

THE USE AND PROCESSING OF FILM BADGE DOSEMETERS AND THE APPLICATION OF AUTOMATIC DATA PROCESSING TECHNIQUES TO ASSESSING, REPORTING AND RECORDING THE DATA

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Abstract—In an establishment or occupation where there may be exposure to ionizing radiations it is usually necessary to assess the exposure levels at which people are working. This can be done simply and cheaply by utilizing small integrating dosimeters, of which perhaps the most widely used is the “film badge”, with thermoluminescent dosimeters being used increasingly in support of “film badges”.

The reasons for issuing film badges as individual personal dosimeters may vary from country to country, from industry to industry and indeed within a single organization or plant. Some of these reasons are explored in the paper.

Where film badges, or other dosimeters, are issued there is a consequent need to identify the badge, its location and period of use, to process the film to establish its radiation exposure, and then to ensure that this radiation exposure is recorded and, where necessary, that the information in the record is assessed and used managerially. A film badge processing technique is described with particular attention being paid to improvements and to special procedures required to maintain a high sensitivity and processing quality. After processing the data on the film are assessed and recorded: in this paper a simple data processing system is described. The system is mainly based on commercially available equipment and is designed to provide an input to commercial accountancy type computers. It is easy to build up the system in stages, utilizing as little or as much of it as may be needed in the local circumstances. The procedure adopted is extremely flexible, and allows for the occurrence of unusual films and other operational problems.

Finally when the film data have been assessed and recorded it may be necessary to transfer all or some of the information to individual's personal radiation records or to other records and reports. The need for such data keeping is discussed and a description given of an established system of maintaining personal radiation records by automatic data processing.

NOTE: This paper was *withdrawn* prior to the Congress.