

Geological Disposal of High Level Radioactive Waste

The Atomic Energy Society of Japan (AESJ) firmly believes that it is an indispensable milestone for the peaceful use of atomic energy in Japan that all radioactive waste is disposed of adequately. Above all, high level radioactive waste (HLW) which contains the major portion of radioactivity is necessary to be disposed by means of geological disposal which provides long-term containment and isolation from human beings and the environment.

With regard to geological disposal of HLW, the implementer, Nuclear Waste Management Organization of Japan (NUMO) was established in 2000, and started open solicitation for candidate sites in 2002. However, it has not yet been confirmed that steady progress has been made by application for candidate sites. If geological disposal has not been initiated it would be probable that people's lives or industrial activities using electricity will be affected seriously by cessation of operation of the spent nuclear fuel reprocessing plant, and furthermore, through discontinuation of operations of nuclear power plants.

Accordingly, the AESJ, in order for prompt actions to be undertaken for the realization of geological disposal, supports and recommends the following:

1. Reinforcement measures¹ for the promotion of geological disposal are to be implemented in a systematic, effective, steady, and sustainable manner, based on each role of the government, NUMO and electricity utilities.

The interim report¹ of Radioactive Waste Subcommittee states as reinforcement measures;

- (1) Reinforcement approach to proceed the literature survey on candidate sites (expansion of PR to the general public, improvement of regional PR, and efforts by the central government, i.e. addition of proposal by the central government for implementation of literature survey by considering opinions of local communities, in addition to public solicitation.),
- (2) Presentation of ideas of regional development,
- (3) Promotion of R&D and international cooperation to contribute to the understanding of the people, and
- (4) Reinforcement of systems and functions by the central government, NUMO and electricity utilities.
(Unofficial translation)

2. Appropriate coalition among the government, NUMO and electricity utilities are to be undertaken for sufficiently taking into account new knowledge in the area of geological disposal, considering that the geological disposal project will make progress with a phased approach for decades to several hundreds of years, along with implementation of dialogues among stakeholders, safety review, monitoring,

etc. for periods of siting, construction, operation, closure, post-closure control, and abolition.

3. The Nuclear Safety Commission of Japan and the regulatory authority are to promptly develop safety guides and safety regulations because such development in Japan would be important for explanation of the safety of geological disposal to the public.
4. The stable operation of a vitrification facility for HLW is to be promptly established so that a stable production of quality assured vitrified waste will be feasible.
5. Universities and research institutes are to continue basic research step by step for the purpose of implementing disposal of radioactive waste safely, and to make a strong effort to foster young researchers since there is the necessity of possessing a certain scale of resources at any time for the sake of R&D for realizing geological disposal for the next hundred years.

The AESJ totally supports these actions from the viewpoint of being a neutral and impartial scientist group.

Reference

1. Interim Report of Radioactive Waste Subcommittee, Nuclear Energy Subcommittee, Advisory Committee for Natural Resources and Energy Electricity Industry Committee (1st Nov. 2007) (In Japanese)