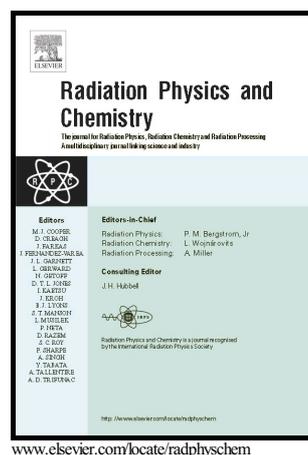


Author's Accepted Manuscript

Occupational Radiation Exposure in a Nuclear
Medicine Department in Kuwait

M. Alnaaimi, M. Alkhorayef, M. Omar, N.
Abughaith, M. Aldouij, T. Salhudin, F. Alkandri,
A. Sulieman, D.A. Bradley



PII: S0969-806X(17)30235-9
DOI: <http://dx.doi.org/10.1016/j.radphyschem.2017.02.048>
Reference: RPC7450

To appear in: *Radiation Physics and Chemistry*

Received date: 19 November 2016
Revised date: 5 February 2017
Accepted date: 22 February 2017

Cite this article as: M. Alnaaimi, M. Alkhorayef, M. Omar, N. Abughaith, M. Aldouij, T. Salhudin, F. Alkandri, A. Sulieman and D.A. Bradley, Occupational Radiation Exposure in a Nuclear Medicine Department in Kuwait, *Radiation Physics and Chemistry*, <http://dx.doi.org/10.1016/j.radphyschem.2017.02.048>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and a review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Occupational Radiation Exposure in a Nuclear Medicine Department in Kuwait

M.Alnaaimi¹, M.Alkhorayef^{2,3}, M.Omar¹, N. Abughaith¹, M.Aldouij¹, T.Salhudin¹,
F.Alkandri¹, A. Sulieman⁴, D. A. Bradley^{2,5}

¹Department of Nuclear Medicine, Kuwait Cancer Control Center, Shwiekh, Kuwait

²Department of Physics, University of Surrey, Guildford, Surrey GU4 8JU, UK.

³Department of Radiological Sciences, College of Applied Medical Sciences, King Saud University, PO Box 10219, Riyadh 11433, Saudi Arabia

⁴Prince Sattam Bin Abdulaziz University, College of Applied Medical Sciences, Radiology and Medical Imaging Department, Saudi Arabia

⁵Sunway University, Institute for Health Care Development, Jalan Universiti, 46150 PJ, Malaysia

Abstract

Ionizing radiation exposure is associated with eye lens opacities and cataracts. Radiation workers with heavy workloads and poor protection measures are at risk for vision impairment or cataracts if suitable protection measures are not implemented. The aim of this study was to measure and evaluate the occupational radiation exposure in a nuclear medicine (NM) department. The annual average effective doses ($H_p[10]$ and $H_p[0.07]$) were measured using calibrated thermoluminescent dosimeters (TLDs; MCP-N [LiF:Mg,Cu,P]). Five categories of staff (hot lab staff, PET physicians, NM physicians, technologists, and nurses) were included. The average annual eye dose ($H_p[3]$) for NM staff, based on measurements for a typical yearly workload of > 7000 patients, was 4.5 mSv. The annual whole body radiation ($H_p[10]$) and skin doses ($H_p[0.07]$) were 4.0 and 120 mSv, respectively. The measured $H_p(3)$, $H_p(10)$, and $H_p(0.07)$ doses for all NM staff categories were below the dose limits described in ICRP 2014 in light of the current

Download English Version:

<https://daneshyari.com/en/article/5499084>

Download Persian Version:

<https://daneshyari.com/article/5499084>

[Daneshyari.com](https://daneshyari.com)