

A Study on the Annual Doses Received by the Workers of Some Medical Practices

Authors : Eltayeb Hamad Elneel Yousif

Abstract : This paper describes occupational radiation doses of workers in non-destructive testing (NDT) and some medical practices during the year 2007. The annual doses received by the workers of a public hospital are presented in this report. The Department is facilitated with HARSHAW Reader model 6600 and assigned the rule of personal monitoring to contribute in controlling and reducing the doses received by radiation workers. TLD cards with two TLD chips type LiF: Mg, Ti (TLD-100) were calibrated to measure the personal dose equivalent $H_p(10)$. Around 150 medical radiation workers were monitored throughout the year. Each worker received a single TLD card worn on the chest above lead apron and returned for laboratory reading every two months. The average annual doses received by the workers of radiotherapy, nuclear medicine and diagnostic radiology were evaluated. The annual doses for individual radiation workers ranged between 0.55-4.42 mSv, 0.48-1.86 mSv, and 0.48-0.91 mSv for the workers of radiotherapy, nuclear medicine and diagnostic radiology, respectively. The mean dose per worker was 1.29 ± 1 , 1.03 ± 0.4 , and 0.69 ± 0.2 mSv, respectively. The results showed compliance with international dose limits. Our results reconfirm the importance of personal dosimetry service in assuring the radiation protection of medical staff in developing countries.

Keywords : radiation medicine, non-destructive testing, TLD, public hospital

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020