

الايه

بسم الله الرحمن الرحيم

(قُلْ هَلْ يَسْتَوِي الَّذِينَ يَعْلَمُونَ وَالَّذِينَ لَا يَعْلَمُونَ إِنَّمَا يَتَذَكَّرُ
أُولُو الْأَلْبَابِ). سورة الزمر: الآية (9)

صدق الله العظيم

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Dedication:

This Work is dedicated to

My beloved Father and Mother

My dear Brother and Sister

My dear Friends and

My Sincere instructors.

List of Abbreviations

ALARA	As low as reasonable achievable.
CT	Computed tomography.
NEMA	National electronic manufacture association
HVL	Half value layer
ECD	Electrocardiogram
ICRP	International committee on radiological protection.
MR/H	Mile Rontgen per hour.
MSV	Mile Sievert.
MGAS	Multi gated Acquisition

	scan.
MRI	Magnetic resonance imaging.
PACS	Picture Archiving and communication system
PDA	Patient dose Administration
PET	Photon emission tomography.
PMT	Photo multiplier tube.
RIT	Radio immune therapy.
RPA	Radiation protection area.
SPECT	Single photon emission computed tomography
NCRP	National council on radiation protection.
VA	Department of Veterans Affairs
RSO	Radiation Safety Officer.

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Abstract

This study was conducted to evaluate the dimensions of the SPECT gamma camera rooms of Alnilain and RICK nuclear medicine centers in order to find out how the dimensions of this rooms are congruent with the international dimensions. The dimensions which were measured including the ceilings and walls.

The results showed that the dimensions of the gamma camera room of Alnilain center were matching with the world standards, whereas the dimensions of other rooms were not matching.

As for RICK, the study showed that all the dimensions were not congruent with the world standard except the height of the ceiling of gamma camera.

The study, as well, showed that the radiation doses received by RICK staff were lower than those received by the staff of Alnilain center and all the doses received by the workers of the two centers were within the world permissible limits.

As for the building materials, the study showed that there were no major differences in the materials used in both centers.

The study proposed some recommendation which were seen important by the researcher.

:ملخص البحث

اجريت هذه الدراسه لتقويم ابعاد غرفه الأشعه المقطعيه لجهاز قاما كاميرا
لمركزي الخرطوم والنيلين للطب النووي بغرض معرفه ملائمه الأبعاد
. الموجوده مع الأبعاد القياسيه العالميه

الأبعاد التي تم قياسها لجميع الغرف شملت الحائط والسقف , ففي مركز النيلين وجد أن غرفها القاما كاميرا مطابقة للمواصفات بينما ابعاد باقي الغرف . غير مطابقة .

اما في مركز الخرطوم للطب النووي فقد اوضحت الدراسة أن جميع الأبعاد . غير مطابقة ماعدا ارتفاع سقف غرفه جهاز القاما كاميرا

اما بالنسبه لمواد البناء فلا يوجد اختلاف في المواد المستخدمه في كلا . المركزين .

كذلك أوضحت الدراسة أن الجرعات الإشعاعيه التي يتلقاها العاملون في مركز الخرطوم اقل من جرعات مركز النيلين وأن جميع الجرعات الإشعاعيه . التي يتلقاها العاملون كانت ضمن الحدود المسموح بها عالميا

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