

Technical Note No. 318

Revision of the International Standard ISO 8769

Dr. Alfred Klett, Rev. 02, June 22, 2010

Introduction

The International Standard ISO 8769 *Reference sources — Calibration of surface contamination monitors — Alpha-, beta- and photon emitters* is currently revised to replace the 1st editions of the existing standards ISO 8769:1988 and ISO 8769-2:1996 to produce a single standard reflecting the developments since publication.

Revised uniformity requirements

In clause 5.2.3 of the ISO/FDIS 8769:2010 draft there are revised uniformity requirements. The uniformity expressed in terms of standard deviations of the surface emission rates from each individual portion of the whole source shall be not greater than

- 5% for Class 1 Reference Sources (formerly 10%)
- the area of the portions shall be 5 cm² or less (formerly 10 cm²)

Comments to the revised uniformity requirements

Leading and well recognized manufacturers of contamination monitors and reference sources, (among of them Berthold Technologies) are claiming that the revised uniformity requirements would

- be difficult to achieve and cause a significant increase in price and a reduced availability of these reference sources.
- not be needed for any state-of-the art measurement with a contamination monitor with reasonably large averaging area.
- render many existing reference sources immediately obsolete after the revised standard's publication.

Germany made similar comments already on the CD and DIS drafts and proposed to use the former values 10% and 10 cm² instead. But these comments have been ignored and Germany's vote was therefore "Disapproval".

The driving force behind the revised uniformity requirements seems to emanate from only one country. In the United Kingdom there are calibration laboratories demanding these uniformity requirements for the calibration of contamination monitors with very small sensitive areas. Their problem could easily be solved by characterizing the sources.

As a manufacturer of contamination monitors we would advise against contamination measurement with very small averaging areas. The smaller the averaging area the more difficult it is to obtain acceptable uncertainties in contamination measurement. Technical progress in contamination monitoring is towards measurement with larger averaging areas. This is for the purposes of Radiation Protection more accurate, safer, more efficient, faster and even cheaper. Because the revision of ISO 8769 seems to be moving in the opposite direction we consider it as a retrograde step.

Conclusion

The new uniformity requirements are without any benefit for customers but will certainly add significantly to their expense. We firmly believe that the approval of the Standard as it now stands will be an unmitigated disaster for the manufacturers and therefore for the industry and users in general. The requirements for the Wide Area Reference Sources (Class 1 and 2) are too demanding for commercial manufacture; the effort to meet the required specifications is far too great and will translate into product pricing that will be too high for the users, such that the sources will neither be purchased nor used by the user community who needs them. The inability of manufacturers to supply such sources at prices that users can afford will destroy the underlying principle that encouraged the creation of the Standard in the first instance.