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Abstract

Ⅰ. Background and Purpose

□ The Atomic Energy Act was enacted in March 1958, and the Atomic Energy Institute was officially launched in January 1959, thereby setting up a system for the use and development of nuclear power

□ Also, in March 1959, the Atomic Energy Research Institute was founded for to carry out research and development (R&D) projects on nuclear power

□ In 1962, the institute began operating TRIGA Mark-II, the first nuclear reactor set up for research purposes in Korea, and officially initiated basic research on nuclear power and research on isotope production. The development of nuclear energy in Korea continued well into the presidency of Park Chung-hee

□ The construction of Kori Nuclear Plant No. 1, the first commercial nuclear plant in Korea, began in Jangan-eup, Gijang-gun in Busan on March 9, 1971, and was completed in 1978. During its construction, approval was acquired to build five new nuclear power plants (NPPs)

□ This opened the era of nuclear energy, and the past governments (former presidents Chun Doo-hwan, Roh Tae-woo, Kim Young-sam, Kim Dae-jung, Roh Moo-hyun, and Lee Myung-back and current President Park Geun-hye) have continually built new nuclear power plants in the country

□ However, IAEA, an international organization specializing in atomic energy, has stressed the importance of ensuring independence of the regulations on the safety of using nuclear power. Also, following the Fukushima Daiichi nuclear disaster in March 2011, the government of the Republic of Korea began voicing concerns regarding the safety of nuclear power plants

□ As a result, there has been growing emphasis on the need to perform a general review of the current nuclear power plant policy and to make efforts to reinforce the safety of nuclear power plants. Accordingly, ways to effectively separate the nuclear safety regulations and promotion regulations were discussed, which resulted in the Atomic Energy Act becoming divided into the Nuclear Safety Act and the Nuclear Energy Promotion Act. In addition, the Act on the Establishment and Operation of the Nuclear Safety and Security Commission was enacted to operate the Nuclear Safety and Security Commission as an independent department. Aside from these efforts, the Nuclear Damage Compensation Act dealing with nuclear safety

was amended, and the Act on Protective Action Guidelines Against Radiation in the Natural Environment and the Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters were established. Furthermore, for the purpose of managing radioactive wastes, the Radioactive Waste Management Act and the Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste were enacted

□ Thus, this study was conducted with the aim of examining the ways to lay the foundation necessary for sharing Korea's experience in developing nuclear legislations with developing countries and transition countries

Ⅱ. Contents

□ Nuclear Energy Development in the Republic of Korea

○ The first pressurized water reactor of the Kori Nuclear Power Plant began its commercial operation in Jangan-eup, Gijang-gun, Busan on April 29, 1978, and more nuclear power plants and reactors have been built for operation ever since.

○ For instance, Kori-2 (1983), Kori-3 (1985), and Kori-4 (1986) as well as Hanul-1 (1988), Hanul-2 (1989), Hanul-3 (1998), and Hanul-4 (1999) in Uljin, Gyeongsangbuk-do Province. Also, Hanul-5 (2004) and Hanul-6 (2005), which are Korean standard nuclear reactors,

were built in the same region, In Wolseong, Gyeongsangbuk-do Province, Wolsong-1 (1983), Wolsong-2 (1997), Wolsong-3 (1998), and Wolsong-4 (1999), which are CANada Deuterium Uranium (CANDU) reactors, were established. On the other hand, Hanbit-1 (1986), Hanbit-2 (1987), Hanbit-3 (1995), and Hanbit-4 (1996) were built in Yeonggwang, Jeollanam-do Province, and Hanbit-5 (2002) an Hanbit-6 (2002), which are Korean standard nuclear reactors, were built in the same region. In addition, Shin Kori-1 (2011), Shin Kori-2 (2012), Shin Wolsong-1 (2012), and Shin Wolsong-2 (2013) were also established. Thus, there are a total of 24 reactors currently in operation in Korea

□ The Development of Nuclear Legislations in Korea

○ The analysis on the development of nuclear legislations, such as the main contents of the 「Nuclear Energy Promotion Act」, of the 「Nuclear Safety Act」, and of the 「Act on the Establishment and Operation of the Nuclear Safety and Security Commission」, has been conducted.

○ The 「Nuclear Energy Promotion Act」 provides for matters related to the research, development, production and use of nuclear energy, and to the promotion of nuclear energy business.

○ Of particular note, the key matters set forth in the 「Nuclear Energy Promotion Act」 include the establishment of the Nuclear Energy Promotion Commission, formulation and implementation of comprehensive plans for the promotion of nuclear energy, research and development of nuclear energy, and a nuclear energy fund to

secure financial resources for nuclear energy research and development.

○ The 「Nuclear Safety Act」 sets forth the matters related to the safety regulations for nuclear power plants, radioactive waste management facilities, and transport of radioactive (waste) materials. To be more specific, the safety provisions are in regard to the prior approval of construction site and limited works, construction and operation permits for nuclear power plants, standard design approval, inspections, periodic safety reviews, permit for construction and operation (integrated permit) of radioactive waste management facilities, etc., pre-service inspection, regular inspections, quality assurance inspections, reporting of transport, approval of packaging and transportation containers, transportation inspections and container inspections, etc.

○ Of particular note, compared to the brief provisions on decommissioning in the past, the present 「Nuclear Safety Act」, which was amended on January 20, 2015, provides for detailed and progressive provisions through delegation provisions. As a result, an improvement was made to establish a safety management system for the entire life cycle of nuclear power plants from construction to operation, decommissioning and closure

□ The Development of Legislations on Radioactive Waste Management

○ The government formulated a radioactive waste disposal facility plan in 1984 to establish disposal facilities for LLW, ILW and HLW at the same site for a final disposal of spent nuclear fuel

○ However, a site for such facility could not be secured due to the strong opposition from by the local residents of Gureop in 1995 and Buan in 2003

○ Then, the enactment of the 「Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste」 in 2007 allowed the selection of inducement areas for the establishment of disposal facilities through a bidding with the participation of the local government agencies and provided for assistance measures for the selected inducement areas. as a result, on November 9, 2007, a 2,100,000m^2 disposal site with a capacity to handle 800,000 drums of LLW and ILW was secured in Bonggil-ri, Yangbuk-myeon, Gyeongju-si

○ However, on March 11, 2011, a massive earthquake on the sea bottom 179km east of Sendai and the resulting tsunami led to the Daiichi nuclear power plant in Fukushima, Japan to leak large amounts of radioactive materials

○ As a result, ensuring safety in relation to the management of spent nuclear fuel stored on the sites of 24 nuclear power plants in operation in Korea became a policy issue.

○ Accordingly, the government of the Republic of Korea launched the Public Engagement Commission on Spent Nuclear Fuel Management in October 2013 to collect public opinions regarding the management measures for spent nuclear fuel. After a 20-month period of activity until June 2015, the Commission prepared the Recommended Guidelines for Spent Nuclear Fuel Management.

○ Thus, the government confirmed the establishment of a master plan for spent nuclear fuel management, based on the Recommended Guidelines for Spent Nuclear Fuel Management, and is currently in the middle of amending the “Special Act on the Management Procedure for High Level Radioactive Waste (Tentative title)” in order to seamlessly execute the policy for spent nuclear fuel management, as they had done in securing a site for the establishment of a facility for the disposal of LLW and ILW.

□ The Development of Legislation on the Protection of Nuclear Facilities and Prevention of Radiation Disasters

○ Of particular note, the key matters stipulated in the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 of the Republic of Korea include the physical protection of nuclear materials and facilities (Article 3), physical protection council for nuclear facilities and regional protection councils (articles 5 and 7), responsibilities of nuclear business operators for physical protection (Article 9), education on physical protection (Article 9-2), inspection and correction order on physical protection of nuclear facilities, etc. (Article 12), national and regional radiation disaster prevention plans (Article 18), radiation emergency plans and duties of nuclear business operators (Article 20), urgent measures for radioactivity accidents and declaration of radiation disasters (Article 22), establishment of the Central Radioactive Disaster Prevention and Response Headquarters and Regional Radioactive Disaster Prevention and Response Headquarters (articles 25 and 27), inspections of and correction

orders for nuclear business operators, reporting and inspections (articles 38 and 44), penal provisions (Article 47), and more, which provide for physical protection of nuclear facilities, etc. and the disaster prevention measures in the event of an accident

○ Accordingly, in relation to the legislation on the physical protection and radioactive disaster prevention of nuclear facilities and environmental radiation in the Republic of Korea, the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 is characterized by the fact that it provides for follow-up measures in relation to disaster prevention plans in the event accidents and for the establishment of a physical protection system in link with the design and construction stages in order to guarantee safety and security of nuclear facilities amidst the growing internal and external threats

○ Meanwhile, the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 was enacted to set forth matters related to the safety control of radiation that people can be exposed to in their living spheres, thereby protecting public health and the environment and improving the quality of life

○ Accordingly, the key matters prescribed in the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 include the formulation of comprehensive plans for protection from environmental radiation, etc. (articles 5, 6, 7), registration of persons responsible for handling source materials, by-products from processing or processed products (Article 9), control of export and import of

source materials or by-products from processing (Article 11), treatment, handling and recycling of by-products from processing (Article 13), matters to be observed in handling and managing source materials or by-products from processing and safety standards for processed products (Article 14), measures against non-conforming processed products and vicarious execution (Article 16), detection and analysis of suspected substances (Article 21), measures against suspected substances (Article 22), survey and analysis of actual conditions of safety control and environmental radiation (Article 23), management, etc. of information about environmental radiation (Article 25), designation and operation, etc. of institutions specializing in environmental radiation (Article 27), etc

□ The Development of the Nuclear Damage Compensation Act

○ There is a need to prepare a post-nuclear disaster compensation system in preparation of a potential nuclear disaster in the Republic of Korea

○ Accordingly, in order to protect victims and promote sound development of the nuclear energy businesses, the 「Nuclear Damage Compensation Act」 was enacted to set forth the matters pertaining to compensations for nuclear damages resulting from the operation of nuclear reactors

○ The key matters set forth in the 「Nuclear Damage Compensation Act」 of the Republic of Korea include strict liability and channelling

of liabilities (Article 3), limitation of liabilities (Article 3-2), right to indemnity (Article 4), duty to take measures for compensation (Article 5), amount of compensation (Article 6), liability insurance policy for nuclear damage compensation (Article 7), priority of claims for damage (Article 8), indemnity agreements for nuclear damage compensation (Article 9), priority of claims for compensation (Article 10), extinctive prescription (Article 13-2), measures of government (Article 14), Nuclear Damage Deliberation Committee (Article 15), reporting and inspection (Article 16), penal provisions (Article 19), fines for negligence (Article 20) and reporting to the National Assembly (Article 22).

○ Thus, the 「Nuclear Damage Compensation Act」 of the Republic of Korea needs to continually increase the limitation of liabilities for nuclear business operators, as is the case in the countries that are considered nuclear powerhouses, and there is a need to improve the provision on unlimited liability from the current provision of "in principle-limited liability" and "exclusion principle-unlimited liability." As for the government aid, it is deemed necessary to specify the scope and details of the aid in the Enforcement Decree

○ In addition, there is a need for a provision on administrative punishment and fines that are fair and reasonable and are recognized as a punishment that corresponds to the weight of the violation committed

Ⅲ. Expected Effects

□ This study was conducted with the aim of providing systemically Korea's experience of nuclear legislations for transition countries and developing countries under the circumstance of insufficient introduction of Korea's experience of development of nuclear legislations in English

Key Words : Nuclear Energy Promotion Act, Nuclear Safety Act, Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste, Special Act on the Management Procedure for High Level Radioactive Waste (Tentative title), Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters, The Development of the Nuclear Damage Compensation Act

Contents

Chapter 1 Introduction

The nuclear history of the Republic of Korea began during the Korean War, which broke out on June 25, 1950 with the North Korean forces invading into the south and suspended with an armistice as of July 27, 1953. Rhee Syngman, the first President of the Republic of Korea, who had acquired a Ph.D. degree at Princeton University in the USA, was knowledgeable in atomic energy, and sent three scientists to America during the said war to learn about nuclear power. Following Korea's participation in the Conference on the Peaceful Uses of Atomic Energy in Geneva on August 8, 1955, research on nuclear energy was initiated in full swing. After concluding a defense treaty, South Korea and the US officially signed a nuclear agreement for peaceful use of nuclear power in February 1956. On March 9 in the same year, the Nuclear Division was established under the Ministry of Education. Then, in 1957, the International Atomic Energy Agency (IAEA) was launched. Korea signed the IAEA Charter on August 8 that year, and joined the organization as a member state.

The Atomic Energy Act was enacted in March 1958, and the Atomic Energy Institute was officially launched in January 1959, thereby setting up a system for the use and development of nuclear power. Also, in March 1959, the Atomic Energy Research Institute was founded for to carry out research and development (R&D) projects on nuclear power. In 1962, the institute began operating TRIGA Mark-II, the first nuclear reactor set up for research purposes in Korea, and officially initiated basic research on nuclear power and research on isotope production. The

development of nuclear energy in Korea continued well into the presidency of Park Chung-hee. The construction of Kori Nuclear Plant No. 1, the first commercial nuclear plant in Korea, began in Jangan-eup, Gijang-gun in Busan on March 9, 1971, and was completed in 1978. During its construction, approval was acquired to build five new nuclear power plants (NPPs). This opened the era of nuclear energy, and the past governments (former presidents Chun Doo-hwan, Roh Tae-woo, Kim Young-sam, Kim Dae-jung, Roh Moo-hyun, and Lee Myung-back and current President Park Geun-hye) have continually built new nuclear power plants in the country.

As of 2016, there are 24 nuclear reactors operating at the Kori Nuclear Power Plant, Hanbit Nuclear Power Plant (Yeonggwang), Wolsong Nuclear Power Plant, and Hanul Nuclear Power Plant (Uljin). There are a total of 9 nuclear power plants that are in the middle of construction or for which approval for construction is being obtained. Nuclear power plants are the responsibility of the Korea Hydro & Nuclear Power (KHNP)[1], in accordance with the restructuring of the electric power industry in 2001. Of particular note, Korea exported power plant facilities to the United Arab Emirates (UAE) on December 27, 2009, and this feat was achieved through an international competitive bidding in which Japan and France, considered nuclear safety powerhouses, participated. As a result, Korea gained global recognition for its excellent nuclear technology, and it also laid the foundation for Korea to grow into a global leader in nuclear power.

1) The nuclear power plants (NPPs) of KHNP generate 20.7GW, and are in continuous operation under the base load unit to supply more than 45% of the total power consumed. The rate of operation of the NPPs in Korea is 93.4%, which is higher than that of the USA (89.9%) and France (76.1%).

