

Original

Characteristics and Transition of Air Dose Rate by Land Use Pattern in Northern Chiba Prefecture after the Fukushima Daiichi Nuclear Power Plant Accident

Masaharu TSUZAKI,* Ayumu SATO, Toru NAGAOKA, Takashi WAKAMATSU, and Toshihiro YOSHIHARA
Central Research Institute of Electric Power Industry (1646 Abiko, Abiko-Shi, Chiba 270-1194 Japan)

Summary

A severe accident at the Fukushima Daiichi nuclear power plant in March 2011, released large amounts of radioactive matter into the atmosphere, causing higher-than-normal air dose rates over a large area. We measured the air dose rate at 196 points in northern Chiba prefecture in July 2011, and found high rates in woods and lawns, and low rates in bare ground and asphalt. There was no distinction in measured values between maintained woods and non-maintained woods. We also measured rates by land use pattern in August 2012, and similarly found relatively high air dose rates in woods and lawns. While reduction of the air dose rate by radioactive decay was 0.79 over the year, measured values remained at 0.59–0.70 times the previous year's values. Calculations show that downward migration of radioactive matter account for the decrease in air dose rate, and that attempts to remove radioactive matter through weeding were ineffective.

Key Words: Air dose rate, Land use pattern, Radioactive cesium, Weathering effect
