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Declining radiation measured near Fukushima plant, some blown elsewhere

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By HIROSHI ISHIZUKA/ Staff Writer

Government figures show airborne radiation levels in the vicinity of the Fukushima No. 1 nuclear plant fell by about 40 percent over the course of a year, reflecting natural decay and dispersal by wind and rain.

On March 1, the science ministry released data recorded last autumn by survey helicopters within an 80-kilometer radius of the crippled plant and presented it in the form of maps. Among the observations was a pronounced fall in levels in a hot zone northwest of the plant.

Ministry officials attributed the decline in roughly equal measure to decay, and to wind blowing radioactive material elsewhere and rain sluicing it out to sea.

"Typhoons hit in June and later," a ministry official said. "They may have helped spread the radioactive substances."

The latest measurements, conducted between Oct. 31 and Nov. 16, 2012, represented the sixth such round of sampling. High-sensitivity sensors fitted to helicopters were used to calculate radiation levels at a height of 1 meter above the ground at about 140,000 locations.

The results were compared against data collected during the fourth round, in October and November 2011.

During that one-year period, radiation levels fell by 40 percent on average across the zone. The decrease was particularly conspicuous in a belt of high radiation that extends across forests, farmland and towns northwest of the nuclear plant.

Officials said of the 40 percent decline, 21 percent was due to decaying radioactive cesium. Cesium-134 has a half-life of 2 years, the period of time after which only half the amount of isotope remains. But the plant spewed other radioactive isotopes as well, including cesium-137, which has a half-life of 30 years, and which will be declining comparatively more slowly.

The officials said the remaining 19 percent decline was likely due to environmental factors.

Comparison against measurements taken in June 2012, the fifth round of surveys, showed a decrease of 21 percent over five months. That time, dispersal likely accounted for 13 percent and decay for 8 percent.

The first three surveys were conducted with different analysis methods, so it remains difficult to compare readings across the entire period since the March 11, 2011 disaster, the ministry officials said.

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