However, IAEA, an international organization specializing in atomic energy, has stressed the importance of ensuring independence of the regulations on the safety of using nuclear power. Also, following the Fukushima Daiichi nuclear disaster in March 2011, the government of the Republic of Korea began voicing concerns regarding the safety of nuclear power plants. As a result, there has been growing emphasis on the need to perform a general review of the current nuclear power plant policy and to make efforts to reinforce the safety of nuclear power plants. Accordingly, ways to effectively separate the nuclear safety regulations and promotion regulations were discussed, which resulted in the Atomic Energy Act becoming divided into the Nuclear Safety Act and the Nuclear Energy Promotion Act. In addition, the Act on the Establishment and Operation of the Nuclear Safety and Security Commission was enacted to operate the Nuclear Safety and Security Commission as an independent department. Aside from these efforts, the Nuclear Damage Compensation Act dealing with nuclear safety was amended, and the Act on Protective Action Guidelines Against Radiation in the Natural Environment and the Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters were established. Furthermore, for the purpose of managing radioactive wastes, the Radioactive Waste Management Act and the Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste were enacted.

Amidst the current trend of globalization, countries are engaging in active interchanges in relation to the import and export of nuclear power. However, there is currently no systematic introduction in English on

Korea's experience in developing the legislations regarding nuclear power, and under these circumstances, attention is being turned to the need to systematically share such experience with developing countries and transition countries.

Thus, this study was conducted with the aim of examining the ways to lay the foundation necessary for sharing Korea's experience in developing nuclear legislations with developing countries and transition countries.

Chapter 2 Nuclear Energy Development in the Republic of Korea

With the devastating consequences of war still present in Korea, the Atomic Energy Act was enacted in 1958 to ensure a stable supply of energy in the country, and this promoted the advancement of nuclear power in Korea. Afterwards in the 1960s, the 5-year Economic Development Plan proposed by the then-President Park Chung-hee produced effective results, which in turn led to a surge in demand for electric power, and the oil crisis in the 1970s increased the need for energy security. Accordingly, construction projects were initiated in full swing to build nuclear power plants.

A stable supply of electric energy was deemed essential in ensuring continuous economic growth and improving the quality of life for the citizens. Thus, the first pressurized water reactor[2] of the Kori Nuclear Power Plant began its commercial operation in Jangan-eup, Gijang-gun, Busan on April 29, 1978, and more nuclear power plants and reactors

2) Kori-1 is a pressurized water reactor (PWR) with electricity generation capacity of 587MW. Westinghouse, a US-based nuclear power company, was in charge of construction of the facilities, and supplying the nuclear reactor systems and initial fuel, while the UK-based GEC was responsible for supplying the turbine and generator systems and the civil engineering work. The nuclear reactor and steam generator are within the containment, comprised of the primary system (incl. radioactive materials) circulating the reactor, the secondary system (water that does not contain any radioactive materials) circulating the steam generator, and the tertiary system (seawater that does not contain any radioactive materials). Pressure is applied on the coolant inside the reactor to maintain it at 150atm and 300℃. As the coolant passes through the steam generator tubes, the water in the steam generator is boiled to generate steam and to rotate the turbine. Afterwards, the steam passes through the condenser and becomes liquid again, after which it is sent to the steam generator. For this reason, PWR is costlier to operate compared to fossil fuel power plants.

have been built for operation ever since. For instance, Kori-2 (1983), Kori-3 (1985), and Kori-4 (1986) as well as Hanul-1 (1988)[3], Hanul-2 (1989), Hanul-3 (1998), and Hanul-4 (1999) in Uljin, Gyeongsangbuk-do Province. Also, Hanul-5 (2004) and Hanul-6 (2005), which are Korean standard nuclear reactors, were built in the same region. In Wolseong, Gyeongsangbuk-do Province, Wolsong-1 (1983), Wolsong-2 (1997), Wolsong-3 (1998), and Wolsong-4 (1999), which are CANada Deuterium Uranium (CANDU)[4] reactors, were established. On the other hand, Hanbit-1 (1986), Hanbit-2 (1987), Hanbit-3 (1995), and Hanbit-4 (1996) were built in Yeonggwang, Jeollanam-do Province, and Hanbit-5 (2002) an Hanbit-6 (2002), which are Korean standard nuclear reactors, were built in the same region. In addition, Shin Kori-1 (2011), Shin Kori-2 (2012), Shin Wolsong-1 (2012), and Shin Wolsong-2 (2013) were also established. Thus, there are a total of 24 reactors currently in operation in Korea.[5]

There are plans to build Shin Kori-3 and Shin Kori-4, which are new Korean-style nuclear reactors (APR-1400) developed using propriety engineering technology of Korea, in Ulsan in Gyeongsangnam-do Province in April 2016 and 2017, respectively. The construction of Shin Kori-5 and Shin Kori-6 is presently being reviewed for approval with the target erection date scheduled for 2021 and 2022, respectively. Also, Shin Hanul-1 and Shin Hanul-2 are under construction in Uljin in Gyeongsangbuk-do.

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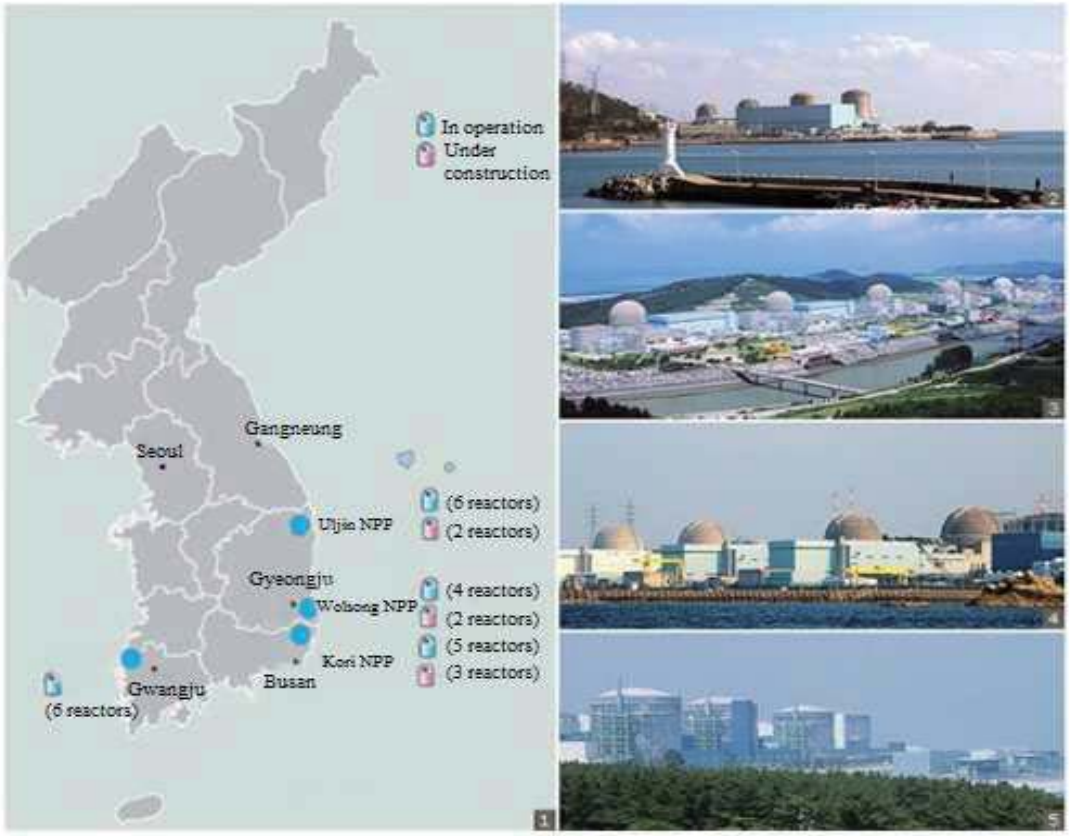
3) Hanul-1 in Uljin, Gyeongsangbuk-do was constructed as a PWR by Framatome (France) in 1988.

4) CANDU developed in Canada uses natural uranium (U235) as fuel and deuterium oxide (heavy water) as moderator and coolant. In order to enhance the chance of nuclear fission using natural uranium fuel, heavy water (water with higher molecular weight compared to regular water) is used so as to better decelerate the neutrons than light water. Usually, a fixed quantity is replaced without suspension of operation, and thus the fuel utilization rate is higher compared to light-water reactors.

5) http://www.kaif.or.kr/?c=dat&s=6 (Last visited on 2016.4.28)

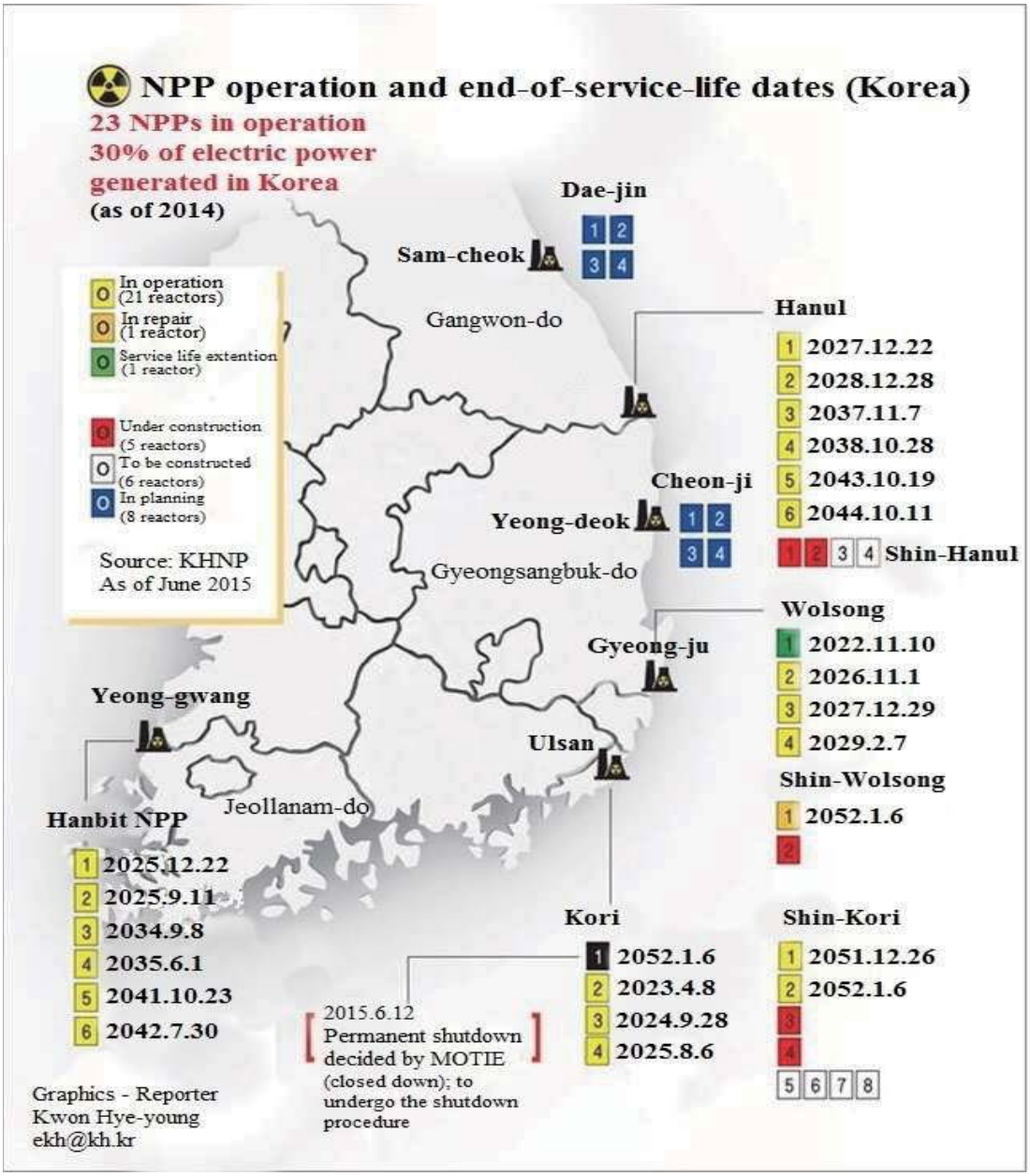
<Locations of NPPs in Korea>[6)]



The government of the Republic of Korea is searching for a site to build two APR-1400 reactors with 1,500MW capacity in Yeongdeok, Gyeongsangbuk-do Province. The ratio of nuclear power plant operation to overall power plant operation in Korea is currently 30%, which is higher than that of the US (19%).

6) http://navercast.naver.com/contents.nhn?rid=20&contents_id=5031&leafId= (Last visited on 2016. 4.28)

<NPP operation and end-of-service-life dates (Korea)>[7)]



In 2008, the Lee Myung-bak administration formulated a plan to increase the ratio of nuclear power plant operation to the overall power

7) http://www.ekn.kr/news/article.html?no=140897

plant operation to 41% by 2030 in consideration of the cost effectiveness of nuclear power plants and the greenhouse gas emissions reduction effect. After winning the bid to build a nuclear power plant in UAE in January 2009, nuclear power came to be considered an economic growth engine for Korea and viewed as an eco-friendly energy source.

However, in March 2011, the Fukushima Daiichi nuclear disaster raised concerns in regard to the safety of nuclear power plants and other issues concerning public acceptance, and this caused difficulties in pursuing the nuclear power plant construction plans. The Park Geun-hye administration made a downward adjustment of the 2035 nuclear power plant target to 29% in the 2nd National Energy Master Plan, and made a policy transition to center on demand management for dispersed type power sources in relation to the large-scale tracking-type power generation facilities in response to the growing anxiety regarding the safety of power plants in 2013.

Despite this, however, Korea neither can obtain energy as easily as countries in Europe, for instance, nor does it have natural resources. Thus, nuclear power generation cannot be excluded from the energy mix, and there is no choice but to maintain it at a certain level. Also, to meet 29% of the nuclear power plant ratio, there is a need to build five more reactors in addition to the nuclear power plants under construction and for which construction plans have been made for until 2029 as well as the existing ones. As such, there is a need to operate more nuclear power plants in addition to the current plants in operation until 2035 in order to meet the target of 29%.

Korea imported the necessary technology from the US-based Westinghouse for the construction of Kori-1, a PWR, to begin operation on April 29,

1978. Since then, Korea has developed scientific technology with the aim of becoming self-reliant when it comes to NPP technology, and as a result, a PWR-type Korean standard nuclear reactor has been developed with success. In addition, Korea has gained competitiveness on the international stage, based on world-class NPP operating records and abundant NPP construction know-how. Even in terms of NPP operating capacity, it has recorded 93%, which is considerably higher than the world average of 73%. For this reason, nuclear power generation has been projected to be a promising export industry that will power future economic growth, as Korea has secured the technologies for the entire life cycle of nuclear power plants from engineering, system production, plant construction as well as nuclear fuel procurement and plant operation, maintenance and repair to the decommissioning of the facility, on top of localizing the main system components and equipment.

