

# Investigation on Regulator's Role for Confidence Building of Stakeholders in Radioactive Waste Disposal

Kyongwon Han<sup>1\*</sup>, Jihyun Kim<sup>1</sup>, Sang Hoon Park<sup>1</sup>, Jinyong Park<sup>2</sup>, and Yohan Kim<sup>2</sup>

<sup>1</sup>RadWorks Corp., 530 Daeduckdae-ro, Yuseong-gu Daejeon, Korea

<sup>2</sup>KINS, 62 Gwahak-ro, Yuseong-gu, Daejeon, Korea

\*kwghan0101@gmail.com

## 1. Introduction

The disposal of radioactive waste is an important issue in Korea, where experience has been gained from the implementation of low and intermediate level radioactive waste disposal, while preparation is under way for high level radioactive waste disposal. Implementation of the disposal has to take account of not only the assurance of the safety in technical aspects but also the achievement of confidence from stakeholders [1, 2]. For the latter, the regulator in Korea has focused on regulation on the safety, while acted a limited role in the process of stakeholder involvement. However, there are views in the Korean nuclear community that an active regulator's role in the process of stakeholder involvement is necessary for the achievement of confidence from stakeholders, not to mention the operator's role of regulation [1, 2].

This paper presents the investigated information of regulator's role for the stakeholder involvement from international organizations and some countries advancing their disposal programs, which is followed by an identification of implications for the consideration of regulator's role in Korea.

## 2. Method and Results

### 2.1 Investigation on oversea status

An investigation has been conducted regarding regulator's role in the stakeholder involvement for radioactive waste disposal, in terms of recommendations from IAEA and NEA, and regulatory framework and involvement practices in Finland, Sweden and USA.

**2.1.1 IAEA and NEA.** Stakeholder is defined as those who have a specific interest in a given issue or decision, and can be classified into two types, i.e.

internal and external [1]. Participation by stakeholders in decision making processes are recommended to allow a stakeholder to be informed and to be involved in decisions that affect his or her well-being, and to have stakeholders' reasonable issues and concerns are factored into decisions. Stakeholder involvement makes regulatory organizations and other authorities acutely aware that their actions are under public scrutiny. Regulator's role has been changed from a limited involvement until the beginning of licensing process to an active involvement already in pre-licensing stage. Accordingly an early involvement of regulators in the decision making process from the stage of establishing a safety case concept and a siting plan, and in early consultations with local communities as "safety communicators" and "peoples' experts" are recommended [1, 2]. NEA Forum on Stakeholders Confidence (FSC) found that there was a leap in a decade (2003-2010) from tokenism to real participation in the approach of public involvement [3].

**2.1.2 Finland.** The Finnish Nuclear Energy Act requires regulator to establish regulations and involve in the radioactive waste management from the pre-licensing stage. Actually, the Finnish regulator, STUK, reviewed drafts of safety case and R&D programs of the repository operator, Posiva, through close bilateral communications. In parallel, STUK carried out a program for co-operation and direct communication with the public media, local public and their representatives through oral and written materials, seminars, discussion meetings, and etc. STUK made clear to the public its role as an entity independent of Posiva, with the duty to look after the health and safety of citizens. Thus, STUK made a success story of being "peoples' experts" [4].

**2.1.3 Sweden.** The Swedish decision-making process

must be open, transparent, fair and participatory. The programs have also become more communicative by requirements of Environmental Impact Assessment at project level and Strategic Environmental Assessment at the planning and program implementation levels. The Swedish regulatory authority (SSM) communicates with the public including the involved municipalities through dialogue, participation in public hearing, etc. The former regulator (Swedish Nuclear Power Inspectorate (SKI) and the Swedish Radiation Protection Authority (SSI)) applied RISCUM model to the design and evaluation of a public hearing on the repository operator's (SKB) choice of municipalities for the program to build a spent nuclear fuel repository. The RISCUM model for transparency includes three basic elements: technical/scientific issues, normative issues and authenticity [5].

**2.1.4 USA.** Regulation in USA requires the regulator, NRC, to involve in the pre-licensing process and communicate with any affected Indian Tribe for the disposal of high level radioactive waste. In practice, NRC communicated closely with the repository operator, DOE, regarding site characterization and preparation of Environmental Impact Statement report on Yucca Mountain repository through reviews and dialogues on key technical issues. NRC also developed licensing criteria, 10CFR63, by having consensus with the public comments from public meetings. Meanwhile, NRC established strategy for the improvement of its system of communication with stakeholders and the use of communication tools [6].

## 2.2 Implications

Implications from the investigation can be drawn as follows:

- Internationally, gaining public confidence through stakeholder involvement in radioactive waste disposal is becoming more important than in the past when decisions were made by public information and consultation approach. At the same time, an active role of regulators in the stakeholder involvement is necessitated to build confidence of stakeholders.
- Regulator's role in the stakeholder involvement can be summarized as, a) establishment of required regulations and enforcement, b) stepwise interaction with the repository operator, and c) communication with other stakeholders (see Fig. 1).

- Regulators are establishing risk communication process and tools including models for their roles.

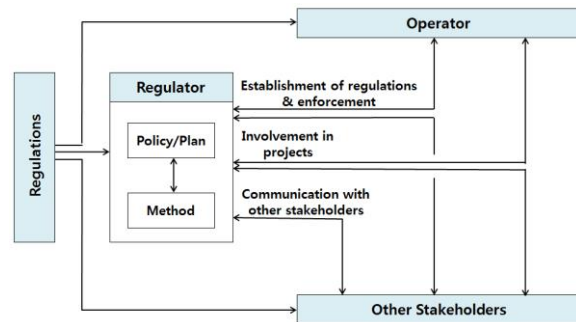


Fig. 1. The framework of regulator's role for stakeholder involvement.

## 3. Conclusions

The investigation has shown that an active role of regulator in stakeholder involvement activities is becoming important internationally for building confidence in the implementation of radioactive waste disposal. Accordingly, it is considered desirable for the Korean policy and/or regulations to mandate regulator's role in the stakeholder involvement in particular for the forthcoming disposal of high level radioactive waste. For this, the regulator may develop its own risk communication system including approaches, models and tools, making use of the information from this study.

## REFERENCES

- [1] IAEA, Stakeholder Involvement in Nuclear Issues, INSAG-20, Vienna, 2006.
- [2] NEA, The Evolving Role and Image of the Regulator in Radioactive Waste Management: Trends over Two Decades, 2012.
- [3] NEA, From Information and Consultation to Citizen Influence and Power, FSC Flyer, 2010.
- [4] T. Varjoranta, The Regulator's Relationship with the Public and the Media: Satisfying Expectations; OECD, Stepwise Decision Making in Finland for the Disposal of Spent Nuclear Fuel Workshop Proceedings, Turku, Finland, 2001.
- [5] SKI, Design and Evaluation of Public Hearings for Swedish Site Selection, SKI Report 2003:32 August 2003.
- [6] US NRC, Report of the Public Communications Task Force, 2003.