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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 25439-2010

**Standard method for using cellulose triacetate dosimetry
system to measure absorbed dose**

使用三醋酸纤维素剂量测量系统测量吸收剂量的标准方法

(English Translation)

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Foreword

This standard is identical with ISO/ASTM51650:2005 "cellulose triacetate dosimetry system application standards" (in English).

This standard is equivalent translation ISO/ASTM51650:2005.

For ease of use, this standard made the following editorial changes.

--- The standard name is now changed to "the use of cellulose triacetate dosimetry systems for measurement of absorbed dose standard method";

--- In Chapter 2, "Normative references", the referenced ISO and ASTM standards, who have converted to our standards, references to Our standards;

--- According to the requirements of the standard preparation of some of the formatting to be modified;

--- International standards misprints modification;

--- International standard appendix A has been modified, added other CTA film dosimeters

information, delete the international standards Appendix A for information about photometer.

Appendix A of this standard is the data appendix.

The standard proposed by China National Nuclear Corporation.

This standard by the National Standardization Technical Committee on Nuclear Energy (SAC/TC58) centralized.

This standard was drafted. China Institute of Atomic Energy.

1 Scope

1.1

standard specifies the use of cellulose triacetate (CTA) dosimetry systems for measuring electron and photon radiation, water absorbent Scale Shown is absorbed radiation dose and dose distribution in the material handling and testing procedures. CTA dosimeter is a suitable dose distribution measurement Work dosimeter.

1.2

CTA standard dosimetry system suitable conditions.

- a) absorbed dose range. 10kGy ~ 300kGy (electrons and photons).
- b) absorbed dose rate range. $3\text{Gy} \cdot \text{s}^{-1} \sim 4 \times 10^{10}\text{Gy} \cdot \text{s}^{-1}$.
- c) electron irradiation energy range. 0.2MeV ~ 50MeV.
- d) radiation photon energy range. 0.1MeV ~ 50MeV.
- e) dosimeter irradiation temperature range. $-10\text{ }^{\circ}\text{C} \sim 70\text{ }^{\circ}\text{C}$.

1.3

This standard does not involve security issues associated with its use. Users of this standard is responsible for establishing the applicable safety and health standards and make Before use to determine its limits applicable.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 16509 doses of radiation processing of Measurement Uncertainty guidelines (GB/T 16509-2008, ISO/ASTM51707.

2005, IDT)

GB/T 16510 radiation processing dosimetry calibration laboratory competency requirements (GB/T 16510-2008, ISO/ASTM51400.

2002, IDT)

Selection and calibration of the guide GB/T 16640 dosimetry systems for radiation processing is (GB/T 16640-2008, ISO/ASTM51261:2002, IDT) the term ASTM E170 radiometry and dosimetry Determination ASTM E177 material properties in terms of precision and accuracy of application profiles ASTM E178 deviation observed value processing specification ASTM E925 narrow pass band regularly calibrated spectrophotometer specification ASTM E958 UV - Vis spectral bandwidth for measurement of actual Report No. ICRU14 radiation dosimetry. the maximum photon energy between 0.6MeV ~ 50MeV X-rays and gamma-rays X-ray voltage between 5kV ~ 150kV produced. Report No. ICRU17 radiation dosimetry Report No. ICRU34 pulsed radiation dosimetry Report No. ICRU35 radiation dosimetry. energy between 1MeV ~ 50MeV electron beam Report No. ICRU37 electrons and positrons stopping power Report No. ICRU60 basic Ionizing Radiation Quantities and Units

3 Terms and Definitions

ASTM E170 and No. ICRU60 report and established the following terms and definitions apply to this standard.