

## **The role of radioactive sources in ionizing radiation metrology**

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Radioactive sources have found numerous applications since the original discovery by Becquerel in 1896 – radiation sterilization, well-logging, cancer therapy, radiography, environmental pathway tracing, to name a few. Radioactive sources are also critical to the field of ionizing radiation metrology, providing reliable calibration fields and reference sources for detector characterization and long-term monitoring of measurement standards.

Over recent years there has been increased pressure on the use of radioactive sources in many of these applications, driven primarily by security concerns. For example, the Office of Radiological Security (ORS) has a target to eliminate all Cs-137 blood irradiators in the US by 2027. Although metrology uses of radioactive sources are not a primary focus of regulators, there are already challenges in obtaining suitable sources and/or maintaining existing irradiators containing radioactive sources.

In light of this, the Consultative Committee on Ionizing Radiation (CCRI) of the BIPM (Bureau International des Poids et Mesures) formed a task group to look at the role of radioactive sources in ionizing radiation metrology and the potential options for alternatives. The task group drew representatives from National Metrology Institutes from around the world, as well as experts from the IAEA and the radioactive source manufacturers' community, with the aim of providing a metrology-specific perspective on this topic.

This presentation will describe the work of the CCRI TG, highlighting the current situation, immediate and future challenges, and options for maintaining accurate measurement standards and calibration services.