Chapter 3 The Development of Nuclear Legislations in Korea

Section 1 Transformation of Nuclear Legislations

1. 「Atomic Energy Act」 enacted as Act No. 483 on March 11, 1958

The intent of legislating the 「Atomic Energy Act」, enacted as Act No. 483 on March 11, 1958, was to set forth the basic matters in relation to the research, development, use and management of nuclear power, and to promote academic progress and the related industry, thereby contributing to the improvement of the quality of life for citizens and welfare of human society. First, in order to administer the matters related to the research, development, use and management of nuclear power, a "nuclear energy institute" was established under the President and a nuclear energy commission, an administration office, and a nuclear energy research institute were to be established within the institute (Article 3 of the Act). Second, the employees and public servants of nuclear power development and production institutions were not permitted to divulge confidential information they gained while performing their job duties (Article 16 of the Act). Third, the Act stipulated the standards for processing radioactive isotopes and preventing hazards to the human body and public hazards arising from radiation produced during nuclear power research, development, production and use, using nuclear reactors, radioactive isotopes and radiation generation devices among other machines and apparatuses (Articles 23 to 28 of the Act). Fourth, the Nuclear Energy Commission

was to be comprised of five members, including one chairperson and one vice-chairperson (Article 7 of the Act). Fifth, an individual violating Article 10 and the confidentiality clause prescribed in Article 16 of the 「Atomic Energy Act」 was to be punished by imprisonment with or without prison labor for up to 10 years.

2. 「Atomic Energy Act」 amended as Act No. 3549 on April 1, 1982

The 「Atomic Energy Act」, amended as Act No. 3549 on April 1, 1982, set forth the matters pertaining to the safety management of nuclear power research, development, production and use, thereby promoting academic progress and the related industry so as to contribute to the improvement of the quality of life and welfare for citizens and to prevent hazards and ensure public safety. In order to deliberate on and reach a resolution on the important issues concerning nuclear power use and safety, Article 3 of the Act prescribed the establishment of the Nuclear Energy Commission under the Minister of Science and Technology. Article 5 (1) of the Act stipulated that the Commission be comprised of 7 to 9 members including a chairperson, a vice-chairperson and the President of Korea Energy Institute, provided that two of the members, excluding the chairperson, vice-chairperson and President of Korea Energy Institute, be standing members. Article 5 (2) stipulated that the Minister of Science and Technology be appointed as the Chairperson and the Vice-Minister of Science of Technology be the Vice-Chairperson, while the members were to be nominated by the Minister of Science and Technology and appointed by the President.

Also, a section on the construction and operation of nuclear reactors and related facilities was included in Chapter 4 to stipulate the requirement for any individuals wishing to build nuclear reactors and related facilities to obtain approval from the Minister of Science and Technology (Article 11 of the Act). Article 21 (1), on the other hand, requires those wishing to operate nuclear reactors and related facilities to obtain approval from the Minister of Science and Technology. The Act subdivided the nuclear cycle businesses into refinement, conversion, processing and spent fuel disposal businesses, and improved the permit and approval procedures for each of the businesses (Article 43 of the Act). Article 76 stipulated that the construction and operation of radioactive material disposal facilities required approval, and the radioactive material transport and disposal operations be reported and registered (articles 84 and 86 of the Act). Also, a licensing system was established for the operators of nuclear reactors and those dealing with nuclear fuel, radioactive isotopes and radiation-generating devices (Article 91 of the Act).

3. 「Atomic Energy Act」 amended as Act No. 5233 on December 30, 1996

The 「Atomic Energy Act」, amended as Act No. 5233 on December 30, 1996, stipulated the establishment of a nuclear safety commission to ensure the independence of nuclear safety regulations, and a nuclear R&D fund to ensure a stable supply of financial resources necessary for implementing nuclear power R&D projects. Additionally, with the change of the competent authorities for the radioactive waste management program, the Act was amended to ameliorate and supplement the issues observed

during the execution of the then-current system. While the Nuclear Energy Commission deliberated on and reached resolutions regarding the issues of nuclear power use and safety in the past, a nuclear safety commission was established to deliberate on and reach resolutions on the safety issues to ensure the independence of the nuclear safety regulations.

Moreover, in order to obtain the funds necessary for the nuclear R&D projects, the operators of nuclear reactors for nuclear power generation were required to pay the amount calculated by multiplying the wattage (amount of electric power produced) in the previous year by a designated rate to the Nuclear Power R&D Fund, which was to be established. Furthermore, the amended Act prescribed that for the processing and disposal of nuclear fuels after use, the Minister of Science and Technology and Minister of Commerce and Industry consult the heads of relevant ministers to decide on the procedure following a deliberation by the Nuclear Energy Commission. Lastly, the report on the environmental impact of radiation, which was to be submitted with the approval application for the construction of nuclear power plants, was to be made available for public viewing and hearing as a means to gather the opinions of the local residents.

4. 「Atomic Energy Act」 amended as Act No. 6354 on January 16, 2001

The 「Atomic Energy Act」, amended as Act No 6354 on January 16, 2001, reinforced the regulations on nuclear safety by introducing an isotope, etc. production approval system and a periodic safety assessment system for the purpose of enhancing safety of nuclear power plants in operation and reflecting the content of international agreements pertaining

to nuclear safety and security measures, and mitigated the issues observed in the execution of the then-current system.

The amended Act required the nuclear power plants in operation to undergo comprehensive safety assessment periodically so as to check the corrective and supplementary measures taken. The decommissioning of nuclear power plants and nuclear fuel cycle facilities required a plan to be established in relation to quality assurance, just as was necessary for obtaining approval for construction thereof, in order to ensure safety, as outlined in the newly included Article 23-3, Article 31 (2) 6 and Article 55 (2) 6. By introducing a production approval system for isotopes and radiation-generating devices in Article 65 (1), quality assurance and safety were ensured. Moreover, Article 103 of the Act stipulated the matters necessary for implementing the intranational agreements such as the provision of information on nuclear cycle R&D and the production of certain nuclear energy items, in accordance with the Additional Protocol for the IAEA safeguards for non-proliferation of nuclear weapons.

5. 「Atomic Energy Act」 amended as Act No. 7806 on December 30, 2005

The 「Atomic Energy Act」, amended as Act No. 7806 on December 30, 2005, led to the founding of the Korea Institute of Nuclear Nonproliferation and Control (KINAC), as an independent organization dedicated to nonproliferation and control of nuclear power, as a means to enhance the transparency of the national nuclear activities and gain trust from the global community. In addition, nuclear-related business operators were required to establish and execute emergency plans to systematically deal

with accidents occurring in the transport of radioactive materials. Also, to ensure administrative transparency, the Act stipulated that the approval criteria for nuclear reactors for power generation and related facilities be more specified. Moreover, Article 89 (1) of the Act required nuclear-related business operators and those commissioned by the nuclear-related business operators to transport radioactive materials to establish and implement emergency plans for accidents during the transport of radioactive materials.

6. Division of the 「Atomic Energy Act」 into the 「Nuclear Safety Act」 and the 「Nuclear Energy Promotion Act」

(1) 「Nuclear Energy Promotion Act」 enacted as Act No. 10909 on July 25, 2011

The 「Nuclear Energy Promotion Act」, enacted as Act No. 1090 on July 25, 2011, was established as an independent act under the principle that the regulations for nuclear safety and the regulations for promoting the development and use of nuclear power should be separated. Accordingly, the Act guaranteed a systematic and calculated implementation of the measures necessary for the promotion of nuclear energy, thereby ensuring stable development and use of nuclear energy. The IAEA Basic Safety Standards and the Convention on Nuclear Safety, etc. also stipulate that the institutions dedicated to nuclear safety must be effectually separated from a nuclear promotion organization for it to faithfully fulfill its given responsibilities. Accordingly, the government of the Republic of Korea changed the 「Atomic Energy Act」 into the 「Nuclear Energy Promotion Act」, with only the matters related to the use of nuclear energy from the

former Act included in the newly established Act and the matters pertaining to safety management stipulated separately. This effectively separated the nuclear energy use and promotion system from the nuclear safety regulations, thereby adhering to the international standards and advancing the management system for nuclear energy development and use.

First, articles 3 to 8 of the「Nuclear Energy Promotion Act」stipulated the matters in relation to the establishment of the Atomic Energy Commission under the Prime Minister to deliberate on and reach resolutions regarding the important matters related to nuclear energy research, development and use. Second, articles 9 and 10 of the Act required the Minister of Education, Science, and Technology (MEST) to formulate a comprehensive plan for the promotion of nuclear energy every five years, and the Minister of MEST and heads of the relevant ministries to formulate and execute annual implementation plans. Third, Article 11 of the Act allowed the establishment of nuclear energy research and development institutes among others dedicated to research and experiments on nuclear energy and promotion of nuclear energy use, under the supervision of the Ministry of MEST, and the matters concerning the establishment and operation thereof were to be set forth in a different act. Fourth, Article 15 of the Act stipulated that the government may pay subsidies to patent-pending inventions or inventions already patented relating to nuclear energy within budgetary limits. Lastly, from Article 17 to Article 19 of the Act, it was stipulated that the government may create a research and development fund for nuclear energy and that the fund be managed and operated by the Minister of MEST.

(2) 「Nuclear Safety Act」 enacted as Act No. 10911 on July 25, 2011

The 「Nuclear Safety Act」 was enacted as Act No. 10911 on July 25, 2011 to ensure the independence of the regulations on nuclear safety for safe use of nuclear energy, as well as to observe the IAEA Basic Safety Standards and the Convention on Nuclear Safety, etc. which stipulate that the institutions dedicated to nuclear safety must be effectually separated from a nuclear energy promotion organization. Accordingly, the matters related to nuclear safety management were to be supervised by the Nuclear Safety and Security Commission, as a means to effectually separate the nuclear safety regulations and the nuclear energy use and promotion system, thereby conforming to the international standards and ensuring the independence of the nuclear safety regulations to prevent radiation hazards arising from the use and development of nuclear energy and to boost public safety.

In accordance with articles 3 and 4 of the 「Nuclear Safety Act」, the Nuclear Safety and Security Commission was to formulate a comprehensive plan for nuclear safety and security every 5 years for safety management of nuclear energy use, and the Nuclear Safety and Security Commission and the heads of relevant ministries were required to formulate and implement the annual project implementation plans. Article 5 of the Act stipulated the establishment of a nuclear safety institution dedicated to nuclear safety management, under the superivison of the Nuclear Safety and Security Commission. Also, the matters pertaining to the establishment and operation of the Korea Institute of Nuclear Safety (KINS) were to be set forth in a separate act, while the Korea Institute of Nuclear

Nonproliferation and Control (KINAC) was established pursuant to articles 6 and 7 of the Nuclear Safety Act for efficient execution of the safety measures concerning nuclear energy- related facilities and nuclear materials and the control of import and export thereof.

Moreover, articles 10, 12, 14, 20, 21, 30, 35, 36, 45, 46, 52, 53, 55, 63, 64 and 99 of the 「Nuclear Safety Act」 require the individuals intending to build and operate nuclear reactors and related facilities, to refine or process nuclear fuels or fuel materials, to use nuclear fuels, to produce, sell and use radioactive isotopes or radiation-generating devices, or to build and operate radioactive waste storage, processing and/or disposal facilities and the auxiliary facilities thereof to obtain approval or permit from the Nuclear Safety and Security Commission, as prescribed by the relevant Presidential Decree, or to report for registration, as prescribed by the rules of the Nuclear Safety and Security Commission. In addition, articles 15, 34, 44, 51 and 69 of the Act required those installing nuclear reactors, running nuclear fuel cycle businesses, using nuclear fuels, and building or operating radioactive waste disposal facilities to obtain approval from the Nuclear Safety and Security Commission under the metric control regulations for internationally regulated nuclear materials, in accordance with the relevant Presidential Decree.

Furthermore, articles 16, 22, 34, 37, 47 and 65 of the Act made inspections by the Nuclear Safety and Security Commission a requirement for installers and operators of nuclear reactors in regard to the construction of nuclear reactors and related facilities and the metric control of designated nuclear materials for nonproliferation of nuclear weapons, for nuclear fuel cycle business operators in regard to the construction and

operation of nuclear fuel cycle facilities and the metric control of designated nuclear materials, for nuclear fuel users in regard to the possession and use of nuclear fuels and the metric control of designated nuclear materials, and for radioactive waste disposal facility builders and operators in regard to the establishment and operation of disposal facilities, the storage, processing and disposal of radioactive wastes, and the metric control of designated nuclear materials, in accordance with the relevant Presidential Decree.

Also, articles 56, 61, 75, 77 and 80 of the 「Nuclear Safety Act」 made inspections by the Nuclear Safety and Security Commission a requirement for the producers, sellers and users of radioactive isotopes or radiation-generating devices and their business agents in regard to the production, sales, use and duties of the agency, for the manufacturers or importers of radiation-generating devices in regard to the said devices, for the nuclear-related business operators and those commissioned to package or transport the radioactive materials from the said business operators in regard to the technical standards for the packaging and transport process, for the nuclear-related business operators in regard to the vessels for transporting the radioactive materials that they manufactured or imported, and for the dosimeter reading service providers in regard to their duties, in accordance with the relevant Presidential Decree.

Lastly, in accordance with articles 78 and 81 of the Act, persons intending to render the dosimeter reading service aimed at reading the radiation exposure dose to human bodies shall register their business with the Nuclear Safety and Security Commission, and in case of business registration by fraudulent or other illegal means, the Commission could cancel the relevant registration or order the suspension of their service.

7. 「Act on the Establishment and Operation of the Nuclear Safety and Security Commission」 enacted as Act No. 10912 on July 25, 2011

The 「Act on the Establishment and Operation of the Nuclear and Security Commission」, enacted as Act No. 10912 on July 25, 2011, prescribed that the nuclear safety institutions must be effectually separated from nuclear to fulfill its responsibilities even in relation to the IAEA Basic Safety Standards and the Convention on Nuclear Safety, etc. However, prior to the Fukushima Daiichi nuclear disaster in Japan on March 11, 2011, the independence of regulatory agencies had not been guaranteed. Thus, for safe use of nuclear power, the independence of regulatory agencies was assured and the Nuclear Safety and Security Commission was established to effectually separate the administrative management system for safety regulations on nuclear energy and the administrative management system for nuclear energy use and promotion. In addition to observing the international standards, the independence of safety regulations on nuclear energy was ensured to protect citizens from radiation disasters and contribute to public safety and environmental conservation.

Of particular note, the 「Act on the Establishment and Operation of the Nuclear Safety and Security Commission」, established as Act No. 10912 on July 12, 2011, prescribed the establishment of the Nuclear Safety and Security Commission under the Prime Minister for the performance of duties related to nuclear safety in Article 3, and defined the Commission as a central administrative institution in accordance with the 「Government Organization Act」. The Commission was to be comprised of a chairperson and 9 members, with the Chairperson and one of the members designated

as standing members and as public officials in political service (Article 4 of the Act).

Article 5 of the Act stipulated that the Chairperson appointed by the President at the request of the Prime Minister, four Commission members including standing members shall be appointed or commissioned by the President at the request of the Commission Chairperson, and the other four members shall be appointed or commissioned by the President on the recommendation of the National Assembly. It also prescribed that the Commission consist of persons from every relevant field such as nuclear energy, environment, public health, medical service, science and technology, public safety, law, humanities, and social science, which can contribute to the safety of nuclear energy.

The Commission was to be in charge of nuclear safety management and related R&D, and deliberate on and reach resolutions on the issues related to compiling, adjusting and coordinating the matters on nuclear safety management. Also, the Commission was required to submit a report on the performance of its duties for each fiscal year to the National Assembly within three months after the end of each fiscal year (Article 16 of the Act).

