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PEOPLE'S REPUBLIC OF CHINA

JJF 1745-2019

Calibration Specification for Two-dimensional Dosimeters for Radiation Therapy

放射治疗用二维剂量计校准规范

(English Translation)

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Introduction

This specification is based on JJF 1001-2011 "General Measurement Terms and Definitions", JJF 1059.1-2012 "Measurement "Assessment and Expression of Definiteness", JJF 1071-2010 "Rules for the Compilation of National Measurement and Calibration Specifications".

The formulation of this calibration specification refers to JJG589-2008 "Medical Electron Accelerator Radiation Source", JJG912-2010 "Therapeutic Level Ionization Room Dosimeter", JJG2044-2010 "Verification of Gamma Ray Air Specific Release Kinetic Energy Measuring Apparatus System Table, GB 15213-2016 "Medical Electron Accelerator-Performance and Test Methods", IEC 60976-2007 "Medical Basic requirements and methods of documents such as "Electrical Equipment for Medical Equipment with Electrical Equipment".

This specification is the first release.

Two-dimensional dosimeter for radiotherapy Calibration specifications

1 Scope

This specification applies to 60Co gamma rays used for radiotherapy, X-rays produced by accelerators and electron radiation dose measurement Try the calibration of the two-dimensional dosimeter.

2 Reference documents this specification refers to the following documents.

JJG589-2008 Medical electron accelerator radiation source JJG912-2010 therapeutic level ionization chamber dosimeter JJG2044-2010 gamma-ray air specific release kinetic energy measuring instrument verification system table GB 15213-2016 Medical electron accelerator performance and test methods IEC 60976-2007 medical electrical equipment medical electron accelerator performance for dated reference documents, only the dated version applies to this specification; for those without date references the latest version (including all amendments) is applicable to this specification.

3 Terms and units of measurement

3.1 Terminology

3.1.1 source-surfacedistance (SSD) the distance from the source to the center of the body surface.

3.1.2 source-chamberdistance (SCD) the distance from the source to the center of the ionization chamber.

3.1.3 Equivalent measuring depth equivalent measuring depth the distance between the ionization chamber or other detectors of the two-dimensional dosimeter for radiotherapy

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and the surface of the two-dimensional dosimeter is determined by the manufacturer it is given or marked on the two-dimensional dosimeter.

3.2 Unit of measurement Absorbed dose unit name. Ge [Swiss] or Centigrade [Swiss]; Symbol. Gy or cGy.

4 Overview

A two-dimensional dosimeter for radiotherapy (hereinafter referred to as a two-dimensional dosimeter) is a type that is sensitive to ionization chamber or other radiation the components are regularly arranged and fixed on the tissue equivalent material plate, and the instrument for measuring the plane distribution of the radiation dose is mainly composed of Array sensor, signal processing unit, data acquisition unit, data evaluation software, etc. The two-dimensional dosimeter uses electricity the principle of ionization generates positive and negative ion pairs, detects the ionized charge signal, and collects the signal to calculate the ionizing radiation Absorbed dose. According to the sensor type, it is divided into ionization chamber type two-dimensional dosimeter and semiconductor type two-dimensional dosimeter.

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