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

GB/T 10253-2012

Replacing GB/T 10253-2001

**Equipment for monitoring of radionuclides in liquid effluents
and surface water**

液态排出流和地表水中放射性核素监测设备

(English Translation)

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Foreword

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

This standard replaces GB/T 10253-2001 "liquid effluents or surface water beta, gamma Equipment for continuously monitoring radioactivity", and GB/T 10253-2001, compared the main technical changes are as follows.

- a) the standard name to "liquid effluents and surface waters radionuclide monitoring equipment";
- b) an increase in the number of national standards body of the standard referenced in the "2 Normative references" in;
- c) "3 Terms and definitions" increases the number of terms;
- d) increase the "Classified" chapter;
- e) increase the "equipment design" chapter;
- f) increase the "Electromagnetic Compatibility" content "Environmental performance test" chapter;

g) a large number of editorial changes.

This standard uses the translation method identical with IEC 60861:2006 "in liquid effluents and surface waters radionuclide monitoring equipment." Consistency correspondence with international standards in this standard references of the following documents.

--- GB/T 156-2007 standard voltage (IEC 60038:2002, MOD);

--- GB/T 17626.3-2006 Electromagnetic compatibility - Testing and measurement techniques RFEMS test (IEC 61000-4-3:2002, IDT), normative references are cited in IEC 61000-4-3:2006.

The standard IEC 60861:2006 made the following editorial changes.

--- Delete foreword international standards;

--- "2 Normative references" to the new standard replaces version of the standard (to IEC 60038:2002 instead of IEC 60038.

1983 to IEC 60050-394:2007 instead of IEC 60050-394:1995, with IEC 61000-4-6:2006 instead of IEC 61000-4-6:2004), and there are corresponding national standards with international standards to our standards;

--- Use the decimal symbol instead of the international standard decimal symbol " , " , " ;

--- Retain only the contents of the current used in the voltage and frequency of the AC power;

--- Table 2 "overload" in "activity that is irradiated 10 times full scale deflection" and twice requested does not match 7.8, the words "subject to twice full scale Degree of deflection activity irradiation. " the standard proposed by China National Nuclear Corporation.

This standard by the National Nuclear Instrument Standardization Technical Committee (SAC/TC30) centralized.

This standard was drafted. Xi'an Nuclear Instrument Factory, Institute of Nuclear Industry Standardization.

1 Scope

This standard specifies the liquid effluents and surface water emission alpha, beta or gamma radionuclide monitoring equipment technical requirements, the type of equipment Detection capability to provide guidance and noted that for the time and place of the device.

Note: The device has been demonstrated using a concentrated and the concentrate filter were collected so that the monitoring liquid alpha as possible, so this standard is also applicable to liquid the alpha monitored.

This standard applies to continuous monitoring of radioactivity following the liquid device.

- During normal operation of the discharge into the environment in liquid effluents;
- Surface water.

This standard does not apply to the special conditions in the event of an accident, it requires additional equipment capabilities.

This standard is limited to liquid effluents or in surface water total alpha activity or greater than the maximum energy of 150keV gamma total beta activity or activity connected Continued monitoring equipment. Sampling and laboratory analysis of this standard does not address.

This standard is intended for continuous monitoring of radioactivity in water generally require provision of equipment and gives examples of acceptable methods.

For such equipment, this standard specifies the general characteristics of the device, general test methods, radiation characteristics, security features, electrical properties, environment Properties, identification and qualification certificates. Performance requirements for the safe operation of electrical equipment, see GB 4793.1-2007. If the manufacturer or user wish Requires its equipment with appropriate safety signs (example. CE, UL mark), it shall comply with these safety requirements and corresponding test.

This standard applies to realize a function to monitor water.

- Measure liquid volume activity of radionuclides or count rate (see 5.1.2) and its changes over time;
- Activate the alarm when the volume of water activity or count rate exceeds the limit.

Appendix A shows the use of radioactive water monitor some guidance.

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 2423.34-2005 Environmental testing for electric and electronic products Part 2. Test methods - Test Z/AD. temperature/humidity group Combined cycle test (IEC 60068-2-38. 1974, IDT) GB/T 2900.81-2008 Electrotechnical terminology Nuclear Instruments Physical phenomena and basic concepts (IEC 60050-393:2003, IDT) GB/T 2900.82-2008 Electrotechnical terminology nuclear instrumentation equipment, systems, equipment and detectors (IEC 60050-394:2007, IDT) GB 4793.1-2007 measurement, control and laboratory safety requirements for electrical equipment Part 1. General requirements (IEC 61010-1:2001, IDT) GB/T 16511-1996 electrical and electronic measuring instruments accompanying documents (idt IEC 61187:1993) GB/T 17626.2-2006 Electromagnetic compatibility - Testing and measurement techniques - Electrostatic discharge immunity test

(IEC 61000-4-2:2001, IDT) GB/T 17626.4-2008 Electromagnetic compatibility - Testing and measurement techniques - Electrical fast transient burst immunity test (IEC 61000-4-4:2004, IDT)