

# Ionizing Radiation

The Consultative Committee for Ionizing Radiation (CCRI)



The CCRI's vision is a world where ionizing radiation can be used for the benefit of mankind, confident that the risks are constrained by accurate measurement.

## A new strategy to address challenges in the field

### Developing comparisons to underpin new radiotherapy modalities



Accelerators are replacing radioactive sources for cancer therapy world-wide. A new comparison service for high-energy photons has been established by the BIPM at a medical research facility (DOSEO) to meet growing demand.

### Reducing the transport of hazardous materials

The CCRI's Measurement Methods Matrix (MMM) means that a comparison of one radionuclide is accepted as evidence of capability to standardize many radionuclides, reducing the need to transport radioactive sources for comparison exercises without impacting the quality of measurements.

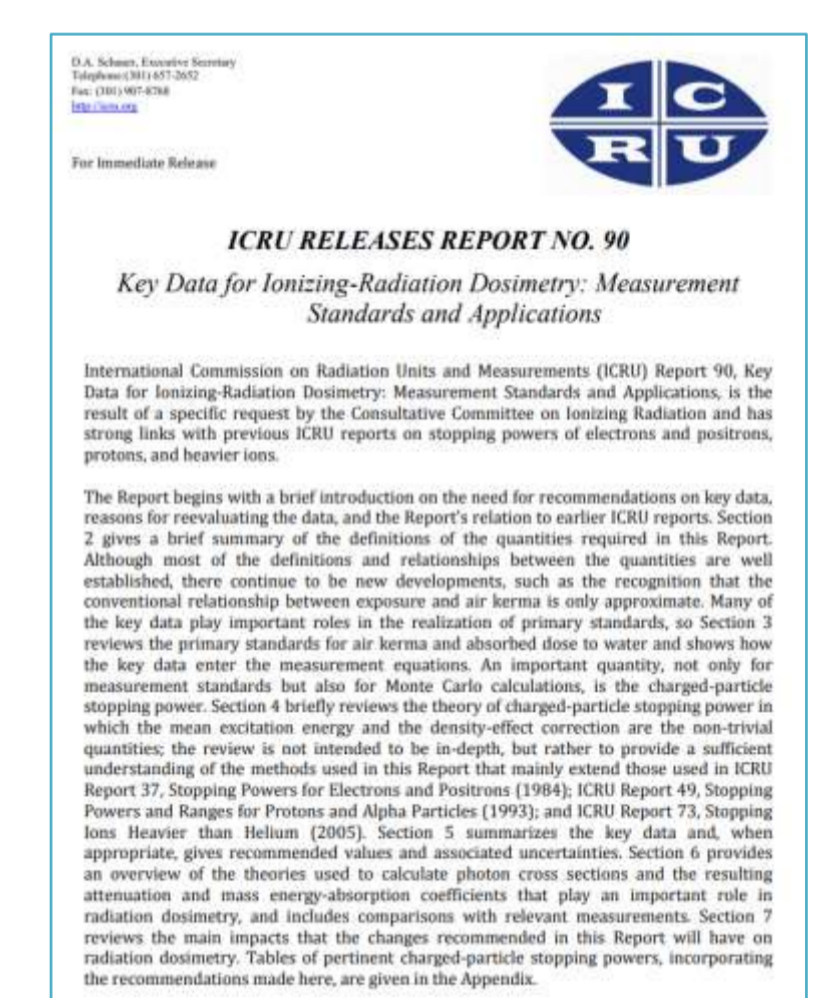
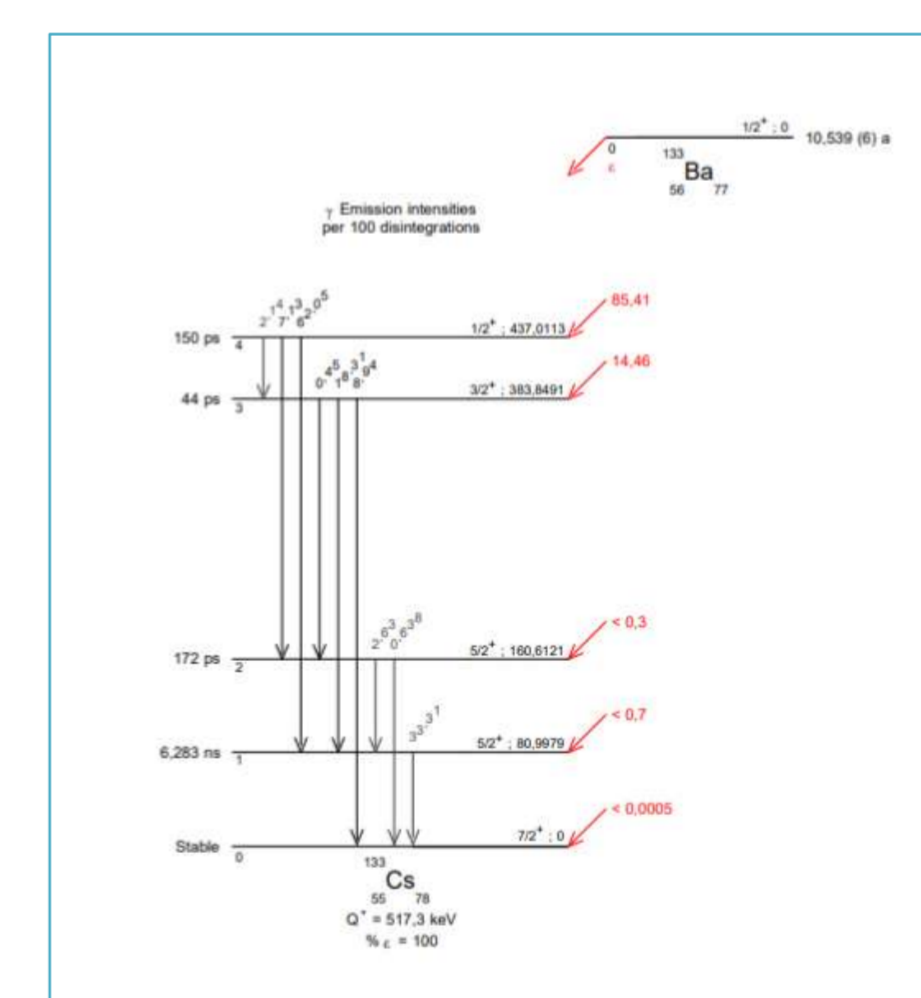
