

放射線業務従事者中央登録センターに定期線量報告された緊急作業線量の外部・内部被ばく線量への分割

Partitioning of emergency work doses reported annually to RADREC into external and internal doses

Background and aim: J-EPISODE, an epidemiological survey for nuclear workers, will conduct risk estimation by converting the recorded doses reported annually to the Radiation Dose Registration Center (RADREC) into organ-absorbed doses. Only the sum of external and internal doses (effective doses) has been reported annually for emergency work doses due to the Fukushima Daiichi Nuclear Power Plant accident. However, the organ-absorbed dose estimation needs disaggregation into external and internal doses.

Materials and methods: In addition to annual dose reports, ad-hoc reports on historical external and internal doses by type of normal or emergency work are submitted to RADREC after lifting the designation of a nuclear worker and are stored on microfilm. No such report is available for those who have been working still after the emergency work. Emergency work doses including internal doses were stratified by effective dose groups in FY2010 or FY2011, TEPCO's or contractors' employee; then, the sample participants were selected from each stratum. Retrieving their microfilms, the proportion of internal doses was calculated by stratum, which was applied to the effective doses of each individual emergency worker to estimate separately the external and internal doses.

Results: The estimated proportion of internal doses in 50+ mSv was 40% for TEPCO employees in FY2010 and 20% for contractors, but it was 0.3% and 11.7%, respectively, in FY2011. Next, individual organ-absorbed doses from emergency work will be reconstructed separately by external and internal doses.

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