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JJG

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

JJG 773-2013

Replacing JJG 773-1992

**Verification Regulation of Medical Radiation Source for γ -ray
Afterloading Brachytherapy
(English Translation)**

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3 Terminology and units of measurement (1)

3.1

The term (1)

7.5 Test cycle (7)

Appendix A of the ionization chamber line correction factor (8)

Appendix B and the water absorbed dose conversion factor $Clambdax$ and exposure to air kerma conversion factor $Clambdak$ (9)

Appendix C after brachytherapy commonly used radionuclides exposure rate constant τ_{ax} and air kerma rate constant τ_{ak} (10)

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Introduction

This procedure based on JJF1002-2010 "national verification procedures to write the rules" to prepare.

The regulations replace JJG 773-1992 "close after gamma-ray radiation brachytherapy." this procedure compared with JJG 773-1992, in addition to editorial changes, the main technical differences are as follows.

- According to the requirements JJF1002-2010, an increase of introduction;
- Increasing the ionization chamber line of the amended definition (see 3.1.5); and in absorbed dose calculation formula, modify agent the amount of the gradient correction factor for the ionization chamber line of the correction factor (see 7.3.2.1 and Appendix A);
- After loading dose radiation output --- modified randomly selected multiple sources (radiation) source system repeatability to Seek, from 5% modified to not more than 3.0% (see 5.1.2);
- Increase the radiation directivity requirements and test methods (see 5.4 and 7.3.4);
- Modify the phantom and measurement bracket requirements (see 7.1.2.2);
- Increasing the absorbed dose to the applicator error assays and kinds of provisions "when the test is administered must Comprising at least one metal hose applicator and

applicator "(see 7.3.2.5);

Test methods --- transmission source of bias in place, for photographic film with a slow method of modifying the original procedures described Said that verification operational, while the image size by specifying sources formed to standardize imaging quality Volume, thereby improving the accuracy of measurement (see 7.3.5.1);

--- Increasing the typical radionuclide air kerma conversion factor K_{air} value queries (see Appendix B).

The previous versions of the release JJG 773 case.

--- JJG 773-1992.

After the medical device gamma-ray brachytherapy Radiation test procedures

1 Scope

The order applies to medical gamma-ray after-loading brachytherapy radiation (dose rate range of about 0.01Gy/min ~ 5Gy/min) the initial verification, use and subsequent verification check.

This procedure does not apply to medical neutron radiation sources close brachytherapy, radiation therapy and medical Sticking seed implantation Radiation therapy and other verification.

2. References

This procedure references the following documents.

JJF1035 ionizing radiation measurement terms and definitions GB 4075 Sealed radioactive sources - General requirements and classification GB 9706.13-2008 Medical electrical equipment - Part 2. automatic control of brachytherapy equipment installed Requirements for safety (IEC 60601-2-17:2004, IDT) GB Z121-2002 after loading brachytherapy source gamma health protection standard for dated references, only the dated edition applies to this procedure; undated reference documents Member, the latest edition (including any amendments) applies to this procedure.

3 terminology and units of measurement JJF1035 "ionizing radiation measurement terminology and definitions" and defined the following terms and definitions apply to this procedure.

3.1 Terms

3.1.1 After installation technology afterloadingtechniques Pre-positioned in a patient in need of treatment administered the site correctly, then the inner receptacle radioactive source is input applicator in the implementation of treatment technologies.

3.1.2 gamma-rays after loading brachytherapy gamma-rayafterloadingbrachytherapy with

mounting technology, in accordance with the clinical requirements, so that gamma radioactive source resides or shipped between the body's natural cavity, duct or tissue Moving, but to achieve a predetermined dose of radiation treatment and distribution.

3.1.3 applicator radiationsourcesapplicator Previously placed between the body cavity, duct or tissue, for presence or movement of radioactive sources, and the implementation of a special container treatment Treatment is also known. Such as a needle, tube, or have other special shape of the applicator.

3.1.4 source storage device storecontainerofradiationsources After the storage container brachytherapy radioactive sources.

3.1.5 ionization chamber line corrections correctionofionizationchamberdimension in the dose distribution, since the distance between the point source is too close, the ionization chamber can not be seen as a correction point detectors carried out, such a Fixed distance main ionization chamber cavity with maximum size and point source related to the ionization chamber.