

**STUDY OF AN ACCIDENTAL EXPOSITION OF THREE WORKERS DURING A  
GAMMAGRAPHY WITH  $^{192}\text{Ir}$  SOURCE**

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**ABSTRACT**

This paper is concerned with an accident occurred in an industrial gammagraphy unit located in São Paulo, Brazil, on 2<sup>nd</sup> of July, 1988. A work team, composed of three workers, was engaged on a routine operation with a  $^{192}\text{Ir}$  source of 3,299 TBq, when the flexible cable of the holder broke, giving rise to an accidental exposure. The evaluation of the dose received by the three workers was carried out by three different methods: the film badge measurement, the biological dosimetry and the reconstitution of the accident taking into account the exposition time and the distance between the source and the workers. In the film badge evaluation the dose obtained was around 300 mSv, whereas for the biological dosimetry doses of 370 mSv, 290 mSv and 110 mSv was achieved. In the accident reconstitution the doses obtained were: 200 mSv (whole body), 131.000 mSv (left hand) for the first worker; 232 mSv (whole body), 25.000 mSv (left hand), 99.000 mSv (right hand), for the second one and finally 232 mSv (whole body) for the last one. It was concluded, by the evaluation of the doses, that the irradiation was not uniform, being the hand the more severely irradiated organ. From 18<sup>th</sup> of July, 1988, the victims were treated by the medical staff, together with the radiological protection group, both from the IPEN. In this paper the clinical and laboratorial exams carried out for the evaluation of the extension of the deleterious effects are described. By that time, the victims presented already radiodermatitis in their hands, and the clinical treatment pursued is also described.