

Review of Atomic Energy Laws Related to Radiological Accidents and Methods of Improvement

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1. Introduction

Atomic energy-related laws in Korea have a two-pronged management system for radiological accidents. To be specific, the Atomic Energy Act is applicable to all radiological accidents, i.e. accidents pertaining to nuclear facilities and radioactive materials while the Act for Physical Protection and Radiological Emergency (“APPRE”) applies to accidents related to nuclear materials and large-scale nuclear facilities.

The Atomic Energy Act contains three provisions directly related with radiological accidents (Articles 89, 98 and 102). Article 89 provides for the obligations of nuclear licensees or consigned transporters to institute safety measures and file a report to the head of the Ministry of Education, Science and Technology (“MEST”) in the event of any radiological accident during transport or packing of radioactive materials, etc. Article 98 stipulates obligations of nuclear licensees to implement safety procedures and submit a report to the Minister of Education, Science and Technology concerning radiation hazards arising in the event a radiological accident occurs in connection with nuclear projects, as well as the Minister’s requests to implement necessary measures. Article 102 explicitly provides for obligations to file a report to the Minister in the event of theft, loss, fire or other accidents involving radioactive materials, etc. in the possession of nuclear licensees.

The APPRE classifies radiological accidents according to location and scale of the accidents. Based on location, accidents are divided into accidents inside or outside nuclear facilities. Accidents inside nuclear facilities refer to accidents that occur at nuclear reactors, nuclear fuel cycling facilities, radioactive waste storage, treatment and disposal facilities, facilities using nuclear materials and facilities related to radioisotopes of not lower than 18.5PBq (Subparagraph 2, Article 2 of the APPRE) while accidents outside nuclear facilities mean accidents that take place on vehicles or vessels transporting radioactive materials or at other places where radioactive materials are detected, other than at nuclear facilities (Article 22 of the APPRE). Based on the scale of accidents, radiological accidents are categorized into radiological emergencies and radiological disasters. A “radiological emergency” indicates a situation that requires an urgent response due to actual or threatened leakage of radioactive materials or radiation (Subparagraph 7, Article 2 of the

APPRE). A “radiological disaster” refers to a disaster that requires a national response because a radiological emergency has escalated into a situation that can claim people’s lives and harm their property as well as the environment (Subparagraph 8, Article 2 of the APPRE). Most provisions in the APPRE concern accidents inside nuclear facilities and radiological disasters. Only Article 22 thereof provides for accidents outside nuclear facilities, expressly stipulating the obligation of the public to file a report to the Minister of Education, Science and Technology, etc.

2. Problems within Laws in Effect Related with Radiological Accidents

2.1. Problems with the Atomic Energy Act

Under the Act, nuclear licensees should play a central role in taking measures against radiological accidents pertaining to nuclear projects. It does not contain explicit provisions on what measures are required to be directly implemented by the Minister of Education, Science and Technology, i.e. the regulator, regarding those accidents. Furthermore, the Act does not contain any provisions on measures to be taken with respect to radioactive materials that are stolen or remain idle with their owners unknown.

2.2. Problems with the APPRE

There is a lack of an effective support system regarding protection against hazards in the event of a radiological emergency out of radiological accidents. With regard to accidents that occur at nuclear facilities, only nuclear licensees are held accountable for taking specific measures as in the case of the Atomic Energy Act (Article 21 of the APPRE). In addition, the Act does not contain any provisions related to execution of measures in the event of any accident outside nuclear facilities that does not fall under a radiological disaster.

2.3. Double Regulation by the Atomic Energy Act and APPRE

The Atomic Energy Act and APPRE have duplicate provisions regarding the implementation of actions and filing of reports concerning radiological accidents. Such double regulation may trigger confusion and administrative waste of resources (Article 98 of the Atomic Energy Act and Articles 21 and 24 of the APPRE).

