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# NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

# GB/T 12164.3-2013

## Reference beta radiations -- Part 3: Calibration of area and personal dosimeters and the determination of their response as a function of beta radiation energy and angle of incidence

β参考辐射 第3部分：场所和个人剂量仪的校准及其能量响应和角响应的确定

**(English Translation)**

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Preview: page 1 of 4 shown, 19 in the full document. Complete English PDF, instant download:
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# Table of Contents

Preface
1 Scope
2 Normative references
3 Terms and definitions
4 Applies to all sites and personal dosimeters calibration procedure
5 Special place dosimeter calibration procedure
6 Personal dosimeter special calibration procedure
7 Expression of results
Appendix A (normative) Symbols and Abbreviations
Appendix B (normative) Reference conditions
Annex C (informative) Some beta reference radiation field conversion coefficient of
References

## Foreword

GB/T 12164 "beta reference radiation" is divided into three parts.

--- Part 1. generating method;

--- Part 2. Characterization of the radiation field and a substantial amount of relevant calibration basis;

OK place and personal dosimeters calibrated response and its energy and angular response. Part --- 3.

This section GB/T Part of 312,164.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section uses the translation method identical with ISO 6980-3:2006 "beta reference particle radiation - Part 3. Location and personal dosimeter Calibration and the energy and angular response is determined. " Consistency correspondence with international standards in this standard references of the following documents.

--- GB/T 12164.1-2008 beta reference radiation - Part 1. production method (ISO 6980-1:2006, IDT).

And ISO 6980-3:2006 as compared to, for ease of use, this section made the following editorial changes.



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--- 4.1.1 change the title "Select Source" and cancel 4.1.1.1 title.

This part is proposed by the China National Nuclear Corporation.

This part of the National Nuclear Energy Standardization Technical Committee (SAC/TC58) centralized.

This section drafted by. China Institute of Atomic Energy.

## 1 Scope

Given radiation protection dose (rate) meter response, and determining the dose (rate) meter energy response and angular response methods.

This section applies to a calibration and determine the amount of practical ICRU radiation protection dose (rate) meter response.

This section does not apply to fixed place dosimeter field calibration.

## 2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 12162.3-2004 for calibrating dosemeters and dose rate meters and for determining their response of X and gamma reference radiations 3 . Determination of the calibration response and energy and angular response of dosimeters and workplace personal dosimeter (ISO 4037-3:1999, IDT) GB/T 12164 (all parts) beta radiation reference ISO 6980-1 nuclear beta reference radiation particles - Part 1. production method (Nuclearenergy-Referencebeta-particle radiation-Part 1. Methodsofproduction) ISO 6980-2:2004 Nuclear beta reference particle radiation - Part 2. Characterization of the radiation field and the fundamental basis of the amount of the relevant calibration (Nuclearenergy-Referencebeta-particleradiation-Part 2. Calibrationfundamentalsrelatedtobasic quantitiescharacterizingtheradiationfield) no. ICRU51 Report. Quantities and units (Quantitiesandunitsinradiationprotection 1993 Radiation Protection Dosimetry) International Basic and General Terms in Metrology (VIM), BIPM/IEC/International Federation of Clinical Chemistry/International Standard Organization for Standardization/International Union of Pure and applied chemistry/International Union of Pure and Applied Physics/international legal metrology organizations [International vocabularyofbasicandgeneraltermsinmetrology (VIM), BIPM/IEC/IFCC/ISO/IUPAC/IUPAP /OIML]



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## 3 Terms and Definitions

No. ICRU51 and the following terms and definitions are defined reports and VIM apply to this document.

ICRU tissue ICRUtissue Density of material 1g · cm-3, the quality of the group is divided into. O. 76.2%; H. 10.1%; C. 11.1%; N. 2.6%.

**Note:** See report No. ICRU39.

Beta largest energy maximumbetaenergy Emax One or several specific beta particle-emitting nuclide in a continuous spectrum of maximum energy.



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