

# Radioactive Waste Management Policy in Korea – Experiences, Challenges, and the Way Forward

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## 1. Introduction

The first national radioactive waste management (RWM) policy and strategy was established in 1984, and then the RWM policy and strategy have been revised several times until recently. Though some of the objectives in the RWM policy and strategy have been attained, many of them have not been successfully implemented due to oppositions from residents and misconducts in communication with interested parties. However, no specific studies on the advantages and disadvantages of the Korean government's past policy framework for RWM have been openly reported. Accordingly, fundamental principles for establishing the RWM policy and strategy are reviewed, the past experiences in Korea are analyzed, and then the desirable future direction of the RWM policy framework is proposed in this paper.

## 2. Principles of RWM Policy Framework

### 2.1 Policy and Strategy

RWM policy is a series of goals and/or requirements for safe management of radioactive waste (RW), which allocates clear roles and responsibilities [1]. The RWM policy is established by the government and is codified in the national legislative system in some countries.

On the other hand, RWM strategy is a set of measures to achieve the goals of the RWM policy and can be developed by the government, national RWM agency, or RW producers either in governmental or civil sectors.

Table 1 shows and compares the RWM policy and strategy for each country of interest.

Table 1. RWM Policy and/or Strategy in Selected Countries

Country	RWM Policy and Strategy
USA	· Nuclear Waste Policy Act of 1982
	· DOE, Strategy for the Management and Disposal of Used Nuclear Fuel, 2013.
Canada	· Low-Level Radioactive Waste Policy Amendments Act of 1985
	· Radioactive Waste Policy Framework (1996)
France	· National Plan for the Management of Radioactive Materials and Waste (PNGMDR)
Spain	· General Radioactive Waste Management Plan
Korea	· Basic Plan for RWM (LILW in 2015 and HLW in 2016)
	· Implementation Plan for RWM (LILW in 2017)

In a few countries such as France and Spain, the national plan for RWM involving a combined strategy and policy is established. In addition, the policy and strategy for RWM is codified in the national legislative system in USA.

### 2.2 Elements of RWM Policy

Main elements to be considered in establishing a RWM policy are reportedly known to be as follows [1]:

- Allocation of responsibilities of ministries, regulatory authority, operators of RWM facilities, etc.;
- Provisions of resources,
- Safety and security objectives;
- Minimization of RW
- Position on export and import of RW;
- Plan for spent fuel management (SFM);
- Plan for RWM (i.e. disused sealed sources and other types of RW);
- Naturally occurring radioactive material (NORM);

and

- Public information and engagement.

Regarding export and import of RW, for instance, Korea has been accepting the disused sealed sources exported to overseas if the importing country has an intention to return it back to the Korean manufacturer. However, returning back of the imported disused sealed sources to the exporting country to reduce the domestic inventory of RW is not a mandatory option in Korea yet.

### 3. Gap Analysis

The first RWM policy of Korean government was established as “RWM Measures” in 1984 after deliberation by the former Atomic Energy Commission. There have been a variety of revisions of the national policy and strategy for the last thirty-six years, and now the latest version of the policy and strategy for RWM are shown in Table 1.

Through gap analysis between the principles of RWM policy and the present framework for RWM policy and strategy in Korea, a few gaps were identified as:

- Unclear involvement of competent ministries in the official policy making process;
- Insufficient consideration of identification of RW streams to be potentially non-compliant to the waste acceptance criteria (WAC);
- Unclear plan to minimize national inventory of each type of RW; and
- Unclear process to inform and engage the Public in establishing, implementing, and assessing the performance of the LILW management policy.

### 4. Conclusion

The points identified in the gap analysis would be potential action items to be considered to enhance the effectiveness of the RWM policy and strategy in Korea as:

- Officially inviting competent ministries, interested organizations, and stakeholders in establishing and revising the RWM policy;

- Covering all types of RW streams in Korea and shed light on the potential compliance of those with WAC;
- Considering a position on obligatory returning of the disused sealed sources back to the overseas manufactures; and
- Communicating more with the public in establishing, implementing, and assessing the performance of the RWM policy.

### REFERENCES

- [1] IAEA, Policies and Strategies for Radioactive Waste Management, IAEA Nuclear Energy Series No. NW-G-1.1, 2009.
- [2] H.J. Kim, A Study on Establishment of Support Systems to AEC and AEC’s Expert Committee, KAERI/RR-2596/2004, 2005.