การประเมินความไม่แน่นอนในการวัดปริมาณส่วนบุคคลทั้งเก้าแห่งในเอเชียและภูมิภาคแปซิฟิก

UNCERTAINTY EVALUATION IN MEASUREMENT OF THE PERSONAL DOSE EQUIVALENT AT NINE INDIVIDUAL MONITORING SERVICES IN ASIA AND THE PACIFIC REGION

ช่วงเวลาดำเนินการ ปี พ.ศ. 2563

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รายละเอียดสรุป

This paper presents the results of the evaluation of the uncertainty in measurement of the personal dose equivalent, Hp(10), at nine individual monitoring services (IMSs) in Asia and the Pacific region. Different types of passive dosemeters were type-tested according to the International Electrotechnical Commission 62387 requirements. The uncertainty in measurement was calculated using the Guide to the Expression of Uncertainty in Measurement approach. Expanded uncertainties ranged between 24 and 86% (average = 38%) for Hp(10) values around 1 mSv and between 14 and 40% (average = 27%) for doses around the annual dose limit, Hp(10) = 20 mSv. The expanded uncertainties were lower than the 1.5 factor in either direction proposed by the International Commission on Radiological Protection for doses near the relevant dose limits. This indicates an acceptable level of uncertainty for all participating IMSs. Uncertainty evaluation will help the IMSs to acknowledge the accuracy of their measurements.

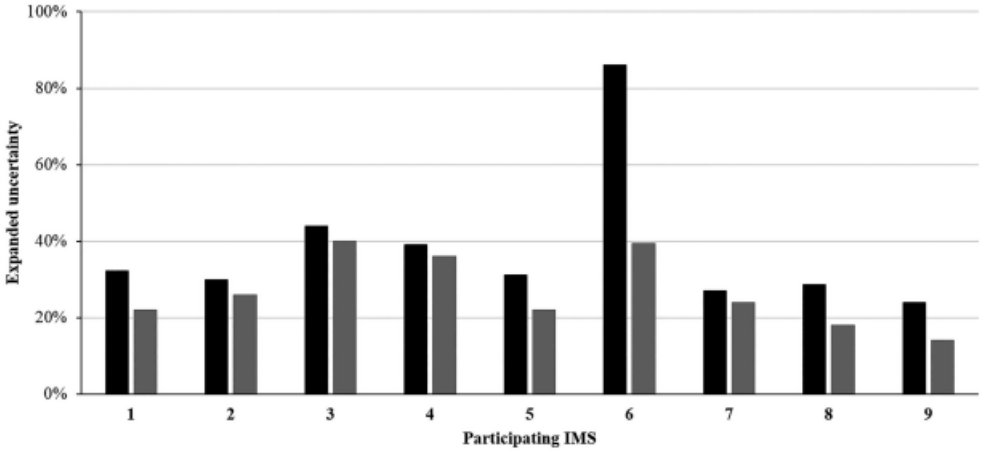

Figure 1. The expanded uncertainty for each IMS for $H_p(10)$ around 1 mSv (black columns) and 20 mSv (grey columns).