<Changes in the legal system concerning nuclear energy in Korea>[8)]

Former legal system concerning nuclear energy	Current legal system concerning nuclear energy
Atomic Energy Act (Enacted in Mar. 1958, Act No. 483)	**Nuclear Energy Promotion Act** (Wholly Amended by Act No. 10909, Jul. 25, 2011)
	Nuclear Safety Act (Enacted on July 25, 2011, Act No. 10911)
	Act on the Establishment and Operation of the Nuclear Safety and Security Commission (Enacted on July 25, 2011, Act No. 10912)
Radioactive Waste Management Act (Enacted on Mar. 28, 2008, Act No. 9016)	**Radioactive Waste Management Act**
Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste (Enacted on Mar. 31, 2005, Act No. 7444)	**Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste**
	Enactment of the 「Act on the Procedure for High Level Radioactive Waste Management (Tentative title)」 underway

8) Lee, Sang-Yoon/ Yi, Se-Jeong/ Lee, Jin-Kuk/ Son, Hyun/ KIM, Jong-Cheon/ Kim, Hyung-Gun, A Study on the Introduction Plans of the Optimum Safety Regulation System and Technique by Analyzing the Nuclear Law System, (Nuclear Safety and Security Commission, 2013/9), pp. 82-83.

Former legal system concerning nuclear energy	Current legal system concerning nuclear energy
Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters (Enacted on May. 15, 2003, Act No. 6873)	**Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters**
Act on Protective Action Guidelines Against Radiation in the Natural Environment (Enacted on Jul. 25, 2011, Act No. 10908)	**Act on Protective Action Guidelines Against Radiation in the Natural Environment**
Nuclear Damage Compensation Act (Enacted on Jan. 24, 1969, Act No. 2094)	**Nuclear Damage Compensation Act**
Korea Institute of Nuclear Safety Act (Enacted on Dec. 30, 1989, Act No. 4195)	**Korea Institute of Nuclear Safety Act**

Section 2 The Main Content of the 「Nuclear Energy Promotion Act」

<The Content of the Nuclear Energy Promotion Act>

CHAPTER I GENERAL PROVISIONS	Article 1 (Purpose) Article 2 (Definitions)

CHAPTER Ⅱ ATOMIC ENERGY COMMISSION	Article 3 (Atomic Energy Commission) Article 4 (Functions of Commission) Article 5 (Composition of Commission) Article 6 (Grounds for Disqualification of Members) Article 7 (Term of Office of Members) Article 8 (Operation of Commission)
CHAPTER Ⅲ FORMULATION AND EXECUTION OF COMPREHENSIVE PLANS FOR PROMOTION OF NUCLEAR ENERGY, AND RESEARCH, DEVELOPMENT, ETC. OF NUCLEAR ENERGY	Article 9 (Formulation of Comprehensive Plans for Promotion of Nuclear Energy) Article 10 (Execution of Comprehensive Plans) Article 11 (Nuclear Energy Research and Development Institutes, etc.) Article 12 (Promotion of Research and Development Projects on Nuclear Energy) Article 13 (Cost-Sharing on Research and Development Projects on Nuclear Energy) Article 14 (Compulsory Collection) Article 15 (Disbursement of Subsidies for Patents, etc.) Article 16 (Survey of Actual Conditions)
CHAPTER Ⅳ RESEARCH AND DEVELOPMENT FUND FOR NUCLEAR ENERGY	Article 17 (Creation of Research and Development Fund for Nuclear Energy) Article 18 (Management and Operation of Fund) Article 19 (Use of Fund)
CHAPTER Ⅴ SUPPLEMENTARY PROVISIONS	Article 20 (Confidentiality) Article 21 (Allowances for Public Officials with regard to Use of Nuclear Energy)
CHAPTER Ⅵ PENALTY PROVISIONS	Article 22 (Penalty Provisions) Article 23 (Administrative Fines)

(1) The Purpose of Legislating the 「Nuclear Energy Promotion Act」

The sole means for Korea to obtain sufficient energy resources, which it lacks, was to gain independent nuclear technology using its abundant human resources. Also, in order to improve the quality of life for citizens, the nuclear energy use and promotion system and the safety regulation system were effectually distinguished to expand the scope of utilization of nuclear energy to include industries and medical use, thereby ensuring safe use of nuclear energy. According to these intentions, Article 1 states that the purpose of the 「Nuclear Energy Promotion Act」 is to provide for matters concerning the research, development, production and use of nuclear energy to contribute to enhancing people's lifestyles and welfare by facilitating the advancement of academic research and industrial development.

(2) Nuclear Energy Promotion Commission

Article 3 of the 「Nuclear Energy Promotion Act」 prescribed the establishment of the Nuclear Energy Promotion Commission under the Prime Minister to deliberate on and resolve important matters concerning the use of nuclear energy. The Commission was to deliberate on and resolve the matters concerning the use of nuclear energy; matters concerning the formulation of comprehensive plans for the promotion of nuclear energy referred to in Article 9; matters concerning plans for estimation and allocation of expenditures for the use of nuclear energy; matters concerning the conduct of testing and research on the use of nuclear energy; matters concerning the fostering and training of researchers

and engineers for the use of nuclear energy; matters concerning master plans for the management of radioactive waste referred to in Article 6 of the Radioactive Waste Management Act; matters concerning the processing and disposal of spent nuclear fuel; and other matters the Chairperson of the Commission deemed important and referred to the Commission.

The Act also prescribed that the Commission be comprised of not less than nine, but not more than 11 members, including one Chairperson, with the Prime Minister as the Chairperson of the Commission, and the Minister of Strategy and Finance, Minister of Education, Science and Technology, Minister of Foreign Affairs and Trade, Minister of Knowledge Economy (hereinafter referred to as "ex officio members") and other persons appointed or commissioned by the President upon recommendation by the Chairperson shall become the members thereof. The term of office of members, excluding ex officio members, was to be be three years, who may be reappointed (Article 7 of the Act).

(3) Establishment and Implementation of Comprehensive Nuclear Energy Plans and Nuclear Energy R&D

Chapter 3 Article 9 of the「Nuclear Energy Promotion Act」stipulated that the Minister of Science, Information and Communications Technology (ICT) and Future Planning shall formulate a comprehensive plan for the promotion of nuclear energy every five years. The comprehensive plans were to include the matters related to the current state of and prospects for the use of nuclear energy, policy objectives of and basic direction-setting for the use of nuclear energy, sectoral tasks and the promotion

thereof, investment plans and financing of required financial resources, and other matters necessary for the use of nuclear energy.

Article 10 (1) of the Act stipulated that the Minister of Science, Information and Communications Technology (ICT) and Future Planning and the heads of the relevant ministries shall formulate a sectoral execution plan for matters under their jurisdiction every five years based on the comprehensive plan and also formulate and execute a detailed plan for the implementation of projects annually based on the sectoral execution plan. Moreover, the Minister of Science, Information and Communications Technology (ICT) and Future Planning was to formulate a plan for research and development projects on nuclear energy pursuant to a sectoral execution plan formulated pursuant to Article 10 (1), and may, for the efficient promotion thereof, select research tasks each year and entrust the research and development thereof to the institutions or organizations under the provisions of Article 14 (1) of the 「Basic Research Promotion and Technology Development Support Act」 by concluding an agreement (Article 12 (1) of the Act). The costs for research and development projects on nuclear energy were to be covered by governmental contributions, the 2. Research and Development Fund for Nuclear Energy referred to in Article 17 (2), borrowings referred to in Paragraph 4, the balance accrued during the course of conducting research and development projects on nuclear energy, and other revenues (Article 12 (2) of the Act).

Article 13 (1) of the 「Nuclear Energy Promotion Act」 stipulated that the operator of each electricity-generating reactor shall bear the costs of research and development projects on nuclear energy referred to in Article 12 (2), and that the amount of money to be borne by an operator

of an electricity-generating reactor pursuant to paragraph (1) (hereinafter referred to as "charges"), prescribed by Presidential Decree, would not exceed the amount obtained by multiplying one point two won per kilowatt-hour by the volume of electricity generated through operation of the relevant reactor in the preceding year (Article 13 (2) of the Act). In other words, the Act provided for a mandatory provision for the Ministry of Science, Information and Communications Technology (ICT) and Future Planning to order operators of nuclear reactors to pay the charges as necessary (Article 13 (3) of the Act).

In case the operator of an electricity-generating reactor failed to pay charges within the payment deadline, the Minister of Science, Information and Communications Technology (ICT) and Future Planning was to urge him/her to pay the charges, within seven days after the payment deadline, and Article 21 of the National Tax Collection Act was to be applied mutatis mutandis to collection of surcharges if an obligor fails to pay charges and charges in arrears within the payment deadline (Article 14 (1) and (2) of the Act).

Also, Article 16 (1) of the「Nuclear Energy Promotion Act」stipulated that the Minister of Science, Information and Communications Technology (ICT) and Future Planning conduct a survey on the actual conditions of nuclear energy industries in order to efficiently promote policies for the use of nuclear energy.

(4) Research and Development Fund for Nuclear Energy

Article 17 of the「Nuclear Energy Promotion Act」stipulated that the "Government shall create a Research and Development Fund for Nuclear Energy [...] to secure financial resources needed for research and

development projects on nuclear energy referred to in Article 12" and for attaining the objective of nuclear safety management prescribed in Article 1 of the 「Nuclear Safety Act」. The Fund was to be distinguished as nuclear energy research and development regulation account and nuclear safety regulation account, the former of which was to consist of charges referred to in Article 13 and surcharges referred to in Article 14 (2), profits from the operation of the Fund, and loans referred to in Paragraph 4, and other revenues. The financial resources for the nuclear safety regulation account prescribed in Article 111-4 of the 「Nuclear Safety Act」 consisted of the burden charges set forth in Article 111-2 (1) and additional charges prescribed in Article 111-3 (2), payments collected in accordance with Article 45 (2) of the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」, fines and penalties collected in accordance with the Act and the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」, compensations prescribed in Article 7 of the 「Act on Governmental Contracts for Nuclear Damage Compensation」, government funding, funding and donations from non-governmental entities, money transferred from the general account, profits from managing the nuclear safety regulation account, deposits received from the Public Capital Management Fund in accordance with the 「Public Capital Management Fund Act」, loans prescribed in Article 17 (3) of the 「Nuclear Energy Promotion Act」, and other profits prescribed by presidential decrees.

On the other hand, Article 18 of the 「Nuclear Energy Promotion Act」 stipulated that the nuclear energy research and development account be managed and operated by the Minister of Science, Information and

Communications Technology (ICT) and Future Planning, and the nuclear safety regulation account be managed and operated by the Nuclear Safety and Security Commission, provided that when deemed necessary, administrative affairs concerning the management and operation of the Fund may be delegated or entrusted to relevant institutions or organizations, as prescribed by Presidential Decree.

Under the then-circumstances, it was difficult to secure additional financial resources for urgent research and development projects or to mitigate the urgent issues concerning nuclear energy with the then-nuclear energy safety fund management system. Thus, in order to meet the surge in demand for nuclear safety regulations and to conduct research and development projects to improve nuclear safety, there was an urgent need to stably secure financial resources. Accordingly, the "Research and Development Fund for Nuclear Energy" referred to in the「Nuclear Energy Promotion Act」was changed to "Nuclear Energy Fund," and a nuclear safety regulation account was newly established within the Nuclear Energy Fund to separate the financial resources for promotional and regulatory purposes.

(5) Confidentiality

The「Nuclear Energy Promotion Act」stipulated that no member of the Commission or public official currently or formerly engaged in duties prescribed in this Act shall divulge confidential information concerning nuclear energy they acquired in the course of performing duties to others, or use them for purposes, other than those of enforcing this Act, and the executives and employees of institutions and organizations commissioned in accordance with Article 16 of the Act were viewed as "public

officials" under the application of articles 129 through 132 of the 「Criminal Act」.

Section 3 The Main Content of the 「Nuclear Safety Act」

<The Content of the Nuclear Safety Act>

CHAPTER Ⅰ GENERAL PROVISIONS	Article 1 (Purpose) Article 2 (Definitions) Article 2-2 (Basic Principles of Nuclear Safety Management)
CHAPTER Ⅱ FORMULATION, IMPLEMENTATION, ETC. OF COMPREHENSIVE PLAN FOR NUCLEAR SAFETY AND SECURITY	Article 3 (Formulation of Comprehensive Plan for Nuclear Safety and Security) Article 4 (Implementation of Comprehensive Plan) Article 5 (Institution Specialized in Nuclear Safety and Security) Article 6 (Establishment of Korea Institute of Nuclear Nonproliferation and Control) Article 7 (Activities of KINAC) Article 7-2 (Establishment of the Korea Foundation of Nuclear Safety) Article 8 (Investigation of Actual Situations) Article 9 (Promotion, etc. of Research and Development Projects for Nuclear Safety and Security)
CHAPTER Ⅲ CONSTRUCTION AND OPERATION OF NUCLEAR REACTORS AND RELEVANT FACILITIES	Article 10 (Construction Permits) Article 11 (Criteria for Permits) Article 12 (Standard Design Approval) Article 13 (Cancellation of Standard Design Approval) Article 14 (Grounds for Disqualification) Article 15 (Regulations for Metrical Control) Article 15-2 (Reporting on Contracts for Safety-Related Installations)

	Article 15-3 (Reporting on Nonconformities) Article 15-4 (Designation, etc. of Performance Test Management Institutions) Article 16 (Inspections) Article 17 (Cancellation, etc. of Construction Permits) Article 18 (Recording and Keeping) Article 19 (Succession) Article 20 (Operating Licenses) Article 21 (Criteria for Licenses) Article 22 (Inspections) Article 23 (Periodic Safety Reviews) Article 24 (Cancellation, etc. of Operating Licenses) Article 25 (Recording and Keeping) Article 26 (Operational Safety Measures, etc.) Article 27 (Measures such as Suspension of Use, etc. of Nuclear Power Reactor and Relevant Facilities) Article 28 (Decommissioning of Nuclear Power Reactors and Relevant Facilities) Article 29 (Application Mutatis Mutandis) Article 30 (Permits for Construction of Research Reactors, etc.) Article 30-2 (Licenses to Operate Research Reactors, etc.) Article 31 (Notification, etc. of Entry and Departure of Foreign Nuclear-Powered Ship) Article 32 (Cancellation, etc, of Construction Permits, Operating Licenses, etc.) Article 33 (Reporting on Suspension, Discontinuation, etc. of Business) Article 34 (Application Mutatis Mutandis)
	Article 35 (Licenses, etc. for Nuclear Fuel Cycle Business) Article 36 (Criteria for Licenses, etc.)