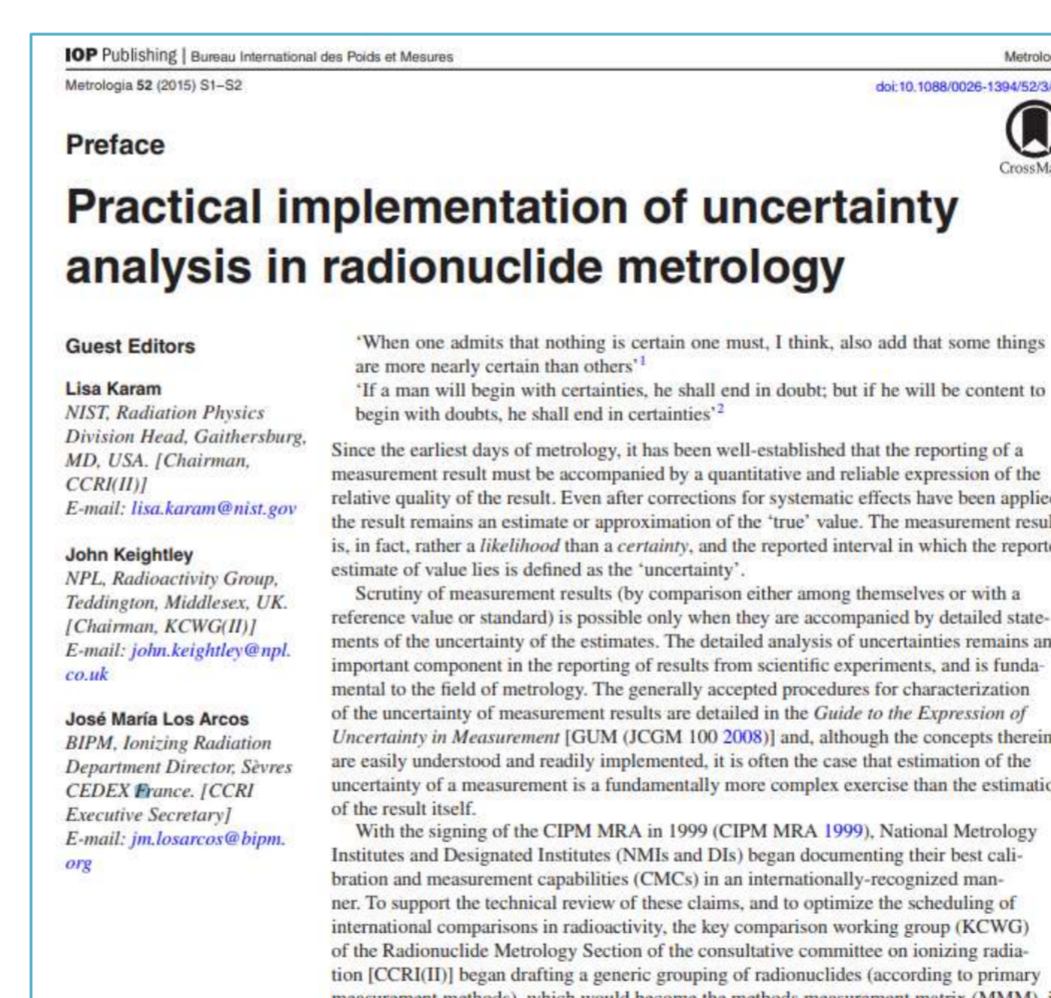
### Minimizing dependence on high-activity sources



Sealed radioactive sources are used to produce reference radiations for dosimetry, radioactivity and neutron metrology, but such sources can be safety and security risks. By sharing resources (for example, working with the IAEA) and developing new methods for comparing standards, the CCRI is working to reduce the dependence on such sources.

## Disseminating best practice and engaging with stakeholders

- Streamlined the CCRI structure to improve NMI participation.
- Published a *Metrologia* Special Issue on estimating uncertainties in radionuclide metrology.
- Published nuclear decay data in collaboration with the LNHB (France).
- Promoted adoption of new reference data for dosimetry (ICRU90).



## How ionizing radiation metrology impacts you...



4 million cancer treatments per year



4 billion diagnostic images per year



11 million radiation workers



450 nuclear power plants, 11 % of the world's electricity