

HJ

INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

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Nuclear medicine radiation and safety requirements

核医学辐射防护与安全要求

(English Translation)

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Table of Contents

Foreword
1 Scope
2 Normative references
3 Terms and Definitions
4 General
5 Site selection and layout
6 Radiation safety and protection in the workplace
7 Management of radioactive waste
8 Radiation monitoring
Appendix A (Informative Appendix) Toxicity and Operation Modification Factors of Radionuclides Commonly Used in Nuclear Medicine
Appendix B (informative) Control of radionuclide activity in the patient at discharge
Appendix C (informative) Upper limit of radionuclide activity in cadavers that can be handled without special protective measures

1 Scope of application

This standard specifies the use of radiopharmaceuticals in medical institutions to carry out clinical nuclear medicine diagnosis and treatment, experimental research and radiopharmaceutical preparation activities.

radiation protection and safety requirements.

This standard applies to the design and construction of nuclear medicine workplaces in medical institutions and the radiation protection and safety management of nuclear medicine-related activities.

2 Normative references

This standard refers to the following documents or clauses thereof. For dated references, only the dated version applies to this standard.

For undated references, the latest edition (including all amendments) applies to this standard.

GB 18871 Basic standard for ionizing radiation protection and radiation source safety

3 Terms and Definitions

The following terms and definitions apply to this standard.

nuclear medicine

The application of radionuclides or radiopharmaceuticals for diagnosis, treatment of diseases, and medical research.

radiopharmaceutical

Radionuclide preparations or labeled compounds for use in disease diagnosis, treatment, or clinical research.

medical radioactive waste Gaseous, liquid and solid waste containing or contaminated with radionuclides produced in nuclear medicine activities.

decay pool

A container used to collect, store and discharge radioactive waste liquid in which the radioactive waste liquid decays naturally.

4.1 General requirements

4.1.1

The medical institution shall be fully responsible for the radiation protection and safety work of the nuclear medicine activities carried out, so as to realize the protection of radiation workers and public health.

public and environmental goals.

4.1.2

The medical institution shall judge the legitimacy of the nuclear medicine activities to be carried out to ensure that the activities carried out are legitimate.

4.1.3

In the process of planning, designing and constructing nuclear medicine workplaces and carrying out nuclear medicine activities, the principle of optimization of radiation protection shall be followed, so that the the magnitude of the exposure to the relevant individuals involved in nuclear medicine activities, the number of people exposed and the likelihood of exposure are kept within reasonable limits.

the lowest possible level.

4.1.4

The workplace where nuclear medicine activities are carried out shall implement hierarchical management.

4.1.5

The radiation workplace where nuclear medicine activities are carried out should be divided into control areas and supervision areas, and the workplace should be rationally laid out.

Logistics, airflow paths, and proper collection, temporary storage and disposal of radioactive waste from nuclear medicine activities.

4.1.6

The medical institution shall conduct regular radiation monitoring and assessment in the workplace and surrounding environment where nuclear medicine activities are carried out, and prove that the Rationality of radiation protection and safety measures.

4.1.7

Medical institutions that carry out nuclear medicine activities shall formulate appropriate emergency plans for radiation accidents, and do a good job in emergency preparedness and response to radiation accidents.

Make arrangements to effectively prevent radiation accidents or mitigate the consequences of radiation accidents.

4.2 Classification of radiation workplaces

According to the provisions of GB 18871, the radiation workplaces shall be classified into Class A and Class B according to the daily equivalent maximum operating volume of radionuclides.

and Class C. Please refer to Appendix A for the correction factors of toxicity and operation mode of radionuclides commonly used in nuclear medicine.

4.3 Radiation workplace zoning

4.3.1

The nuclear medicine workplace shall be divided into control area and supervision area according to the requirements of GB 18871, and shall be managed accordingly.

4.3.2

The control area of the nuclear medicine workplace mainly includes the cyclotron machine room, the radiopharmaceutical synthesis and packing room, and the radiopharmaceutical storage room.

Storage room, dosing room, post-dosing waiting room, scanning room, radionuclide treatment ward, special toilet for post-dosing patients, temporary storage of radioactive waste, Decay pools, etc.

4.3.3

The supervision area of the nuclear medicine workplace mainly includes the cyclotron and imaging equipment control room, the sanitary passage room and the control area.

other places or areas connected.

4.3.4

Standard ionizing radiation warning signs and signs indicating the control area should be set at the entrance of the control area, and signs should be set at the entrance of the supervision area.

Supervised area sign.

4.4.1 Dose Limits

The occupational exposure dose limit of nuclear medicine workers shall comply with the relevant provisions of B1.1 in Appendix B of GB 18871. The practice of nuclear medicine makes public the dose exposure limits for members shall comply with the relevant provisions of B1.2 in Appendix B of GB 18871.

4.4.2 Dose constraints

4.4.2.1

In general, the dose constraint value of occupational exposure shall not exceed 5 mSv/a;

4.4.2.2

The dose constraint value for public exposure shall not exceed 0.1 mSv/a.

4.4.3 Level of radioactive surface contamination control

The level of radioactive surface contamination control in nuclear medicine workplaces is implemented in accordance with GB 18871.

4.5 Discharge requirements for patients taking medication

4.5.1

In order to ensure that after the discharge of the radionuclide treatment patient, the family members and the public who are in contact with the patient will not exceed the relevant dose constraints.

or dose limit, the radionuclide activity in discharged patients should comply with the relevant provisions of Appendix B.