NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

GB/T 3323.1-2019

Non-destructive testing of welds -- Radiographic testing -- Part 1: X-and gamma-ray techniques with film

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Foreword

GB/T 3323 "Non-destructive testing of welds - Radiographic testing" is divided into the following two parts.

- Part 1.X-and gamma-ray techniques with film;

- Part 2.X-and gamma-ray techniques with digital detectors.

This part is Part 1 of GB/T 3323.

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

This part replaces GB/T 3323-2005 "Radiographic examination of fusion welded joints in metallic materials". Compared with GB/T 3323-2005, the main technical changes are as follows.

- MODIFY the scope (see Chapter 1; Chapter 1 of the 2005 edition);

- MODIFY the normative references (see Chapter 2; Chapter 2 of the 2005 edition);

- MODIFY some term definitions and symbols (see Chapter 3; Chapter 3 of the 2005 edition);

- ADD the symbols and abbreviations (see Chapter 4);

- MODIFY the minimum image quality requirements (see 6.9; 5.9 of the 2005

edition);

- MODIFY the personnel qualifications (see 6.10; 5.10 of the 2005 edition);

- MODIFY the ride-on fillet welds into the seated pipe seat welds (see Figure 4, Figure 7, Figure 10, Figure 4, Figure 7, Figure 10 of the 2005 edition);

- MODIFY the X-ray machine, which has a tube voltage below 1000 kV (see 7.2.1; 6.2.1 of the 2005 edition);

- MODIFY the Appendix A, changing the linear image quality meter into a wire image quality meter; changing the image quality count value into an image quality value (see Appendix A; Appendix A of the 2005 edition);

- DELETE Appendix D ~ Appendix E of the 2005 edition.

This part uses the redrafting method, to modify and adopt ISO 17636-1.2013 "Non-destructive testing of welds - Radiographic testing - Part 1.X-and gamma-ray techniques with film".

Compared with ISO 17636-1.2013, the structure of this part is slightly adjusted, that is, 6.9 will be adjusted to 6.7, the others will be postponed; the order of Appendix A and Appendix B has been adjusted.

Compared with ISO 17636-1.2013, the main technical differences and reasons for this part are as follows.

- Regarding normative references, this part has made adjustments with technical differences, to adapt to China's technical conditions. The adjustments are reflected in Chapter 2 "Normative references". The specific adjustments are as follows.

* ADD the reference to GB/T 19943, which identically adopts the international standard ISO 5579 (see Chapter 1);

* USE the GB/T 12604.2, which identically adopts the international standard, to replace ISO 5576 (see Chapter 3);

* USE the GB/T 23901.1, which identically adopts the international standard, to replace ISO 19232-1 (see 6.8);

* USE the GB/T 23901.2, which identically adopts the international standard, to replace ISO 19232-2 (see 6.8);

* USE the GB/T 23901.4, which identically adopts the international standard, to replace ISO 19232-4 (see 6.7);

*USE the GB/T 19802, which identically adopts the international standard, to replace ISO 5580 (see 6.9, 7.8, 7.10);

*USE the GB/T 9445, which identically adopts the international standard, to replace ISO 9712 (see 6.10);

*USE the GB/T 19348.1, which modifies and adopts the international standard, to replace ISO 11699-1 (see 7.3, Table 3, Table 4);

*USE the GB/T 25758 (all parts), which identically adopts the international standard, to replace EN 12543.1~ EN 12543.5 (see 7.6);

*USE the GB/T 19348.2 to replace ISO 11699-2 (see 7.9).

This part also made the following editorial changes.

- DELETE ISO 5579 and ISO 19232-3 from the "Normative references".

This part was proposed by AND shall be under the jurisdiction of the National Welding Standardization Technical Committee (SAC/TC 55).

Drafting organizations of this part. Shanghai Institute of Materials, Shanghai Qinhe Welding Technology Development Co., Ltd., Wuxi Rilian Technology Co., Ltd., Shanghai Aerospace Power Technology Engineering Co., Ltd., China Guangdong Nuclear Engineering Co., Ltd., Hubei Sanjiang Aerospace Jiangbei Mechanical Engineering Co., Ltd., Tianjin Municipal Special Equipment Supervision and Inspection Technology Research Institute, Xiamen Special Equipment Inspection and Testing Institute, Zhejiang Youerte Testing Technology Co., Ltd., Shanghai Baoye Engineering Technology Co., Ltd., Offshore Oil Engineering Offshore Engineering Technology Service Co., Ltd., Hangzhou Yineng Electric Power Technology Co., Ltd., Harbin Welding Research Institute Co., Ltd., Jinyun Kelier Testing Equipment Co., Ltd.

1 Scope

This part of GB/T 3323 specifies the radiographic testing technology for fusion welding of metallic materials.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) is applicable to this standard.

3 Terms and definitions

The terms and definitions as defined in GB/T 12604.2, as well as the following terms and definitions, apply to this document.

4 Symbols and abbreviations

The symbols and abbreviations, which are given in Table 1, apply to this document.

5 Grading of radiographic testing technology

Radiographic testing technology is divided into two grades.

6 General rules

The surface of the workpiece should be permanently marked, to ensure the accurate positioning of each film (for example. zero point, direction, marking, size, etc.).

In the radiographic testing report, it shall indicate the type and model of the image quality indicator used AND the achieved image quality value.

7 Recommended radiographic testing technology

The ray source is on one side of the tested workpiece; the film is on the other side, as shown in Figure 1.