

The Role of Individual Dosimetry for Affected Residents in Post-Accident Recovery – From the Fukushima Experience

W. Naito, M. Uesaka

Research Institute of Science for Safety and Sustainability (RISS), National Institute of Advanced Industrial Science and Technology (AIST), 16-1 Onogawa, Tsukuba, Ibaraki 305-8569, Japan; e-mail: w-naito@aist.go.jp

Abstract—The accident at Fukushima Daiichi Nuclear Power Plant on March 11, 2011, released radioactive material into the atmosphere and contaminated the land in Fukushima and several neighboring prefectures. In the rehabilitation stage, it is important to accurately understand or estimate realistic individual external doses so that individuals can make informed decisions based on their radiological protection to return to or live in the affected areas. The authors used personal dosimeter (D-shuttle) along with the Global Positioning System and Geographic Information System to understand realistic individual external doses and to relate individual external doses, ambient doses, and activity-patterns of individuals in the affected areas in Fukushima. More than 250 affected residents participated in our study. The results provide a valuable contribution to understanding realistic individual external doses, and the corresponding time-activity patterns and airborne monitoring air dose rate, which can be used for predicting future cumulative external doses following the return of residents to their homes in the evacuation order areas. In addition to the scientific evidence obtained from our study, the presentation will discuss and emphasise the meaning and role of individual external dose measurements for the affected residents in post-accident recovery based mainly upon the authors' experience in measuring, assessing and communicating individual external doses in the affected residents and areas in Fukushima.