

Original

Factor Analyses Concerning the Effect of Forest Decontamination by Utilizing Statistic and Depth Profile Investigation

Yoshitomo MORI^{1*}, Minoru YONEDA¹, Yoko SHIMADA¹,
Satoshi FUKUTANI², and Maiko Ikegami²

¹Graduate School of Urban and Environment Engineering, Kyoto University
(Kyoto-daigaku-katsura, Nishikyo-ku, Kyoto, 615-8540 Japan)

²Kyoto University Research Reactor Institute
(2 Asashiro-Nishi, Kumatori-cho, Sennan-gun, Osaka 590-0494, Japan)

Summary

Based on the decontamination data of surface dose rate, air dose rate (100 (cm) from the ground) and surface contamination concentration (hereinafter referred to as radiation dose) (Jun. 2012-Feb. 2015), relationship between the decontamination effect in forest area and “pre-decontamination radiation dose”, “monitoring term of pre-decontamination”, and “types of vegetation” were analyzed. As a result of analyses, reduction rates got higher with the increase of pre-decontamination ranges, though more than the particular level of radiation dose, they got close to certain level. Regarding the passage of time, as time went by, reduction rate of radiation dose decreased even in high radiation circumstances, though some fluctuation were seen. Finally, variation of reduction rate among vegetation was observed through GIS analyses. Especially, in deciduous conifer plantation it became much higher than other vegetation. Field study in 5 forest revealed that infiltration of radioactive cesium was different from site to site, however, strong correlation couldn't be observed between decontamination effect and infiltration. Additional research focused on detailing vegetation or analyzing the relation between infiltration of radioactive Cs and condition of organic or soil layer will be necessary.

Key Words: Effect of forest decontamination, Dose rate, Surface contamination concentration,
Vegetation, Depth profile
