

# OPERATING DEVICES FOR RADIATION PROTECTION: ACCEPTABLE DEVIATIONS FROM LEGAL METROLOGY POINT OF VIEW

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Motto: "A man with a watch knows what time it is. A man with two watches is never sure"

If we have available two dose rate meters it can happen their indications differ significantly, not just by a small percentage but the difference can be up to several times. This is also case other operational devices, e.g. surface contamination meters both portable and installed or equivalent dose rate meters. We can get the consideration: the first what is the real value measured and the further, which of the devices is defective. Usability of meters in terms of legal metrology is defined according to technical standard requirements (usually IEC standards). Based on the standard tests both this meters may be accurate. Requirements from some of the standards to gauge accuracy are listed in this work.

In terms of physical principles of measurement and operational characteristics of meters this standards cannot be called overly liberal. Exact measurements (particularly in the normal radiation background) are very time-consuming and need expensive high end instruments. For the purposes of this paper I consider by operational meters those designed for "fast and easy measurements". Technical standards requiring high precision could not be justified at least for radiation protection purposes.

The objective of this paper is to draw attention to possible discrepancies in the measuring the quantities of ionizing radiation mainly in natural environment, that cannot be explained by faulty gauges. In addition I would like to draw the attention to these issue radiation protection researchers, document that uncertainties in estimating the impact of exposure and transfer them into the language of used meters tolerances.

## REFERENCES

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