CHAPTER Ⅳ NUCLEAR FUEL CYCLE BUSINESS AND USE, ETC. OF NUCLEAR MATERIALS	Article 37 (Inspections) Article 38 (Cancellation, etc. of Licenses, etc.) Article 39 (Recording and Keeping) Article 40 (Operational Safety Measures, etc.) Article 41 (Measures for Suspension of Use, etc. of Nuclear Fuel Cycle Facilities) Article 42 (Decommissioning of Nuclear Fuel Cycle Facilities) Article 43 (Reporting on Commencement of Business, etc.) Article 44 (Provisions to be Applied Mutatis Mutandis) Article 45 (License for Use, etc. of Nuclear Fuel Materials) Article 46 (Criteria for License) Article 47 (Inspections) Article 48 (Cancellation, etc. of License for Use or Possession) Article 49 (Recording and Keeping) Article 50 (Obligation to Observe Criteria, etc.) Article 51 (Mutatis Mutandis Application) Article 52 (Reporting on Use, etc. of Nuclear source materials)
CHAPTER Ⅴ RADIOISOTOPE AND RADIATION GENERATING DEVICE	Article 53 (License, etc. for Use, etc. of Radioisotope and Radiation Generating Device) Article 53-2 (Radiation Safety Managers) Article 54 (Registration of Business Agent) Article 55 (Criteria for Licenses, etc.) Article 56 (Inspection) Article 57 (Cancellation, etc. of Licenses, etc. for Production, Sale, Use or Mobile-Use) Article 58 (Recording and Keeping) Article 59 (Obligation to Observe Criteria, etc.) Article 59-2 (Client's Obligation to Take Safety Measures) Article 60 (Approval for Design, etc. of Radiation Generating Devices, etc.)

	Article 61 (Inspection) Article 62 (Mutatis Mutandis Application)
CHAPTER Ⅵ DISPOSAL AND TRANSPORTATION	Article 63 (Permits for Construction and Operation of Radioactive Wastes Management Facilities, etc.) Article 64 (Criteria for Permits) Article 64 (Criteria for Permits) Article 65 (Inspections) Article 66 (Revocation, etc. of Permits to Construct and Operate Radioactive Wastes Management Facilities, etc.) Article 67 (Recording and Keeping) Article 68 (Obligation to Observe Standards, etc.) Article 69 (Provisions to be Applied Mutatis Mutandis) Article 70 (Restrictions on Disposal of Radioactive Wastes) Article 71 (Reporting on Transportation) Article 72 (Technical Criteria concerning Packing and Transportation) Article 73 (Management of Exposure, etc.) Article 74 (Measures against Accidents, etc.) Article 75 (Inspection of Packing and Transportation) Article 76 (Approval for Design of Transportation Containers) Article 77 (Inspection)
CHAPTER Ⅶ DOSIMETER READING SERVICE, ETC	Article 78 (Registration of Dosimeter Reading Service Providers) Article 79 (Criteria for Registration) Article 80 (Inspection) Article 81 (Cancellation, etc. of Registration of Dosimeter Reading Service Providers)

	Article 82 (Recording and Keeping) Article 83 (Mutatis Mutandis Application)
CHAPTER Ⅷ LICENSE AND EXAMINATION	Article 84 (License, etc.) Article 85 (Grounds for Disqualification) Article 86 (Cancellation, etc. of Licenses) Article 87 (License Examinations) Article 88 (License Certificate)
CHAPTER Ⅸ REGULATION AND SUPERVISION Article 89 (Establishment of Restricted Areas)	Article 89 (Establishment of Restricted Areas) Article 90 (Restrictions on Installation of Hazardous Facilities) Article 91 (Measures to Prevent Radiation Damage) Article 92 (Measures for Prevention of Radiation Damage and Reporting) Article 92-2 (Periodic Updates of Decommissioning Plans) Article 93 (Expropriation or Transfer of Nuclear Materials, etc.) Article 94 (Restriction on Possession, Transfer or Takeover of Radioactive Materials, etc. or Radiation Generating Devices) Article 95 (Measures following Cancellation of License, etc. or Discontinuation of Business) Article 96 (Restriction on Handling of Nuclear Energy Utilization Facilities) Article 97 (Reporting on Theft, etc.) Article 98 (Report, Inspection, etc.)
CHAPTER Ⅹ SUPPLEMENTARY PROVISIONS	Article 99 (Conditions for Permit and License or Designation) Article 100 (Approval of Topical Reports) Article 101 (Hearings) Article 102 (Protection for Workers) Article 103 (Gathering Consensus from Residents)

	Article 103-2 (Duty to Disclose Information) Article 104 (Preservation of Environment) Article 105 (Monitoring of Nationwide Radioactive Environment) Article 106 (Education and Training) Article 107 (Importation and Exportation Procedures) Article 107-2 (International Cooperation) Article 108 (Confidentiality) Article 109 (Allowances for Public Officials Related to Nuclear Safety and Security) Article 110 (Compensation) Article 110-2 (Payment of Monetary Rewards) Article 110-3 (Mitigation, Remission, etc. of Punishment) Article 111 (Delegation of Authority) Article 111-2 (Burden Charges, etc. on Nuclear Safety Management) Article 111-3 (Forcible Collection of Payment) Article 111-4 (Financial Resources and Purpose of Use of the Nuclear Safety Regulation Account of the Nuclear Energy Fund) Article 112 (Fees)
CHAPTER XI PENAL PROVISIONS	Article 113 (Penal Provisions) Article 114 (Penal Provisions) Article 115 (Penal Provisions) Article 116 (Penal Provisions) Article 117 (Penal Provisions) Article 118 (Penal Provisions) Article 119 (Administrative Fines) Article 120 (Joint Penal Provisions) Article 121 (Legal Fiction as Public Officials in Application of Penal Provisions)

1. Safety Regulations Concerning the Construction and Operation of Nuclear Power Plants

(1) Prior Approval of Construction Site and Limited Works

The primary issue that is important in building a nuclear power plant is “selection of the construction site.” The location criteria for nuclear power plants include the environmental conditions that ensure sufficient protection against the worst natural disasters and sufficient preparedness for radiation accidents from the earth science and humanities approaches. Thus, the matters for consideration when selecting the construction site include the geological features, natural phenomena such as earthquakes and meterological and hydraulic conditions, population density, distance to populous areas, transportation and feasibility of an emergency plan during an accident.

In relation to this, Article 10 (3) of the 「Nuclear Safety Act」 stipulates that when a person who intends to construct a nuclear power reactor and relevant facilities applies for prior approval of the site before filing an application for a construction permit, the Commission may grant approval after review. Paragraph 4 under the same Article, on the other hand, stipulates that “any person who has obtained prior approval of the site pursuant to paragraph (3) may execute the construction works to the extent prescribed by Ordinance of the Prime Minister.”

The objective of the legislator in relation to requiring prior approval of the construction site arose from the fact that the procedure from engineering to the acquisition of a construction permit is complex and time consuming due to the nature of nuclear power plants. Accordingly,

this legislation allows individuals to receive approval based on a review of the conformity and legitimacy of the construction prior to filing an application for approval of the nuclear power plant construction and to perform construction work within a limited scope, thereby easing the financial burden and burden of time on nuclear power generation business operators and allowing seamless execution of the business through this system of selecting a construction site for a nuclear power plant in advance.

(2) Construction Permits for Nuclear Power Plants

Article 10 (1) of the「Nuclear Safety Act」prescribes that "any person who intends to construct a nuclear power reactor and relevant facilities shall obtain a permit from the Commission, as prescribed by Presidential Decree. The same shall apply to any alteration of any term or condition of the permit." Meanwhile, paragraph (2) of the same Article stipulates that "Any person who intends to obtain a permit under paragraph (1) shall file with the Commission, an application for a permit, accompanied by a radiological environmental impact assessment report, a preliminary safety analysis report, a construction quality assurance plan, a plan to decommission a nuclear power reactor and relevant facilities, and other documents prescribed by Ordinance of the Prime Minister."

Article 11 of the「Nuclear Safety Act」sets forth the criteria for permits that require the applicant to have technical capabilities necessary for constructing a nuclear power reactor and relevant facilities, the protection of health, physical objects, and the general public from radiation damage caused by radioactive material, etc. to be not impeded, the criteria prescribed by Presidential Decree to protect public health and

the environment from disasters be satisfied, and the details of the construction quality assurance plan meet the requirements prescribed by the Rules of the Commission.

Accordingly, because the safety of nuclear power plants can only be ensured through impeccable management of construction permits and the construction processes, the permit granting procedure is strict and long. This is to ensure protection of the lives and bodies of citizens by preventing the risks arising from nuclear power plant facilities in advance based on the nuclear power plant construction permit system.

(3) Standard Design Approval for Nuclear Power Plants

Article 12 (1) of the 「Nuclear Safety Act」 stipulates "Any person intending to repeatedly construct the nuclear power reactor and relevant facilities of the same design may obtain approval for such design [..] from the Commission as prescribed by Presidential Decree. The same shall also apply to the alteration of the authorized matters: Provided, That the alteration of matters prescribed as insignificant by Ordinance of the Prime Minister shall be reported." The objective of this provision is to, in case of repeatedly building nuclear power reactors and relevant facilities of the same design, allow applicants to receive a standard design approval in advance so as to omit repetitive reviews of the same design, thereby simplifying the safety review procedure and enhancing the efficiency of the regulation.

(4) Inspection System and Ordering of Corrective Actions for the Construction of Nuclear Power Reactors and Relevant Facilities

Article 16 (1) of the「Nuclear Safety Act」requires every installer of a nuclear power reactor, every supplier or performance testing institute to undergo an inspection conducted by the Commission regarding the construction of the nuclear power reactor and relevant facilities, and the metrical control of the special nuclear materials, as prescribed by Presidential Decree. Article 26 of the Enforcement Decree of the Act sets forth the matters regarding an pre-service inspection system that prevents the use of a nuclear reactor facility, unless it has been inspected and approved by the Nuclear Safety and Security Commission in relation to its construction work and performance. Accordingly, if the approval criteria are not found to be satisfied during prior inspection, corrective measures may be ordered in accordance with the Act.

Generally, an inspection system refers to an administrative authority checking whether a certain equipment, facility, machine or product satisfies the inspection criteria to ensure public safety and health and allowing the use and/or distribution thereof only if such criteria are satisfied. In other words, the inspection system itself does not give rise to a certain legal effect, but actually is a set of prerequisites for the legal effect to arise. If the item under inspection fails to pass the inspection, the use and distribution thereof will be prohibited or such item cannot be employed in certain types of work. Thus, under the「Nuclear Safety Act」, the inspection system implemented in cases where there is impact on safety of the lives and bodies of citizens is a preventive safety measure that prevents nuclear power plant accidents in advance, instead of pursuing an administrative objective (public safety) of merely processing an accident involving radiation leakage after the fact.

(5) Applications for Operating Licenses for Nuclear Power Reactors and Relevant Facilities

Article 21 (1) of the 「Nuclear Safety Act」 stipulates “Any person who intends to obtain a license to operate reactor facilities [...] shall prepare and file an application for a license for each reactor facility with the Commission, as prescribed by Ordinance of the Prime Minister: Provided, That he/she may file one application when intending to operate at least two reactors of the same type, same thermal power, and same structure in the same site.” In other words, while the construction permit granting procedure for nuclear power reactors and relevant facilities is a preliminary safety review, the operating license is a means to perform a final safety check. This is key to the safety regulation. Thus, an operating license must be obtained for a nuclear power plant for it to be charged with nuclear fuel.

The matters for review in relation to the construction permit and operating license for a nuclear power reactor and relevant facilities include whether it is possible for the operating license application to be rejected after an issuance of the construction permit. Considering that the applicant bears a considerable financial burden, it should be determined whether the administrative entity (Nuclear Safety and Security Commission) will exercise its right to reject the operating license application. Of particular note, the construction of nuclear power plants and ports is a national project that is highly costly. Accordingly, if a nuclear power plant business operator is issued a construction permit first and the operating license, obtained thereafter, is bound, then the issue of binding force arises

against the acquisition of a operating license, which is the administrative action after the granting of a construction permit.

Accordingly, the operating license system is a nominal approval, as is the case for construction permits, and the right to grant approval for operation belongs to the Nuclear Safety and Security Commission, even if the licensing conditions are met.

(6) The Inspection System for the Operation of Nuclear Power Reactors and Relevant Facilities

Article 22 of the「Nuclear Safety Act」stipulates that the nuclear power reactor operators shall receive inspections of the operation of relevant facilities by the Commission on a regular basis in accordance with Article 35 of the Enforcement Decree of the Act.

Also, Article 15 of the「Nuclear Safety Act」prescribes that operators of nuclear power reactors shall make regulations for metrical control of the nuclear materials among the internationally controlled materials (hereinafter referred to as "special nuclear materials") as prescribed by Presidential Decree, and obtain the approval of the Commission, before starting to use the special nuclear materials In addition, if the approval criteria are not deemed to be satisfied in the pre-service inspection, the Commission may order the supplementation for the insufficiency thereof.

(7) Periodic Safety Reviews of the Nuclear Power Reactors and Relevant Facilities

Article 23 (1) of the「Nuclear Safety Act」stipulates "Every operator of a nuclear power reactor shall periodically review the safety thereof

and relevant facilities, as prescribed by Presidential Decree, and submit the findings thereof to the Commission: Provided, That matters necessary for the periodic safety review of nuclear power reactors and relevant facilities permanently suspended upon obtaining alteration to his/her license pursuant to Article 21 (2) shall be prescribed by Presidential Decree." Also, Article 36 of the Enforcement Decree of the Nuclear Safety Act "each operator of a nuclear power reactor shall comprehensively review the safety of the reactor facilities every ten years from the date he/she has obtained an operating license of such reactor facilities (if he/she has obtained a construction permit and an operating license simultaneously, the date the nuclear reactor first reaches its criticality shall be deemed the date he/she has obtained the operating license; hereafter the same shall apply in this Article), and prepare and submit a review report to the Commission."

Article 23 (3) of the 「Nuclear Safety Act」 delegates the responsibility of prescribing the methods of conducting periodic safety reviews and the details of such reviews, and other necessary matters to the Presidential Decree. Article 37 of the Enforcement Decree of the Act prescribes that the checklist for periodic safety reviews includes matters concerning the design of reactor facilities, matters concerning the actual status of structures, systems and equipment crucial for safety, matters concerning deterministic safety analysis, matters concerning probabilistic safety reviews, matters concerning hazard analysis, matters concerning equipment verification, matters concerning ageing degradation (referring to physical or chemical process that causes damage to the system, structure and equipment of a nuclear power plant by passage of time or use), matters concerning safety

performance, matters concerning the utilization of nuclear power plant operating experience and research findings, matters concerning operation and maintenance procedures, etc., matters concerning the organization, management structure and safety culture, matters concerning human factors (including matters concerning the situation of members, etc. necessary for the operation of a nuclear reactor), matters concerning radiation emergency plans formulated under Article 20 of the「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」, and matters concerning radiological environmental impacts.

Also, when the results of a periodic safety review or subsequent safety measures are deemed insufficient, the Commission may order the operator of the relevant nuclear power reactor to correct or supplement such defects (Article 23 (2) of the Act).

2. Safety Regulations for Nuclear Fuel Cycle Business and Use of Nuclear Materials, etc.

(1) Licenses, etc. for Nuclear Fuel Cycle Business

Article 35 of the「Nuclear Safety Act」stipulates "Any person who intends to operate a business refining or fabricating nuclear source materials or nuclear fuel materials (including a business converting such materials) shall obtain a license from the Commission, as prescribed by Presidential Decree. The same shall also apply to any alteration of any term or conditions of the license: Provided, That the alteration of any insignificant matter prescribed by Ordinance of the Prime Minister shall be reported."

