AN INEXPENSIVE DOSIMETER CALIBRATOR

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ABSTRACT

A large Radiology department may have many room monitors, dosimeters, and survey meters. The cost of having all these devices calibrated yearly can amount to a large sum of money.

This paper describes a purpose built, inexpensive calibrator which uses 241-Am as the source of radiation. The calibrator can be used to monitor changes in the response of any of the radiation detection devices in the department. It is designed to provide a range of exposure rates. The system is very reproducible and can accommodate a wide range of ion chamber shapes.

241-Am emits a range of alpha particles and a 59.5 keV gamma ray, which falls nicely in the range of typical diagnostic x-ray energies. 241-Am has a half life of 432 years which provides a good degree of reproducibility without the need for constant decay correction.

The use of the system is for monitoring changes in response of calibrated devices, and should not be considered to have eliminated the need for proper calibration from time to time by a Standards Laboratory.