

ICS 27.120.01
CCS F 80



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

GB/T 19661.2-2015

Replacing GB/T 19661.2-2005

**Safety requirements for nuclear instrumentations and systems
-- Part 2: Constructional requirements and classification of
radiometric gauges**

核仪器及系统安全要求 第2部分：放射性测量计的结构要求和分级

(English Translation)

Issued on: October 9, 2015

Implemented on: May 1, 2016

Issued by: Standardization Administration of China

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Foreword

GB/T 19661 "Nuclear Instruments and system security requirements" is divided into two parts.

--- Part 1. General requirements;

--- Part 2. Radioactive meter structural requirements and classification.

This section GB/T 19661 Part 2.

This section shall only radioactivity meter structural requirements and classification, its General requirements for safety see section 1, the first portion of this section Joint use points.

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

This Part replaces GB/T 19661.2-2005 "Nuclear Instruments and systems - Safety requirements - Part 2. radiation protection requirements", and GB/T 19661.2-2005 compared to the main technical changes are as follows.

--- Name to "Nuclear Instruments and systems - Safety requirements - Part 2. Radioactive meter structural requirements and classification";

--- Fixed gauge for category C with the introduction of its associated test procedure independent source box;

Letter indicating the level of fire protection;

--- A "dose rate levels" instead of "radiation protection level"; Level 7 or E represents the current ICRP (International Commission on Radiological Protection) Regulations;

--- Introduction of fire level;

--- Modify dose equivalent rate measurement program;

--- Increase in Appendix A (informative) "Radioactive meter Installation Guide." this section uses redrafted law revision adopted IEC 62598:2011 "structural requirements for radioactive nuclear instruments and gauges classification" (English Text version 1).

Important changes to this part of IEC 62598 as follows (terms of these differences have been involved through the vertical blank space in the outside margin Single line (|) be marked).

--- Chapter 1, "scope" add "this part of GB/T 19661 specifies the radioactivity meter classification, general requirements for ionizing radiation Shooting guard, OK, test methods, system-level code and flag, accompanied by documents other safety devices, dose equivalent rate. ";

--- Chapter 2, "Normative references", where there are a corresponding document of international documents, are used instead of the file, and indicate Yuguo the degree of international consistency documents; In addition, the increase in references GB 18871-2002 "ionizing radiation protection and safety of radiation sources fundamental standard";

--- Order term logic, the original 3.2 "probe assembly" and 3.3 "Probe" exchange;

--- 8.4 "dose equivalent rate measurement program" b) increase the measurement of beta radiation in;

--- 9.2 "gate and the source holder temperature cycle test," adds 7 "Temperature cycle test procedure time map";

--- 10.1 "system-level code," the structure of the code is compiled in FIG. 8;

--- 10.2 "Source box flag" increased 9 "ionizing radiation symbol";

--- Chapter 11, "accompanying documents" i) the words "the use of radioactive sources, when the transfer and termination of the use of radioactive sources in line with our laws and management Administration Guide disposal regulatory requirements; "stressing that" the management of radioactive sources in line with our legal and regulatory requirements. " this section also made the following editorial changes.

--- Remove IEC 62598 introduction, the main contents of introduction written foreword;

--- Name to "Nuclear Instruments and systems - Safety requirements - Part 2. Radioactive meter structural requirements and classification." this part is proposed by the China National Nuclear Corporation.

This part of the National Nuclear Instrument Standardization Technical Committee (SAC/TC30) centralized.

This section drafted by. Institute of High Energy Physics.

1 Scope

This section GB/T 19661 specifies the radioactivity meter classification, general requirements for ionizing radiation protection and other safety devices, Determination of dose equivalent, test methods, system-level code and flag, accompanying documents.

This section applies to radioactivity meter (hereinafter referred to simply meter) manufacturing and installation. It is also suitable for use in the meter Source box.

This section does not apply to portable meter, because their structure and target applications for mobile devices. This section also does not apply Meter for measuring the X-ray tube with the work, but it can use these reference meter.

This section does not include mechanical and electrical hazards.

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 2900.82 Electrotechnical terminology nuclear instrumentation equipment, systems, equipment and detectors (GB/T 2900.82-2008, IEC 60050-394:2007, IDT) GB 4075 Sealed radioactive sources - General requirements and classification (GB 4075-2009, ISO 2919:1999, MOD) GB 4793.1-2007 measurement, control and laboratory safety requirements for electrical equipment Part 1. General requirements (GB 4793.1-2007, IEC 61010-1:2001, IDT) GB/T 4835.1 Radiation protection instrumentation beta, X and gamma radiation surrounding and/or directional dose equivalent (rate) meters and/or monitors for the first Part I. Portable workplace and environmental meters and monitors (GB/T

4835.1-2012, IEC 60846-1:2009, IDT) GB/T 4835.2 Radiation protection instrumentation beta, X and gamma radiation surrounding and/or directional dose equivalent (rate) meters and/or monitors for the second Parts. a portable emergency radiation protection High range beta and photon dose and dose rate meter (GB/T 4835.2-2013, IEC 60846-2.

2007, NEQ)

GB/T 7352 the use of sources of ionizing radiation measuring electrical systems and instrumentation (GB/T 7352-2008, IEC 60476:1993, NEQ) GB/T 11923 ionizing radiation level meter (GB/T 11923-2008, IEC 60982. 1989, NEQ) GB/T 13980 ionizing radiation densitometer (GB/T 13980-2008, IEC 60692:1999, NEQ) GB/T 14318 Radiation protection instrumentation neutron ambient dose equivalent (rate) meters (GB/T 14318-2008, IEC 61005:2003, IDT) GB/T 15636 ionizing radiation thickness gauge (GB/T 15636-2008, IEC 61336:1996, NEQ) GB/T 18268 (all parts) measurement, control and laboratory use EMC requirements for electrical equipment [IEC 61326 (all section Points), IDT] GB 18871-2002 ionizing radiation protection and safety of radiation sources basic standards ISO 921 nuclear vocabulary (Nuclearenergy-Vocabulary)