Any person who intends to operate a spent nuclear fuel processing business shall have his/her business designated by the competent Minister (Article 35 (2) of the Act), while the scope of "nuclear fuel processing business" is defined as the "processing of nuclear fuel materials used as fuel in a reactor or other nuclear fuel materials subjected to nuclear fission reaction for the purpose of research or experimentation, or separation thereof into nuclear fuel materials and other constituents by physical or chemical processing" in Article 2 (Definitions) Subparagraph (1)4 of the Act. As for the matters regarding the processing or disposal of spent nuclear fuel, the Minister of Science, ICT and Future Planning and the Minister of Trade, Industry and Energy are to consult the Commission and the heads of relevant Ministries and agencies on matters necessary for processing or disposal of spent nuclear fuel, and shall determine such matters following deliberation and resolution thereon by the Nuclear Energy Promotion Commission established under Article 3 of the Nuclear Energy Promotion Act.

Any person who intends to obtain a license or designation for a nuclear fuel cycle business must file an application for such license or designation with the required documents attached thereto (Article 35 (3) of the Act), and will be granted the license or designation if he/she satisfies the approval criteria (Article 36 of the Act). Licensed or designated facilities must be periodically inspected, and in case of failing to meet the approval criteria, corrective actions or supplementation may be ordered (Article 37 (1) and (2) of the Act). Also, if the license or designation was obtained by fraudulent means or the criteria are not met, the license or designation concerned may be cancelled or the business operation may be suspended (Article 38 of the Act).

(2) License for Use, etc. of Nuclear Fuel Materials

Article 45 of the「Nuclear Safety Act」, stipulates "Except the following persons, any person intending to use or possess nuclear fuel materials shall obtain a license from the Commission therefor, as prescribed by Presidential Decree. The same shall also apply to any alteration of permitted matters: Provided, That the alteration of any minor matters prescribed by Ordinance of the Prime Minister shall be reported: 1. Where the installer of a nuclear power reactor, the operator of a nuclear power reactor, the installer of a research reactor, etc. or the operator of a research reactor, etc. uses nuclear fuel materials for the business for which he/she has obtained a license therefor; 2. Where a nuclear fuel cycle business operator uses nuclear fuel materials for the licensed or designated business; 3. Where he/she uses nuclear fuel materials of the kind and quantity prescribed by Presidential Decree is used."

Any person intending to obtain a license must submit an application for the license to the Commission (Article 45 (2) of the Act) and will be granted a license if she/he meets the approval criteria (Article 46 of the Act). Every person who has obtained a license for use or possession of nuclear fuel materials must undergo an inspection every year and be ordered a corrective action or supplementation in accordance with the inspection results (Article 47 (1) and (2) of the Act), Also, if the licene was obtained by fraudulent means or the criteria are not met, the license or designation concerned may be cancelled or the business operation may be suspended (Article 48 of the Act).

3. Safety Regulations for Radioactive Waste Management Facilities

(1) Prior Approval of the Construction Site for Radioactive Waste Disposal Facility and Limited Works

Article 69 of the 「Nuclear Safety Act」 stipulates that Articles 10 (3) through (6) shall apply mutatis mutandis to every constructor and operator of radioactive wastes management facilities, etc. For management of radioactive wastes discharged from nuclear power plants, the most important prerequisite in the construction of a nuclear power plant is to "secure a construction site for a radioactive waste disposal facility." This is because the construction of a radioactive waste disposal facility is opposed by residents due to the NIMBY (Not In My Backyard) effect, despite the fact that it is associated with lower risks compared to nuclear power plants. Thus, it takes a long time to secure a construction site for a radioactive waste management facility. Considering this factor, a special act was enacted to provide for the procedure for securing a construction site for a radioactive waste processing facility, etc. prior to obtaining the necessary construction permit, while the Nuclear Safety Act requires that a prior approval be obtained based on a safety review of the site concerned.

Article 10 (3) of the 「Nuclear Safety Act」 stipulates that when a person who intends to construct a nuclear power reactor and relevant facilities applies for prior approval of the site before filing an application for a construction permit, the Commission may grant approval after review. Accordingly, any person who has obtained prior approval of the

site may execute the construction works for the installation of a radioactive waste facility to a limited extent after obtaining the approval of the Nuclear Safety and Security Commission (Article 10 (4) of the Act). The prior approval of the construction site and approval of limited works could be described as “dispositions” with the nature of “partial approval” for facilitating the preparation process for project implementation.

Accordingly, the reason a prior approval of the construction needs to be received from the Nuclear Safety and Security Commission before obtaining a construction license for a radioactive waste facility is the need to protect the safety of citizens in terms of their lives and bodies against the radiation that may be emitted from radioactive waste materials. Also, if the construction license application is rejected after the applicant fully prepares for the construction of a radioactive waste facility, which requires long-term preparation and construction work, the consequences would be very costly, and this is why the legitimacy of the construction site should be approved in advance. The objective of this legislation, therefore, is to ease the financial burden and burden of time on the business entity and to facilitate effective and adequate construction work.

(2) Permits for Construction and Operation of Radioactive Waste Management Facilities, etc. (Integrated Permits)

Article 63 of the「Nuclear Safety Act」stipulates that any person who intends to construct and operate facilities to store, process, and dispose of radioactive waste and supplementary facilities shall obtain a permit from the Nuclear Safety and Security Commission for the purpose of ensuring

public safety and preventing risks arising from radioactive waste facilities. Under this permit system, if the construction and operation approval criteria are satisfied, the construction and operation permits are granted simultaneously. In other words, unlike the construction permit for nuclear power plants, the permits for construction and operation of radioactive waste management facilities are granted under an integrated permit system.[9] The similarity between a multi-step permit system and an integrated permit system is that it aims to protect the lives and bodies of citizens against the risk factors arising from radioactive waste facilities. Applying an integrated permit system as such shortens the safety review period for business operators, which is economically advantageous. Thus, the justification for the permit system for the construction and operation of radioactive waste management facilities under the Constitution is realized based on the duty to protect national safety and is specified by laws. The basis for protecting the lives and bodies of citizens against radioactive waste management facilities is formulated through the integrated permit system for construction and operation in Article 63 of the 「Nuclear Safety Act」.[10]

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9) The approval procedure for large-scale national project facilities such as nuclear power plants, airports and high-speed railway is very complex, and the decision-making process also takes years. A multi-step approval procedure has been developed to ensure flexibility and predictability of the decision-making process, which is complex and time consuming. The multi-step approval procedure contributes to lowering the economic cost and alleviating investment risks for business operators as well as providing flexibility such as permitting the incorporation of newly developed technologies.

10) The constitutional legitimacy of the construction and operation permit (integrated permit) system for radioactive waste facilities arises from the value of ensuring safety for the lives and bodies of citizens. In other words, the value of protecting the lives and bodies of citizens is superior to those of business freedom, right to pursue happiness and property rights of radioactive waste facility operators and other entities of basic rights. Thus, under the 「Nuclear Safety Act」, the construction and operation permit system for radioactive waste facilities do not violate the principle of proportionality.

Article 63 of the「Nuclear Safety Act」stipulates that any person who intends to construct and operate facilities to store, process, and dispose of radioactive waste and supplementary facilities shall obtain a permit as prescribed by the Presidential Decree, and submit to the Commission an application form, accompanied by an environmental report, a safety analysis report, safety management regulations, descriptions of design and construction methods, a quality assurance plan on construction and operation, and other documents prescribed by Ordinance of the Prime Minister. There are plans to delete the provision requiring the submission of "descriptions of design and construction methods" and changing "safety management regulations" to "technical guidelines for operation" for the purpose of deleting unnecessary attachments and changing impractical attachments. Also, a single set of criteria is proposed in the Act for the construction and operation permit criteria for radioactive waste facilities.[11)]

11) According to Article 64 of the Act, the criteria for permits for construction and operation are as follows. First, the applicant shall have technical capabilities necessary to construct and operate radioactive wastes management facilities, etc. This is taking into account the fact that the construction and operation of radioactive waste facilities requires massive financial resources and a collection of advanced technologies. Second, the location, structure, equipment, and performance of radioactive waste management facilities, etc. shall meet the technical criteria prescribed by the Rules of the Commission, so as not to impede the protection of healthy, physical objects, and the general public from radiation damage caused by radioactive material, etc. This provision requires the submission of documents containing the information necessary for a safety review to ensure public safety against radioactive wastes. Third, the applicant shall meet the criteria prescribed by Presidential Decree to protect public health and the environment from disasters caused by radioactive materials, etc. generated in the course of constructing and operating radioactive wastes management facilities, etc. Fourth, the applicant shall have equipment and human resources prescribed by Presidential Decree.

(3) Inspection System for Radioactive Waste Management Facilities, etc.

Article 65 (1) of the 「Nuclear Safety Act」 stipulates that "Every person who has obtained a permit to construct and operate radioactive wastes management facilities, etc. pursuant to Article 63 (1) (hereinafter referred to as "constructor and operator of radioactive wastes management facilities, etc.") shall undergo inspections conducted by the Commission regarding the installation and operation of radioactive wastes management facilities, etc., the storage, processing, and disposal of radioactive wastes, and the metrical control of special nuclear materials, as prescribed by Presidential Decree." In other words, the Presidential Decree referred to in this provision distinguishes the inspections into pre-service inspections, regular inspections and inspections of disposal. Also, articles 101, 103 and 104 of the 「Enforcement Decree of the Nuclear Safety Act」 prescribe that the constructors and operators of radioactive waste management facilities, etc. must receive pre-service inspections, regular inspections and inspections of disposal. Of particular note, in order to dispose of radioactive wastes, the inspections of disposal must be received each time, as prescribed by the Commission. Article 93 of the 「Enforcement Decree of the Nuclear Safety Act」 provides for the matters related to applying for an inspection of the disposal of radioactive wastes.[12)]

12) The pre-service inspections and inspections of disposal of radioactive wastes referred to in Article 65 (1) of the 「Nuclear Safety Act」 are carried out in case of an impact on the safety of the lives and bodies of citizens. This is a (post-construction) inspection system for radioactive waste facilities established to help prevent radiation accidents that may potentially occur at radioactive waste facilities in advance, instead of simply being satisfied with handling radiation leakage accidents after the fact. Thus,

Thus, the pre-service inspections, regular inspections and inspections of disposal involve an administrative agency checking whether certain structures, equipment, devices, materials or actions, etc. of the facilities concerned satisfy the inspection criteria and allowing the use and implementation thereof only if the criteria are satisfied in order to ensure safety of the lives and bodies of citizens. In other words, the inspection system itself does not give rise to a certain legal effect, but actually is a set of prerequisites for the legal effect to arise. If the item under inspection fails to pass the inspection, the use and distribution thereof will be prohibited or such item cannot be employed in certain types of work.

Of particular note, the Enforcement Decree of the Act stipulates that the regular inspections be performed once a year. The structures, equipment and performance of radioactive waste disposal facilities must satisfy the technical criteria prescribed in Article 64 Subparagraph (2) and Article 68 (1) 1 of the Act and the storage, processing and disposal of radioactive wastes must satisfy the technical criteria prescribed in Article 68 (1) 2 in order to pass the inspection (Article 103 of the Enforcement Decree of the Act) and to continue the operation of the facility concerned.

Thus, the regular inspection system prescribed in the「Nuclear Safety Act」is a regulatory means to perform regular supervision during facility operation for the State to ensure safety to fulfill its duty to safeguard its citizens. The structures, equipment, and devices, etc. of radioactive waste disposal facilities cannot be maintained permanently in the state of its

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the (post-construction) inspeciton system is a regulatory means to fulfill the state's duty to protect the safety of the lives and bodies of citizens from the risks of radiation that can arise from radioactive waste facilities in modern society.

construction or manufacture. Such structures, equipment and devices become worn and deteriorated, and the radioactive waste facilities and structures may change from the time of their installation due to environmental factors such as a natural disaster. As a result, safety of dangerous facilities such as radioactive waste facilities and nuclear power plants cannot be ensured without continuous safety management. In other words, for continuous safety management, the State endeavors to ensure the safety of dangerous facilities such as radioactive waste management facilities through regular inspections. Regular inspections, which are carried out according to a designated cycle, are not actions voluntarily initiated by those concerned in radioactive waste facilities to ensure safety, but are actually carried out for the State to fulfill its safeguarding duty. Ultimately, when the regular inspection system is used as a means for the State to perform its safeguarding task, it is far more important than the construction and operation permit system for radioactive waste facilities.

(4) Safety Management Criteria for Radioactive Waste Management Facilities, etc.

Radioactive wastes, which are byproducts that are inevitably generated during the power generation process at nuclear power plants, must be stored and processed safely and ultimately be isolated from the ecosystem to protect the lives of citizens and the environment against radiation disasters arising from radioactive wastes. However, the extent to which the radioactive wastes should be isolated varies depending on the characteristics and hazard level of the radioactive waste. Accordingly, the disposal methods for radioactive wastes are largely classified into disposal methods for low- and intermediate-level wastes (LLW and ILW) and high-level wastes (HLW).

In Korea, the technical standards for the location, structure, installation, and performance of radioactive waste management facilities, etc. and storage, processing, or disposal of radioactive wastes referred to in Article 68 of the「Nuclear Safety Act」are based on the「Rules for the Technical Criteria for Radiation Safety Management, etc.」, with LLW and ILW required to be disposed of at near-surface disposal facilities[13], and HLW at deep disposal facilities.

According to Article 94 of the「Enforcement Decree of the Atomic Energy Act」, "radioactive wastes are those that produce an annual radiation exposure dose of over 10 mSv or a total radiation exposure dose of 1man-Sv for a group, according to the concentration for the type of nuclide determined by the Commission."[14] Accordingly, radioactive

13) For near-surface disposal, a flat site is selected for the construction of a concrete structure (storage) at which to dispose of the waste, and the vessel for the wastes are placed inside the structure before filling the gaps between the container with grout and aggregate. A concrete slab is laid in at the top and the disposal structure is closed with a multi-layer soil cover consisting of a low penetration layer and penetration layer. After the closure, a passage for inspection purposes is installed underground to monitor the potential movement of nuclides outside the disposal structure such as nuclide leakage. For near-surface disposals, a natural barrier or a manmade barrier at 30m underground is used for collection and disposal of radioactive wastes, and a manmade barrier is used to ensure safety. This disposal method is employed in Japan, France, the US and Spain. The advantages of this method include the relative easy construction of the disposal facilities, shorter construction period, lower operation and management costs, and safety of workers during operation. Also, it is easy to collect the wastes and take corrective measures in the event of an unexpected and abnormal accidents, of which the likelihood of occurrence is very low. In contrast, the downside includes the unavoidable large-scale shut-down of the site, difficulty in preventing access by humans, animals and plants, strong opposition by residents due to the exposure of the disposal facilities, safety risks in case of high groundwater level or high flow speed, and relatively high reliance on the long-term performance of manmade barriers (concrete structure, soil cover, etc.), thus requiring long-term management activities.

14) Nuclides with radioactivity are referred to as "radionuclides." Those existing naturally are called "natural radionuclides," while those produced from nuclear reactions are called

wastes are classified according to the radiation dose and nuclide, and the disposal method is varied taking into account the characteristics and risks associated with the radioactive waste concerned.

