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

GB/T 16510-2008

Replacing GB/T 16510-1996

**The requirements for the competence of a radiation processing
dosimetry calibration laboratory**

辐射加工剂量学校准实验室的能力要求

(English Translation)

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Foreword

This standard is identical with ISO/ASTM51400:2002 "Practice of high-dose radiation dosimetry calibration laboratory features and capabilities" (English Chinese Version).

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

- a) in accordance with Chinese custom to write some format has been modified.
- b) In Chapter 2, "Normative references" in the referenced international standards ISO and ASTM, etc., who have converted to our standards (including Metrology regulations), the reference to our standards.
- c) Remove the informative Appendix A, increased by reference.

This standard replaces GB/T 16510-1996 "Radiation processing dosimetry calibration laboratory capacity requirements." this standard and GB/T 16510-1996 compared to the main changes are as follows.

--- In the "meaning and purpose" Zhang added "activities in the calibration laboratory to meet the GB/T 15481 General requirements also should meet GB/T 15481 and ISO 9000 series of standards requirements; when it acts as a manufacturers calibration results, further it should include the ISO 9002 standard for assurance model requirements. "Content provisions (Chapter 4 of the 1996 version; this version 4.4);

--- In the universal "meaning and purpose" chapter added "engaged in specific areas of calibration laboratories should also GB/T 15481 of Supplementary requirements and instructions. "Requirements (Chapter 4 of the 1996 edition; 4.5);

--- Were given to "special areas of ionizing radiation calibration laboratory" and "application gamma-rays, electron beam and X-ray (bremsstrahlung) and other particle types of ionizing radiation calibration laboratory dedicated field "additional requirements and instructions chapter (Chapter 6, 1996 edition; Chapter 6 and Chapter 7);

--- The 1996 edition of "absorbed dose measurements laboratory calibration device is compared with the corresponding national standards, the deviation should be 3% in

persons Inside "with" absorbed dose measurements laboratory calibration device is compared with the corresponding national standards, the deviation shall be 5% in persons Inside. "(See the 1996 version 6.3.6; this version 7.4);

--- Part equipment requirements. A "span calibration laboratory should establish coverage, after examination certified reference standards and transfer standards Dosimetry system "requirements; deleted 6.6.4.1,6.6.4.2,6.6.4.3,6.6.4.4,6.6.4 1996 edition. 5 and

6.6.4.6 Specific instrument metrological characteristics of the main requirements for content (see the 1996 version 6.6.4; this version 6.8);

--- Adjust the content of "Measurement Uncertainty" chapter (see Chapter 7, 1996 Edition; Chapter 8 edition);

--- Remove the 1996 version of Appendix A, increased by reference.

The standard proposed by China National Nuclear Corporation.

This standard by the National Standardization Technical Committee of nuclear energy.

This standard was drafted. China Institute of Metrology.

1 Scope

This standard specifies the radiation processing dosimetry calibration laboratory should have the capacity requirements. This capability will ensure that the laboratory can provide accurate Reliable calibration and testing services. Standards for radiation processing dosimetry calibration laboratory in the establishment and implementation of its quality system, can also be as a certification body for laboratory authentication and authorization basis.

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 15481 testing and calibration laboratories General requirements (GB/T 15481-2000, ISO/IEC 17025:1999, IDT) GB/T 16509 doses of radiation processing of Measurement Uncertainty guidelines (GB/T 16509-2008, ISO/ASTM51707:2005, IDT) Selection and calibration of the guide GB/T 16640 dosimetry systems for radiation processing is (GB/T 16640-2008, ISO/ASTM51261:2002, IDT) ISO 9002 quality system of production, installation and service quality assurance model ASTM E170 radiation dose measurement and academic language Use ASTM E177 material properties testing precision and bias in

terms of practice ASTM E456 volume and statistical terms Standard tests to reduce the dose of radiation damage ASTM E1249 measurement error using Co-60 radioactive sources silicon electronics practice ASTM E1250 application ionization chamber radiation damage assessment silicon electronics in the tests again Co-60 irradiator component with low energy gamma Test method

3 Terms and Definitions

ASTM E170 and ICRU Report No. 60 and established the following terms and definitions apply to this standard.

It is measured and recognized as the reference value of the maximum acceptable deviation. Accepted reference value is determined by the national standards.

Determining relationships between the magnitude of the measurement system is provided by a measure corresponding to the indicated value; the operation should be carried out under specified conditions, and includes measurement Uncertainty Evaluation.

Note: Measurement criteria include. Standard reference dosimeter, transfer standard dosimeters and dosimeter work.

The dosimeter, measuring instruments, a dose response calibration curve (or dose response functions) or related procedures and use of reference standards with the composition to determine the absorbed dose system.

GB/T 16510-2008/ISO/ASTM 51400:2002