3. Responsibility of the State to Take Measures Against Radiological Accidents

3.1. State Responsibilities for Radiological Accidents under Article 35(1) of the Constitution

A ruling by the Supreme Court that the state has an obligation to protect the existing natural environment in the process of formulating and executing various development and construction plans for the purpose of guaranteeing that people living in such environment may lead a healthy and pleasant life and to take proactive measures to pass down a livable environment to our descendants because Article 35(1) of the Constitution provides that “all citizens shall have the right to a healthy and agreeable environment. The state and all citizens shall endeavor to protect the environment” explicitly acknowledging environmental rights as basic constitutional rights and imposing the obligation on the state and people to make an effort to preserve the environment (decision No. 2004 ma 1148, 1149 dated June 2, 2006) recognizes the state’s responsibility for environmental preservation. Since a radiological accident causes environmental pollution, the responsibility for preventing such pollution must be ultimately assumed by the state.

3.2. Declaration of the State’s Responsibility in the Framework Act on Environmental Policy

The Framework Act on Environmental Policy does not have any concrete provisions on the state’s responsibility for radiological accidents. However, the Act declares the state’s obligation to preserve the environment, which embodies the provision of Article 35(1) of the Constitution.

Article 1, Article 4 and Article 7-2 of said Act stipulate that the state is accountable for preventing environmental pollution and preserving the environment. Article 21-2 of the Act prescribes that the “government shall provide for appropriate actions with respect to environmental pollution by radioactive materials and prevention thereof in atomic energy-related laws.” Given this situation, said Act is deemed to explicitly provide for responsibilities of the state (MEST) for radiological accidents.

3.3. . Based on Article 35(1) of the Constitution and the Framework Act on Environmental Policy that specifically provides for the state’s responsibility for environmental preservation in accordance therewith, while nuclear licensees are the primary party responsible for radiological accidents related with nuclear projects, in the case where nuclear licensees fail to take necessary measures or where it is impossible to wait until those licensees implement actions due to urgency, the state (MEST) should execute measures and the state (MEST) must also take prompt actions with respect to radioactive materials that are stolen or remain idle with their owners unknown

4. Approaches for Improvement

4.1. Explicitly Stipulating the Rationale for MEST Actions Concerning Radiological Accidents Caused by Nuclear Licensees

o Provision of rationale for immediate compulsory actions in the event of an emergency in Article 98(2) of the Atomic Energy Act

<Proposed revision to Article 98 (2)>

- Article 98 (Hazard Defense Actions and Report Thereof)

(2) Upon receipt of a report under Paragraph (1), the Minister of Education, Science and Technology shall order the corresponding nuclear licensee to discontinue the use of the nuclear facilities ... or otherwise take measures necessary to prevent radiation hazards, or shall take prompt necessary actions if time needed to issue such an order is not available.

4.2. Providing for Comprehensive Rationale for Measures Regarding Thefts, etc. and Ownerless Materials under Article 102 of the Atomic Energy Act

A provision stipulating prompt compulsory actions should be newly inserted in the Atomic Energy Act:

<Proposed new Article 100-2>

- Article 100-2 Prompt Compulsory Actions

The Minister of Education, Science and Technology may take necessary actions, at his or her reasonable discretion, including elimination of contaminants and isolation of contaminated areas in case it is urgently needed to protect local people or environment from radiological mishaps and said actions are deemed unavoidable to prevent damage that may be caused thereby.

4.3. Redressing Double Regulations Concerning Radiological Accidents

From a long-term perspective, it would be reasonable that the Atomic Energy Act takes full charge of nuclear safety control including issuance of permits while the APPRE oversees any and all matters pertaining to radiological accidents including radiological emergencies.

In such case, legal requirements which have made it difficult to subject small-scale nuclear licensees to the APPRE may be resolved through stipulating exceptions in APPRE. In other words, it is imperative to establish provisions that the state responds to a radiological accident in a timely fashion for small-sized nuclear licensees, while they are exempt from securing an organization, personnel and equipment to prepare for a radiological accident .