Article 70 (1) of the 「Nuclear Safety Act」 stipulates "No person shall dispose of any radioactive waste by dumping it into the sea." In other words, under the 「Nuclear Safety Act」, all radioactive wastes, regardless of whether the nuclide concentrations are above or below the threshold, cannot be dumped into the ocean, in accordance with the international standards.[15)]

Recently, an LLW/ILW disposal facility has been built in Gyeongju, Korea and is currently in operation. A cave for near-surface disposal has been created for operation as well.[16)]

"artificial radionuclides."

15) The method of disposing of radioactive wastes in space, ocean or glaciers in the South Pole involves many issues at the current science and technological level, and is problematic from the perspective of international law. The safety requirements for radioactive wastes are necessary for not only the current generation but future generations. Although it is impossible to know whether there will be people living in Korea a thousand or ten thousand years from now, but there is still a need for the Republic of Korea to determine the construction sites for radioactive waste facilities, taking into account the natural environment and the future generations that will live on Korean soil, within the scope allowed by practical reason of human beings and temporal scope determined by the nature of radioactive wastes (Lee Jong-young, "Diverse Possibilities of Permanent Disposal of Radioactive Wastes in Accordance with the Advancement of Science and Technology and the Legal Issues Thereof: Centering on Dumping in Space, Ocean Dumping and Disposal in the Glaciers in Antarctica" 「Research on the Environment Act」 Vol. 18 (Korean Environmental Law Association, 1996, pp. 271-291).

16) Cave disposal involves disposing of wastes in an underground disposal facility constructed after making a tunnel in a mountain, etc. or in an old mine. A cave disposal facility is comprised of multiple disposal caves located underground and passages that connect the caves with the ground surface. The pits are ventilated using an appropriate method during facility operation. After placing the waste inside the cave built for waste disposal purposes, the gap between the wastes and cave walls is filled with clay that has excellent radionuclide adsorption power or concrete is injected to

(5) Design Approval and Inspection System for the Packaging and Transport Vessels for Radioactive Materials, etc.

Article 76 (1) of the「Nuclear Safety Act」stipulates "When a nuclear energy-related business operator intends to manufacture containers for packing or transportation of radioactive materials, etc. of the quantity prescribed by Ordinance of the Prime Minister (hereinafter referred to as "transportation container") or intends to import the transportation containers manufactured in foreign countries, he/she shall obtain approval thereof from the Commission according to the criteria for design prescribed by Presidential Decree. The same shall apply to any proposed alteration thereof: Provided, That the alteration of matters prescribed as insignificant by Ordinance of the Prime Minister shall be reported to the Commission." Also, any person intending to obtain the approval shall submit an application for the approval of manufacturing transportation containers to

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build a single structure. Once the cave becomes full, the entrance is sealed with concrete, etc. Once all of the disposal caves are filled through the aforementioned process, the connecting passages and the entryway are sealed with concrete, etc. to completely isolate the facility with the outside world. Compared to the near-surface disposal method, cave disposal method is associated with higher construction costs and longer construction period in addition to the costly maintenance and management of the disposal facilities, relative difficulty in ensuring the safety of the workers during facility operation, and relative difficulty in taking water recovery and corrective measures in the event of an unexpected atypical accident (fire, etc.), even though the chance of occurrence is low. On the other hand, the advantages of cave disposal are as follows: it is easy to prevent access by unauthorized persons or infiltration by animals and plants; it is more readily accepted by the local residents due to its deep underground location; relatively fewer problems arising from groundwater flow as it is located deep underground where the groundwater flow is very slow; and the natural barrier plays a main role in securing long-term safety, thereby lowering reliance on long-term performance of manmade barriers and reducing the requirement for active monitoring after facility shutdown. In other words, it provides excellent protection and isolation of radioactive wastes from natural and artificial accidents and disasters.

the Commission, attached with the design data of the transportation containers, quality assurance plan concerning manufacturing, safety analysis report and other documents prescribed by Ordinance of the Prime Minister (Article 76 (2) of the Act).

As for the transport of radioactive materials, etc., safety of the transport and storage container and the transport thereof is the key issue. The transport and storage container is the main device that prevents radiation disaster in the event of an accident. For this reason, Article 112 (1) of the 「Enforcement Decree of the Nuclear Safety Act」 stipulates that a nuclear energy-related business operator who intends to manufacture or import containers for packing and transporting radioactive materials, etc. shall obtain approval for the design of the transport containers for each type, as prescribed by Ordinance of the Prime Minister.

The fabrication inspection system following design approval referred to in this provision is a post-completion inspection system for the transport container or packaging of radioactive materials, etc. Post-completion inspections involve a safety review of the container in a specialized and technical manner, and thus must be performed by a specialized institution. Post-completion inspections are performed to check whether the design and the actual container match completely under the administrative act.

「Regulations on the Packaging and Transport of Radioactive Materials, etc.」 provide for the technical criteria for transport containers (articles 22 through 36). In addition, the 「Rules for the Technical Criteria for Radiation Safety Management, etc.」 set forth the matters in relation to the transport of radioactive materials for each type (Article 86), labeling (Article 99) and cover (Article 11) in Chapter 5 Safety Management of the Packaging and Transport of Radioactive Materials, etc.

4. Regulations on Radioactive Isotopes and Radiation-generating Devices

(1) Licensing System for Use, etc. of Radioisotopes and Radiation-generating Devices

Article 53 (1) of the「Nuclear Safety Act」stipulates "Any person intending to produce, sell, use (including possession and handling: hereinafter the same shall apply) or make a mobile-use of radioisotopes or radiation generating devices (hereinafter referred to as "radioisotopes, etc.") shall obtain a license from the Commission therefor as prescribed by Presidential Decree. The same shall also apply to any proposed alteration of licensed matters: Provided, That a change of place for temporary use and any proposed alteration of other matters prescribed as insignificant by Ordinance of the Prime Minister shall be reported."

In addition, Article 53 (2) of the Act stipulates "Notwithstanding the provisions of paragraph (1), any person intending to make use or make a mobile-use of the sealed radioisotope for the purpose, or the quantity of which is smaller than what is, prescribed by Ordinance of the Prime Minister, or a radiation generating device for the purpose, or the quantity of which is smaller than what is, prescribed by Ordinance of the Prime Minister, shall report to the Commission thereon as prescribed by Presidential Decree."

Accordingly, any person intending to obtain the license shall submit an application for the license to the Commission, attached with a safety analysis report, quality assurance plan, radiation safety report, safety management regulations, and other documents prescribed by Ordinance of

the Prime Minister, and any person intending to file a report as referred to in paragraph (2) shall submit a report to the Commission, attached with documents prescribed by Ordinance of the Prime Minister: Provided, That the submission of the safety analysis report and the quality assurance plan shall be limited to those who intend to obtain the license for production. (Article 53 (3) of the Act).

The criteria for the license prescribed in Article 55 (1) of the 「Nuclear Safety Act」 are as follows: 1.Location, structure and installation of facilities for production and facilities for use, etc. shall meet the technical criteria prescribed by the Rules of the Commission; 2. The radiation exposed dose generated by radioisotopes, the contaminated materials thereby or radiation generating devices shall not exceed the dose limit prescribed by Presidential Decree; 3. The performance of radioisotopes, etc. to produce and the details of the quality assurance plan thereof shall meet with the criteria determined and published by the Commission; 4. The applicant shall have equipment and human resources prescribed by Presidential Decree.

(2) Radiation Safety Managers

Article 53-2 (1) of the 「Nuclear Safety Act」 provides for the matters regarding radiation safety managers. In other words, radiation managers who are responsible for inspecting whether the safety management regulations under Article 53 (3) and the technical criteria under Article 59 (1) are complied with, taking measures to prevent radiation damage under Article 91 for radiation workers or other persons having access to radiation controlled areas, giving recommendations to licensed users and reported users to take measures for radiation safety management, and

taking any other measures necessary for radiation safety management should be appointed in accordance with the Presidential Decree, and such appointment must be reported to the Commission before commencing the use of radioisotopes, etc. The same also applies to any alteration of reported matters.

If a radiation safety manager neglects any of his/her duties referred to in Article 53-2 (1), the Commission may require the relevant licensed user or reported user to dismiss the radiation safety manager from office (Article 53-2 (2)). Upon receipt of the demand for dismissal under paragraph (2), a licensed user or a reported user shall immediately dismiss the radiation safety manager and appoint a new radiation safety manager unless any justifiable ground exists and shall file reports on such dismissal and appointment with the Commission by no later than 30 days after such dismissal (Article 53-2 (3)).

Also, neither a licensed user nor a reported user shall appoint any person dismissed under paragraph (3) as a radiation safety manager within one year of his/her dismissal. In addition, any licensed user, any reported user, any radiation worker, and any person having access to a radiation controlled area shall comply with the radiation safety manager's measures and recommendations for radiation safety management. (Article 53-2 (4)).

(3) Registration of Business Agent

Article 54 (1) of the「Nuclear Safety Act」stipulates that any person intending to perform collection, processing and transportation of radioisotopes and radioactive waste, preparation of a safety report on radiation and

safety management regulations, supervision on the installment of facilities for use, etc., radiation safety management, and other duties related to the safety management of radiation and prevention from disasters prescribed by Ordinance of the Prime Minister on behalf of any licensed user or reported user shall register with the Commission. Also, when a business agent intends to alter any registered matters, he/she shall report to the Commission thereon.

The criteria for registration on behalf of an approved or registered user are as follows: the applicant shall have the technical capabilities prescribed by Ordinance of the Prime Minister as necessary to conduct the duties of the agency; the applicant shall have the equipment and human resources prescribed by Presidential Decree; and the scope of duties of the agency and agency regulations shall comply with the criteria prescribed by Ordinance of the Prime Minister.

(4) Inspection System

Article 56 (1) of the 「Nuclear Safety Act」 stipulates that each licensed user and business agent shall have the production, sale, use and mobile-use of radioactive isotopes, etc. and duties of the agency inspected by the Nuclear Safety and Security Commission as prescribed by Presidential Decree. However, exemption from facility inspections is granted in the following cases: 1. Where storage facilities for radioisotopes (hereinafter referred to as “unsealed radioisotopes”), other than sealed radioisotopes, are changed; 2. Where storage facilities for radioactive wastes (excluding wastes sources) are changed; 3. Where facilities for use, etc. are installed in a place for temporary use; 4. Where facilities for use,

etc. are additionally installed or changed to use radioisotopes, etc. subject to reporting pursuant to Article 53 (2) of the Act; 5.Where radiation equipment which has passed a manufacturing inspection under Article 94 (1) is installed without altering existing facilities; 6. Where the synchrotron beamline is additionally installed in the synchrotron light source or the structure is altered and the Commission deems it unnecessary to inspect the facilities; 7. Where facilities for keeping radiation-generating devices are installed or changed.

Article 56 (2) of the「Nuclear Safety Act」stipulates that where the licensed user or business agent has failed to meet the criteria for the license as referred to in Article 55 (1) or the criteria for the registration as referred to in Article 55 (2), or where the licensed user or business agent has violated the safety management regulations as referred to in Article 53 (3) or the agency business regulations under Article 54 (3), the licensed user or business agent may be ordered to take corrective or supplementary measures.

(5) Cancellation, etc. of Licenses, etc. for Production, Sale, Use or Mobile-Use

Article 57 (1) of the「Nuclear Safety Act」stipulates that when a licensed user, reported user or business agent falls under any of the following circumstances, the Commission may cancel the relevant license or registration, or order the suspension of business or prohibition of use (limited to reported users) for a fixed period not exceeding one year: Where he/she has obtained the license, filed a report or registered his/her business by fraudulent or other illegal means; Where he/she has failed to

commence the licensed use or business within the period prescribed by Presidential Decree or has suspended the business continuously for at least one consecutive year without justifiable grounds; Where he/she has altered any licensed, reported, or registered matter without obtaining the license for alteration or filing a report on alteration pursuant to the latter parts of paragraphs (1) and (2) of Article 53, or Article 54 (2); Where he/she falls under any of subparagraphs 1, 2 and 4 of Article 14 which are applied mutatis mutandis in Articles 53 (4) and 54 (4): Provided, That the same shall not apply where the representative of a corporation who has fallen under said cause is replaced within three months; Where he/she has failed to meet the criteria for license or registration under Article 55; Where he/she has violated any of the orders issued under Article 56 (2), 59 (2), 92 (2) or 98 (1) and (3); Where he/she has violated Article 59 (3), 70, 94, 96 or 106 (1); or where he/she has violated the condition of license imposed under Article 99. However, where he/she has obtained the license, filed a report or registered his/her business by fraudulent or other illegal means, or the case falls under Article 14 Subparagraph (1), 2, or 4 applied mutatis mutandis from Article 53 (4) ad Article 54 (4), the Commission must cancel the relevant license or registration.

Also, Article 57 (2) of the Act stipulates that where the Commission shall order the suspension of business or prohibition of use pursuant to paragraph (1), it may impose a penalty surcharge not exceeding 500 million won in lieu of the suspension of business or prohibition of use. In other words, when a person liable to pay a penalty surcharge under paragraph (2) fails to pay it by the payment deadline, the Commission shall collect it in the same manner as delinquent national taxes are

collected, or suspend his/her business or prohibit his/her use under paragraph (1) after cancelling the imposition of the penalty surcharge under paragraph (2).

5. Safety Regulations on Decommissioning of Nuclear Power Plants, etc.

(1) The Main Content of「Nuclear Safety Act」enacted on July 25, 2011

The decommissioning of nuclear power reactors and relevant facilities refers to the final stage of the safety management process concerning the entire life cycle of a nuclear power plant, which includes selection of construction site, design/engineering, construction, operation and decommissioning, performed to assure safety of lives and bodies of citizens and protect the environment against radioactive materials after terminating the operation of the said nuclear power facilities and relevant facilities. Nuclear power reactors and relevant facilities can be decommissioned by delayed decommissioning including sealing and immediate decommissioning. delayed decommissioning involves closing the nuclear reactor for around 30 to 60 years and delaying the decommissioning process, taking into account the half-life of radioactive materials, because the radioactive waste disposal site is not ready or it is difficult to process the radioactive waste concerned; however, this method is not preferred as it is costly to manage the nuclear power plant and there is high uncertainty in relation to the economic aspect and responsibility of the delayed decommissioning process at a later time. In contrast, immediate decommissioning involves a permanent shutdown of

the nuclear power plant concerned and immediate decommissioning thereof after a designated time period. It involves disposal of the radioactive waste generated, and completion of the decommissioning process as soon as possible, which leads to lower safety management and maintenance costs. Sealing is a type of a delayed decommissioning method performed in case of a need for long-term storage of radioactive materials in a completely sealed state in a structure such as concrete because it is impossible to immediately decommission the facility due to the high risk of radiation, as was the case with Chernobyl nuclear power plant in the former Soviet Union. It is characterized by the presence of risk of radiation and high maintenance and management costs.

