



Tritium in Japanese precipitation following the March 2011 Fukushima Daiichi Nuclear Plant Accident

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We have measured the concentrations of tritium in Japanese precipitation samples collected after the March 2011 accident at the Fukushima Dai-ichi Nuclear Power Plant (FNPP1). Tritium concentrations exceeding the pre-accident background level were detected at three out of seven localities (Tsukuba, Kashiwa and Hongo) southwest of the FNPP1, with their distances varying between 170 and 220 km from the source. The highest tritium content was found in the first rainfall in Tsukuba after the accident, but its tritium content was about 500 times less than the regulatory limit for tritium in drinking water, so that the risk of radiation from tritium released in the accident can be considered negligible. Tritium levels at the localities studied here decreased steadily and rapidly with time and became indistinguishable from the pre-accident values within five weeks. The atmospheric tritium level in the vicinity of the FNPP1 during the earliest stage of the accident was roughly estimated to be 1.5×10^3 Bq/m³, which is potentially capable of producing rainwater exceeding the regulatory limit, but only in the immediate vicinity of the source.