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JJG

NATIONAL METROLOGY VERIFICATION REGULATION OF THE PEOPLE'S REPUBLIC OF CHINA

JJG 1179-2021

Medical Diagnostic X-ray Radiation Sources for Spiral Computed Tomography(CT)Radiation Therapy Simulating Localization

医用诊断螺旋计算机断层摄影装置（CT）放射治疗模拟定位X射线辐射源检定规程

(English Translation)

Issued on: October 18, 2021 **Implemented on: April 18, 2022**

Issued by: State Administration for Market Regulation

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7.5 Verification Period(11)

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Introduction

JJF1002-2010 "Rules for the Compilation of National Metrological Verification Regulations", JJF1001-2011 "General Metrology Terms and Definition" and JJF1059.1-2012 "Measurement Uncertainty Evaluation and Representation" together constitute support for the formulation of this Regulation the basic series of specifications.

In the formulation of this regulation, reference is made to JJG 961-2017 "Medical Diagnostic Spiral Computed Tomography (CT) X-ray radiation source", AAPMRPT_83 "CT radiotherapy simulation positioning machine and the quality of CT simulation positioning process Quantity Guarantee" and other documents technical requirements and methods.

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This regulation is published for the first time.

Medical Diagnostic Spiral Computed Tomography (CT) Radiotherapy simulation positioning X-ray radiation source verification regulations

1 Scope

This regulation applies to medical diagnostic spiral computed tomography (CT) radiotherapy simulation positioning X-ray the initial verification, subsequent verification and inspection in use of radiation sources (hereinafter referred to as CT radiotherapy analog positioning radiation sources).

2 Reference documents this regulation cites the following documents.

JJG 961-2017 Medical diagnostic spiral computed tomography (CT) X-ray radiation source JJG 1028-2007 Radiotherapy simulation positioning X-ray radiation source GB/T 10149 Terms and Symbols of Medical X-ray Equipment AAPMRPT _83 CT Radiation Therapy Simulation Positioning Machine and Quality Assurance of CT Simulation Positioning Process simulation process) for dated citations, only the dated version applies to this Regulation; for undated citations the latest version (including all amendments) applies to this regulation.

3 Terminology and units of measurement

3.1 Terminology

The terms and definitions defined in JJF1001, JJF1035 and the following apply to this regulation.

3.1.1 dose index

3.1.1.1 CT dose index 100 CTdoseindex100 (CTDI100) Vertical line dose distribution along the tomographic plane from -50mm to 50mm for a single axial scan the integral of is divided by the product of the number of volume slices N and the nominal volume slice thickness T.

For beamwidths with N·T less than 40mm.

CTDI100=integral

50mm

-50mm

N·Tdz

For beam widths with N·T greater than 40mm (all CT amplifiers except for beam limiter settings during measurement the operating conditions of the radiation source for the simulation positioning radiation source remain the same).

CTDI100=integral

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50mm

-50mm

DRefz

(N·T)Ref

CTDIfreeair,NxT

CTDIfreeair,Ref

where.

D(z)---dose distribution along the z-axis of the vertical line of the body plane (centered at z=0), this dose is divided into the cloth is measured in a polymethyl methacrylate (PMMA, plexiglass) phantom, but as measured by air absorbed dose;

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