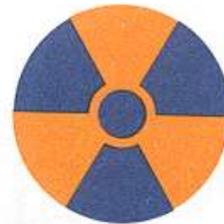




**DEPARTMENT OF HEALTH**  
**DIRECTORATE: RADIATION CONTROL**



**GUIDELINES**

**MONITORING OF RADIATION WORKERS IN A THEATRE**

**Background:**

ICRP 60

(Paragraph 266)

“In occupational exposure, it is usually feasible to monitor the doses received by individuals. Often, however, there is no clear-cut line between workers closely involved with radiation sources and others who are exposed only casually, either because they are rarely present in the relevant locations or because they are remote and receive only trivial doses. To avoid a wasteful use of resources in monitoring and record keeping, it is necessary to identify groups of workers for whom individual monitoring is needed.”

(Paragraph 267)

“The decision to provide individual monitoring for a group of workers depends on many factors. Some of these are technical and others are concerned more with industrial relations. The decision should be taken by the operating management, but should be subject to review by the regulatory agency. Three major technical factors should influence the decision; the expected level of dose or intake in relation to the relevant limits, the likely variations in the dose and intakes, and the complexity of the measurement and interpretation procedures comprising the monitoring programme.”

ICRP 35

(Paragraph A.10)

“If it can be established by survey or by a limited program of individual monitoring that operating procedures are of a high standard, some types of work can be identified as calling for no routine individual monitoring. Examples of these types of work are as follows:

- (a) non-radiological work in departments which deal with X-ray and gamma-ray radiography;
- (b) dental radiography; and
- (c) process work on industrial processes involving radiological control of measurement, e.g. thickness and level gauging.”

## DOSE LIMITS

Application	Dose limit	
	Occupational	Public
Effective dose	20 mSv per year, averaged over defined periods of 5 years (not more than 50 mSv in any one year)	1 mSv in a year
Annual equivalent dose to the		
lens of the eye	20 mSv	1 mSv
skin	500 mSv	50 mSv
hands and feet	500 mSv	-----

**In view of the above-mentioned recommendations of the ICRP, the following requirements are valid for a theatre:**

1. All **full time** theatre personnel must be monitored. In cases where the workload of the X-ray unit is very low, the requirement for the monitoring of workers must be determined individually.
2. Workers that do not need to perform duties on a regular base, say every third or fourth month, may be exempted from being monitored. This exemption must be re-evaluated, however, should the workers mentioned in paragraph 1 receive a higher dose than the permissible limit (see Table).
3. Every licence holder shall regularly estimate the dose to those workers who routinely work in a designated area but who are considered unlikely to receive an effective dose or an equivalent dose greater than three-tenths of the relevant occupational dose limits referred to in the Table.

----- ooOOoo -----

References:

ICRP Publication 35  
 ICRP Publication 60  
 ICRP ref 4825-3093-1464 (21 April 2011)