

Anomalies in the radiation output of a new x-ray tube

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Abstract:

Cavity ionization methods have been employed to show that the amount of X-radiation produced by a newly installed x-ray tube was grossly reduced. Qualitative information based on the techniques of radiological photography suggests that there was no fault with the kilovoltage generator and that the tube was therefore the source of the anomaly. Observations of tube current avalanche and sparking at high potentials provide further clue as to the nature of the fault. A discussion of the possible causes of the anomaly is presented. This study demonstrates that, when specialized equipment for detecting the origin of some faults in x-ray machines is not available, radiation dosimetry and sensitometry can provide a most useful alternative.