PUBLIC AND OCCUPATIONAL EXPOSURE DURING CT EXAMINATIONS IN GREECE: A NATIONAL SURVEY

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This study presents the results of radiation protection survey performed by the Greek Atomic Energy Commission (GAEC) in 187 radiology departments with CT systems, for the time period 2000-2005. The relevant measurements were carried out during the GAEC's on-site inspections performed in these radiology departments in the framework of their licensing issue procedure.

Instantaneous dose rates were recorded at different areas around the CT installations using survey meters of appropriate type. The mean dose rate values in the control and the waiting room were found to be equal to 1.5 μSv/hr and 0.4 μSv/hr respectively. Higher mean dose rate values (4.0 μSv/hr and 2.9 μSv/hr) were measured at the doors leading to the control room and the waiting areas from the CT room. However, taking in to consideration the CT systems workloads and the occupancy factor for the above areas, the estimated annual doses for the personnel and the public in no case exceed the relative dose limits. This result is in full compliance with the personnel annual doses registered in GAEC's dosimetry database. Finally, for the optimization of the personnel's radiation protection, an instantaneous dose rate constraint is attempted to be established; the values of 0.5 μSv/hr for the control room and 0.1 μSv/hr for the waiting room were estimated as the dose rate values below which the 75% of the measurements taken are expected to be included.