

Use of ICT for monitoring environment radioactivity and decontamination of sea water polluted by Fukushima Nuclear Power Plant accident

E. Ishizaki^{1*}, M. Fuse², A. Minato³, M. Itaba³ and S. Ozawa³

¹ Union Showa K. K., 1-8-40 Konan, Minatoku, Tokyo 108-0075, Japan.

² National Institute of Technology, Fukushima College, Iwaki 970-8034, Japan.

³ Graduate School of Science and Engineering, Ibaraki University, Hitachi 316-8511, Japan.

*Corresponding author: ishizaki@ds.catv.ne.jp

Abstract

The Fukushima radioactive contamination has occurred by the nuclear plant accident which was caused by the earthquake and tsunami attack in March 2011. The various recovering efforts have been carried out in the last five years. This paper deals with decontamination of radioactive sea water and monitoring of environmental radioactivity. The method of radioactive decontamination of land is scratching the surface of land and mechanical removals of the contaminated soil. The effect of this method is discussed by comparing with the monitoring data of environmental radioactivity. The decontamination of radioactive sea water is based on adsorption of radioactive materials on molecular sieve adsorber. The development of a new adsorber and a plant for the decontamination of radioactive sea water was considered. ICT has been conveniently used in the designing and testing processes of the plant. What we learnt from the recovering processes from the radioactive contamination has been accumulated in the KISSEL (Knowledge Integration Servers for E-Learning) servers. The knowledge can be shared with various people in Asia Pacific countries. It will be used in future in educational purposes as well as in research activities of environmental sciences.

Keywords: Adsorber development, nuclear plant accident, radioactive pollution, radioactive decontamination