



The Management of Radioactive Wastes in China

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This paper want to introduce the management of radioactive wastes in China.

The Management System

The management system of radioactive waste consist of the institutional system and the regulatory system.

During the recent 30 years, more than 50 national standards and trades standards have been issued, will be published, or are being prepared, covering essentially all the process of wastes management.

State Environmental Protection Administration(SEPA) is in charge of not only the environmental protection view but also nuclear safety surveillance of radioactive waste management, especially in the aspect of HLW disposal.

China Atomic Energy Authority(CAEA) is a centralized management of the government responsible.

China National Nuclear Corp.(CNNC) is responsible for the management work of radioactive wastes within its system, implementing national policies on wastes management, and siting, construction and operation of LILW repositories and HLW deep geological repository.

The Policies of Radioactive Waste Management

The LILW for temporary storage shall be solidified as early as possible. Regional repository for disposal of low-and intermediate-level wastes shall be built.

HLW is Centralized disposal in geological repository.

The radioactive wastes and waste radioisotope sources must be collected to the signified place(facilities) for a relatively centralized management in each province,

The Accompanying Mineral radioactive wastes can be stored in the tailing dumps or connected to the storage place for a temporal storage, then transported to the nearby tailing dumps of installation or tailing dumps of mineral-accompanying waste for an eventual storage.

Activities in the Wastes Management

Radioactive wastes treatment and conditioning

Since 1970, the study on the HLLW vitrification has been initiated. In 1990, a cold test bench for the vitrification (BVPM), introduced from Germany, was completed in Sichuan Province.

As for the LILW, the cementation is used in Qinshan and Daya Bay NPPs.

The bituminization is used for the LLLW treatment. Up to now, some LLLW has been solidified by using bituminization. The bituminized lumps (200L steel tanks) produced by solidification are now stored in repository.

R&D work on waste packing containers has been carried in China, which include steel barrel, steel and concrete cases. A series of standards have been established for these containers.

Disposal of radioactive wastes

A large amount of ILW is stored in the underground carbon steel tanks after evaporation, concentration and neutralization. Through research and demonstration for more than ten years, it was decided that by using hydraulic fracturing and large volume pouring, the medium-level concentrated waste was disposed of in Sichuan and Lanzhou separately.

According to the policy on LILW regional disposal, the national regional repositories have been constructed in the area where nuclear facilities are comparatively concentrated to dispose of local LILW. So far there are 2 repositories in China, the Northwest Repository and Guangdong Beilong Repository.

During the 1980's, China has engaged in the research on the HLW disposal, the planning on the HLW deep geological disposal has been formulated. The multidisciplinary studies involving geology, hydrogeology, etc. have been carried in the Beishan area in Gansu Province.

For application waste, there are some storage facilities all over country.

Reference

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