

Development of Technical Guidelines and Work Procedure for Treatment and Disposal of Monazite Material Residues based on Field Test

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The treatment and disposal of NORM (Naturally Occurring Radioactive Material) have been a subject of concern among regulators, operators, workers and public at large. There was still a lack of harmonization of national approaches to the management of NORM residues. Also, a consistent guideline for treatment and disposal of NORM residues had still not fully achieved.

The procedure and guidelines for applying the treatment and disposal of large amounts of residues occurring in industry using NORM/TENORM, along with the act to protect against ionizing radiation from NORM residues for protection of public health and environment, are needed.

This objective of study is to develop the work procedure and technical guidelines related to the treatment and disposal for providing good information to worker in NORM/TENORM industries. In this work, we have been carried out the field test in accordance with treatment and disposal of residues occurring in industry using monazite material to develop the procedure and technical guidelines.

The scope of this study had been developed in detailed content as below.

1. The establishment of work plan for treatment and disposal of Monazite residues
2. The development of worker's safety management program to treatment and disposal of Monazite residues
3. The development of technical guideline and work procedure to treatment and disposal of Monazite residues
4. The development of technical guideline and work procedure to landfill the Monazite residues
5. The evaluation of cost-effective analysis to treatment and disposal of Monazite residues.

The work procedure and technical guideline developed in this study can be used to make the practical plan and design for treatment and disposal of NORM residues to worker in NORM industry. In addition, the findings can be used as a basic data for development of regulatory and re-developed as the procedure and technical guidelines for applicable treatment and disposal of other NORM residues. It is further confirmed that an industry-specific approach to the regulation of NORM was the correct approach.

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[1] International Atomic Energy Agency, Management of NORM Residues, IAEA-TECDOC-1712.

[2] Korea Institute of Nuclear Safety, (2016). Establishment of Technical Basis for Implementation on Safety Management for Radiation in the Natural Environment, KINS/ER-337.