



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

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**Non-destructive testing - Measurement and evaluation of the
X-ray tube voltage - Part 1: Voltage divider method**

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Foreword

This document was drafted in accordance with the provisions of GB/T 1.1-2020 "Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents".

This document is Part 1 of GB/T 41105 "Non-destructive testing - Measurement and evaluation of the X-ray tube voltage". GB/T 41105 is divided into 3 parts:

- Part 1: Voltage divider method;
- Part 2: Constancy check by the thick filter method;
- Part 3: Spectrometric method.

This document is identical to ISO 16526-1:2011 "Non-destructive testing - Measurement and evaluation of the X-ray tube voltage - Part 1: Voltage divider method".

It adds two chapters "Normative references" and "Terms and definitions" to this document.

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

This document was proposed by AND shall be under the jurisdiction of the National Technical Committee for Standardization of Nondestructive Testing (SAC/TC 56).

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1 Scope

This document specifies a method, for directly and absolutely measuring the average high voltage, at the secondary side of the high-voltage generator of the X-ray system, at a constant potential (DC). It establishes the corresponding relationship, between checking the high-voltage output and the indicated value of the tube voltage, on the control unit of the X-ray system.

This document is applicable to ensure the repeatable operation of X-ray systems. Tube voltage affects the penetration properties of materials AND the contrast of X-ray images. It also affects radiation protection related requirements.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

There are no terms and definitions, that need to be defined in this document.

4 Principles

The measurement principle of the voltage divider method is as shown in Figure 1.

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