

HJ

INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

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**Technical specifications of radiation environmental protection
for other radioactive material's storage and solid waste's
landfill (Trial)**

伴生放射性物料贮存及固体废物填埋辐射环境保护技术规范（试行）
(English Translation)

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Foreword

To implement the Environmental Protection Law of the People's Republic of China and the Law of the People's Republic of China on the Prevention and Control of Radioactive Pollution, strengthen the Radiation environment management for storage of sexual materials and solid waste landfill, prevention and control of radioactive pollution, protection of the ecological environment and public radiation safety, Develop this standard.

This standard specifies rare earth, niobium/tantalum, zirconium and zirconium oxide, tin, lead/zinc, copper, steel, vanadium, phosphate, coal, aluminum, molybdenum, nickel, the storage of radioactive materials associated with the development and utilization of non-uranium (thorium) mineral resources such as germanium, titanium, gold and solid waste landfill facilities are Radiation environmental protection principles and general technical requirements that should be followed in the process of planning, construction, operation, shutdown, and monitoring. Other non-uranium (thorium) minerals Resources development and utilization activities can be implemented by reference.

This standard is issued for the first time.

This standard is organized and formulated by the Department of Radiation Source Safety Supervision of the Ministry of Ecology and Environment.

Drafting organization of this standard. China Nuclear Fourth Research and Design Engineering Co., Ltd.

This standard was approved by the Ministry of Ecology and Environment on March 3, 2020.

This standard will be implemented on April 1, 2020.

This standard is interpreted by the Ministry of Ecology and Environment.

Technical specifications for radiation environmental protection of associated radioactive materials storage and solid waste landfill (Trial)

1 Scope of application

This standard specifies rare earth, niobium/tantalum, zirconium and zirconium oxide, tin, lead/zinc, copper, steel, vanadium, phosphate, coal, aluminum, molybdenum, nickel, the storage of radioactive materials associated with the development and utilization of non-uranium (thorium) mineral resources such as germanium, titanium, gold and solid waste landfill facilities are Radiation environmental protection principles and general technical requirements that should be followed in the process of planning, construction, operation, shutdown, and monitoring. Other non-uranium (thorium) minerals Resources development and utilization activities can be implemented by reference.

Uranium (thorium) is a single nuclide activity concentration greater than 400Bq/g associated radioactive material storage and solid waste disposal, should be based on actual conditions the situation takes more stringent environmental protection measures.

2 Normative references

This standard quotes the terms in the following documents. For undated reference documents, their valid versions are applicable to this standard.

GB 18871 Basic standard for ionizing radiation protection and radiation source safety GB 23727 Regulations on Radiation Protection and Environmental Protection of Uranium Mining and Metallurgy HJ/T 61 Technical Specification for Radiation Environmental Monitoring

3 Terms and definitions

The following terms and definitions apply to this standard.

Other radioactive material Uranium (thorium) used or produced in the development and utilization of non-uranium (thorium) mineral resources is a raw ore with a single nuclide activity concentration exceeding 1Bq/g Intermediate products, tailings, and other residues, etc.

Other radioactive solid waste Uranium (thorium) produced in the development and utilization of non-uranium (thorium) mineral resources is a solid waste with a single nuclide activity concentration exceeding 1Bq/g, Including tailings, and other residues produced during mining and smelting.

4.1 Basic principles

4.1.1

The process of design, construction, operation and closure of associated radioactive material storage facilities, site selection, design, etc. of solid waste landfill facilities the construction, operation, closure, guardianship and other processes shall be carried out in accordance with relevant laws, regulations and standards.

4.1.3

The radioactive pollution prevention and control facilities that need to be built as supporting facilities for the development and utilization of associated radioactive mines in new, reconstruction and expansion projects shall be the main project is designed, constructed and put into production at the same time.

4.1.4

The associated radioactive ore development and utilization unit can construct the associated radioactive solid waste landfill facility by itself in accordance with this technical specification, or the associated solid radioactive waste is sent to the landfill facilities of other units for landfill.

Encourage the use of uranium mining and metallurgical facilities to landfill associated solid radioactive waste.

4.1.5

The associated radioactive mine development and utilization unit shall carry out source control and recycling of waste to minimize waste and adopt engineering measures.

And technical measures to ensure that the effluent meets the discharge standards.

4.1.6

Measures should be taken during the site selection, design, construction, operation, closure, and monitoring of associated solid radioactive waste landfill facilities to ensure Long-term safety and stability of barrier facilities.

4.2 General requirements

4.2.1

The associated radioactive materials should be stored separately from other materials.

4.2.2

The associated solid radioactive waste should be landfilled in time; if there are no landfill conditions, special facilities should be built for storage.

4.2.3

Encourage the recycling and utilization of valuable resources in associated solid radioactive waste to minimize waste; for uranium content up to 0.1% of solid waste should be recycled and reused as uranium resources.

4.2.4

The storage and landfill of associated solid radioactive waste should implement a ledger system.

4.2.5

The development and utilization unit of associated radioactive minerals shall implement relevant laws, regulations and standards issued by the state and industry, and provide necessary Manpower, material resources and other safeguard measures; establishment of radiation environment management institutions, with professional technicians and management personnel; establishment of radiation environment management posts Position responsibility system, education and training system, reporting system, etc.

4.2.6

If the associated solid radioactive waste has the characteristics of hazardous waste at the same time, its storage and landfill shall also meet the requirements of relevant technical standards for hazardous waste.

5 Site selection

5.1

The landfill facility site should meet the relevant requirements of the national and local ecological environment function zoning, land and space planning, etc.

5.2

The site of landfill facilities is preferentially selected in areas with relatively low population density and far away from drinking water sources; according to the public dose constraint value Requirements, natural environmental conditions and other factors, determine the distance between the site and environmentally sensitive targets through environmental impact assessment.

5.3

The landfill facility site should have good regional stability and rock and soil stability, no spring water exposed, low permeability, and resistance to radionuclides.

Has better blocking performance.