www.cartoradiations.fr
Radiation and Protection : www.next-up.org/Newsoftheworld/Radiation_Protection.php