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PAPER TITLE Development of a Testing and Calibration Service for Protection Level Test Instrumentation

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ABSTRACT (See instructions overleaf)

The RRPPS provides a service for calibration of external x-ray, beta and gamma dose and dose-rate meters and alpha, beta and gamma contamination monitors. An upgrading of the RRPPS testing and calibration facility is described. In this exercise latest UK HSE, ISO & NAMAS guidelines have been considered. Results are presented of tests of the ^{137}Cs irradiation jig for calibration of gamma dose-rate meters. Spectral measurements and Monte Carlo simulations have been performed at the defined calibration points; the applicability of the standard air kerma to ambient dose equivalent conversion factor is examined.

Calibration conditions are not intended to reflect field conditions. However in order to also fulfil the RRPPS role as an RPA, quantitative estimates of the differences between calibration and field conditions have been made for a limited number of cases. Typical working surfaces were uniformly contaminated with known activities of ^{99m}Tc, ^{125}I and ^{32}P and measurements were made using commonly encountered instruments.