It has been reported that, as of the end of 2011, there are around 129 nuclear power plants for which nuclear reactor closure and decommissioning procedure has been undertaken following a permanent shutdown among the countries in which nuclear power plants are in operation. To be more specific, the decommissioning process has been experienced by the nations that were one of the first to operate nuclear power plants including the USA (28 reactors shut down), Germany (19 reactors shut down) and Japan (9 reactors shut down), and the sites for a total of 17 reactors including 3 reactors in the USA and 2 reactors in Germany and Japan each have been opened to the public without restriction after decommissioning and deconstruction, which demonstrates the possibility of safe decommissioning. In the case of Korea, two nuclear reactors used for research purposes were shut down in 1995, and the decommissioning work was commenced in 1997. The second nuclear reactor, even the body, was completely decommissioned in 2005, whiel the first nuclear

reactor, including the auxiliary and surrounding facilites, was decommissioned.

As such, the regulations on the decomissioning of nuclear power reactors and relevant facilities are specified in Article 28 of the「Nuclear Safety Act」, which was separated from the original act on July 25, 2011. In other words, Article 28 (1) of the「Nuclear Safety Act」stipulates that the operator of a nuclear power reactor (KHNP) shall obtain approval from the Commission, as prescribed by Presidential Decree, to decommission the nuclear power reactor and relevant facilities. The same shall also apply to any alteration of any term or condition of such approval: Provided, That where he/she intends to alter any minor matter[17] prescribed by Ordinance of the Prime Minister, he/she shall report thereon to the Commission.

Article 22 (1) of the「Enforcement Decree of the Nuclear Safety Act」stipulates that "Each operator of a nuclear power reactor who intends to obtain approval to decommission a reactor facility pursuant to the fore part of Article 28 (1) of the Act shall prepare an application for approval for decommissioning, provided in Attached Form No. 13, and attach the nuclear power reactor decommissioning plan thereto, to be submitted to the Commission." paragraph (2) of the Article, on the other hand, stipulates that "Where a person granted approval to decommission a reactor facility intends to alter approved matters pursuant to the latter

17) "Minor matters" prescribed in the rules of the Commission include the name and address of the person obtaining approval (in the case of a corporation, its name and address and the name of the CEO). In the case of altering the name and address of the business establishment at which a nuclear reactor facility is in operation, the person attempting to report a change should submit to the Commission a report, with evidentiary documents attached thereto, within 30 days of the occurrence of the change.

part of Article 28 (1) of the Act, he/she shall prepare an application for approval for alteration, provided in Attached Form No. 14, and attached a comparison table showing the before and after, to be submitted to the application with the Commission.

paragraph (2) of the Article stipulates that when a nuclear epower reactor operator intends to decommission a nuclear power reactor and relevant facilities, the decommissioning plan should include the method and schedule for the decommissioning of nuclear power reactors and relevant facilities, method of removing radioactive materials and the consequent contaminants, method of processing and disposing of radioactive wastes, measures to prevent disasters from radiation, and environmental impact of radioactive materials, etc. and the countermeasures, a quality assurance plan in relation to the decommissioning of the nuclear power reactor and relevant facilities, and other matters prescribed by the Commission.

paragraph (3) of the Article stipulates that the Commission shall verify and examine the status of decommissioning of the nuclear power reactor and relevant facilities before the decommissioning of the nuclear power reactor and relevant facilities is completed. Paragraph 4 of the Article stipulates that where the operator of a nuclear power reactor (KHNP) fails to conduct decommissioning in accordance with a decommissioning plan or the decommissioning is found to be incomplete, contrary to the relevant decommissioning completion report as a result of verification or examination or inspection, the Commission may issue an order for correction or supplementation.

(2) The Matters Related to Decommissioning in the 「Nuclear Safety Act」 Amended on January 20, 2015

Despite the fact that a total of 24 nuclear power plants were in operation in September 2015, the Fukushima Daiichi nuclear disaster in Japan amplified the concerns and anxiety regarding Kori-1 in operation after an extension of the license period. Of the nuclear reactors in operation in Korea, Kori-1 was introduced in 1978 and is still in operation as of September 2015. Although the design service life was set as 30 years at the time of its construction, it has been in operation for 37 years. On June 16, 2015, KHNP decided to operate Kori-1 until June 2017, and subsequently, the government decided to permanently shut down Kori-1 and prepare for decommissioning. The government plans to cool the spent nuclear fuel from Kori-1 from 2018 to 2022, perform contaminant removal and decommissioning of the reactor from 2022 to 2028, and complete the business closure procedure by 2030. Considering it takes 15 years to remove contaminants from the soil of the site and building surfaces, the restoration process for the power plant site is expected to be completed around 2045.[18)]

Accordingly, on January 20, 2015, a significant part of the 「Nuclear Safety Act」 regarding decommissioning was amended. In relation to the decommissioning of nuclear reactors and relevant facilities, the nuclear power generation business operator (KHNP) is required to submit a

18) Decommissioning of a nuclear power plant is deemed a tremendous work that takes around 30 years as it involves permanent shutdown (cooling of spent nuclear fuel), preparation for decommissioning, decontamination, decommissioning (of the core facilities, secondary auxiliary systems, structural facilities), processing of radioactive wastes, and restoration of the nuclear power plant site.

decommissioning plan before applying for construction and operation permit, and to renew the plan periodically in order to allow the Nuclear Safety and Security Commission to inspect the decommissioning process thoroughly in advance, thereby easing public anxiety and concerns regarding post-shutdown management of nuclear power plants and gaining more public trust in regard to nuclear power plant operation.

As for the main matters regarding decommissioning in the 「Nuclear Safety Act」, Article 2 Subparagraph (2)4 defines "decommissioning" as "all activities done by a person who has obtained an operating license for a nuclear reactor and relevant facilities for nuclear power generation, or research or education purposes, or a person has obtained a license or has been designated for a nuclear fuel cycle business to be exempt from the application of this Act by demolishing facilities and sites, or by removing radioactive contamination after permanently suspending the operation of facilities licensed or designated this Act."

Articles 10 and 20 of the 「Nuclear Safety Act」 as well as articles 30, 30-2 and 35 of the Act require the submission of a decommissioning plan to the Nuclear Safety and Security Commission for an operating license for a nuclear power plant and a research-purpose nuclear reactor, respectively, or for approval or designation as a nuclear fuel cycle business. Article 92-2 of the Act, on the other hand, requires every operator of a nuclear power reactor, every operator of a research nuclear reactor, and every operator of a nuclear fuel cycle facility to periodically update his/her plan to decommission the relevant nuclear reactor, relevant facilities, and nuclear fuel cycle facility, and report the updated plan to the Commission.

Accordingly, Article 28 (1) of the「Nuclear Safety Act」stipulates that "The operator of a nuclear power reactor shall obtain approval from the Commission, as prescribed by Presidential Decree, to decommission the nuclear power reactor and relevant facilities. The same shall also apply to any alteration of any term or condition of such approval: Provided, That where he/she intends to alter any minor matter prescribed by Ordinance of the Prime Minister, he/she shall report thereon to the Commission." Also, in relation to the approval of decommissioning of nuclear reactor facilities, Article 41-2 of the Enforcement Decree of the Act prescribes that "Each operator of a nuclear power reactor who intends to obtain approval to decommission a reactor facility pursuant to the fore part of Article 28 (1) of the Act shall prepare an application for approval for decommissioning, as prescribed by Ordinance of the Prime Minister, and file the application with the Commission within five years from the date the reactor facility is permanently suspended upon obtaining permission to alter his/her license concerning permanent suspension under Article 21 (2) of the Act."

As for the approval criteria for the decommissioning plans, the decision on approving the plan is made based on the criteria set forth from Article 85-2 to Article 87-17 of the "Rules for the Technical Criteria for Nuclear Reactor Facilities, etc.". paragraph (2) of the Article, on the other hand, stipulates "A person who intends to obtain approval shall file an application for approval with the Commission, accompanied by a plan to decommission the relevant nuclear fuel cycle facility, and the documents prescribed by Ordinance of the Prime Minister."

In addition, Article 28 (3) of the「Nuclear Safety Act」prescribes that "The operator of a nuclear power reactor shall report on the status of

decommissioning of the nuclear power reactor and relevant facilities, to the Commission, as prescribed by Ordinance of the Prime Minister.[19] In such cases, the Commission shall verify and examine the status of decommissioning of the nuclear power reactor and relevant facilities."

Article 28 (4) to (7) of the Act prescribe that "the operator of a nuclear power reactor report to the Commission upon completing decommissioning of a nuclear power reactor and relevant facilities[20]; where decommissioning of a nuclear power reactor and relevant facilities is completed, the Commission shall conduct an inspection[21], and where the operator of a nuclear power reactor fails to conduct decommissioning in accordance with a decommissioning plan or the decommissioning is found to be incomplete, contrary to the relevant decommissioning completion report as a result of verification or examination, or inspection, the Commission may issue an order for correction or supplementation."

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19) Article 23-2 (1) of the 「Enforcement Decree of the Nuclear Safety Act」 prescribes that "a person who needs to report the decommissioning status of a nuclear reactor facility to the Commission shall report on the decommissioning status of the nuclear reactor facility, removal status of radioactive contamination, radiation safety management, and radioactive waste management status to the Commission semi-annually."

20) Article 23-3 of the 「Enforcement Decree of the Nuclear Safety Act」 stipulates that "After completing the decommissioning of a nuclear reactor facility, a decommissioning completion report, with a final site status report attached thereto, with information on the decommissioning strategies and process, the status of the nuclear reactor facility and site before and after decommissioning, the final radiation and radioactivity status and the radioactive waste management status, the radiation dose exposed to the workers involved in the decommissioning process, should be submitted to the Commission.

21) Article 23 (5) of the 「Enforcement Decree of the Nuclear Safety Act」 prescribes that when decommissioning of a nuclear reactor facility is completed, the Commission shall check whether the decommissioning was performed in accordance with the decommissioning plan, whether the state of decommissioning completion conforms to the decommissioning completion plan pursuant to Article 28 (5) of the Act, and whether the content of the final land state report submitted pursuant to Article 23-4 conforms to the reuse standards for land and remaining building prescribed by the notice issued by the Commission.

In addition, Article 28 (8) of the Act stipulates that “upon completing an inspection, the Commission shall give written notice to the operator of a nuclear power reactor and relevant facilities that his/her license to operate the nuclear power reactor and relevant facilities has been terminated.” Furthermore, “where the Commission gives written notice to the operator of a nuclear power reactor, it may impose conditions regarding the reuse of the site after completion of decommissioning the nuclear power reactor and relevant facilities, if necessary for preventing disasters due to radiation and for public safety.”

Moreover, in relation to decommissioning of nuclear facilities, Article 103 of the「Nuclear Safety Act」was amended so that resident opinions be collected in regard to the draft of the decommissioning plan for decommissioning of a nuclear reactor for power generation or research purposes.

As such, prior to the amendment of the provisions regarding decommissioning in the「Nuclear Safety Act」, on January 20, 2015, it had failed to devise a safety management system for the entire life cycle of nuclear power plants requiring periodic updates from construction license to operation and decommissioning, and despite the fact that the Act could have been amended much earlier, the amendments regarding the safety management, decommissioning and closure of nuclear power plants were made only in January 2015 due to the heavy focus on developing nuclear power. Such delay will consequently put the burden on the future generations, and this is highly regrettable.

Section 4 The Main Content of the 「Act on the Establishment and Operation of the Nuclear Safety and Security Commission」

<The Content of the Act on the Establishment and Operation of the Nuclear Safety and Security Commission>

CHAPTER Ⅰ GENERAL PROVISIONS	Article 1 (Purpose) Article 2 (Principle of Operation)
CHAPTER Ⅱ ESTABLISHMENT, ETC. OF NUCLEAR SAFETY AND SECURITY COMMISSION	Article 3 (Establishment of Commission) Article 4 (Composition, etc. of Commission) Article 5 (Appointment and Commissioning, etc. of Commission Members) Article 6 (Chairperson) Article 7 (Term of Office for Commission Members) Article 8 (Guarantee of Status, etc.) Article 9 (Prohibition of Concurrent Holding of Office, etc.) Article 10 (Grounds for Disqualification)
CHAPTER Ⅲ ADMINISTRATIVE AFFAIRS OF COMMISSION	Article 11 (Administrative Affairs of Commission) Article 12 (Matters subject to Deliberation and Resolution by Commission)
CHAPTER Ⅳ OPERATION OF COMMISSION	Article 13 (Meetings) Article 14 (Exclusion, Challenge, Evasion of Commission Members) Article 15 (Establishment of Special Committee) Article 16 (Annual Report)

	Article 17 (Secretariat) Article 18 (Duty of Integrity) Article 19 (Penal Provisions)

1. Purpose of Legislation

The purpose of the 「Act on the Establishment and Operation of the Nuclear Safety and Security Commission」 was to protect people from risks of radioactive disasters in generation and use of nuclear energy and contribute to public safety and environmental conservation by establishing the Nuclear Safety and Security Commission.

2. Establishment, etc. of the Nuclear Safety and Security Commission

Article 3 (1) of the 「Act on the Establishment and Operation of the Nuclear Safety and Security Commission」 provides for the establishment of the Nuclear Safety and Security Commission under the Prime Minister; however, at the time of enactment on July 25, 2011, the Nuclear Safety and Security Commission was to be established under the President. Later, along with the restructuring of the government organization, the affiliation of the Nuclear Safety and Security Commission was changed from that of the President to the Prime Minister. This occurred with the amendment of the 「Act on the Establishment and Operation of the Nuclear Safety and Security Commission」 as Act No. 11715 on March 23, 2013 to ensure the independence of the Commission and to run it more efficiently.

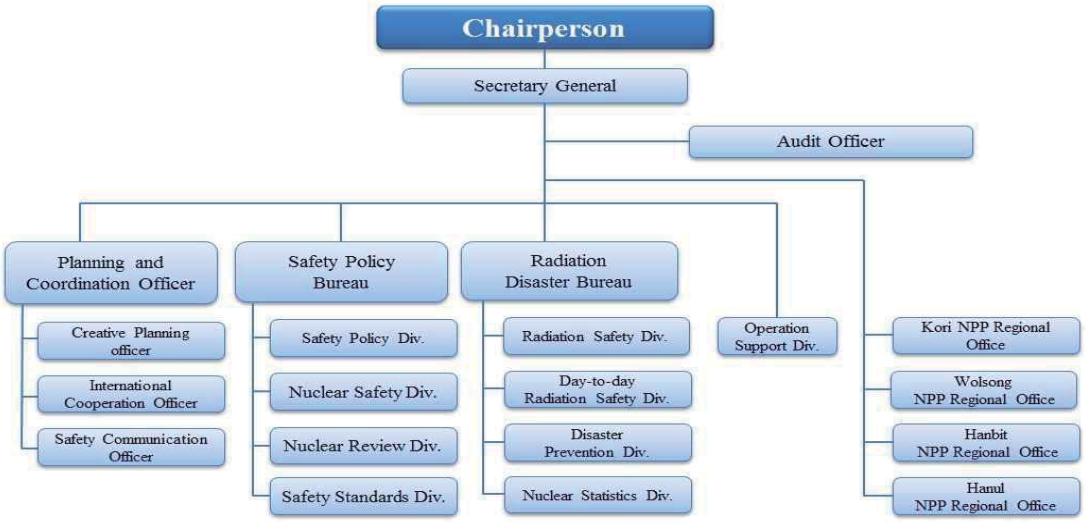
Accordingly, Article 3 (2) of the 「Government Organization Act」 stipulates that the Nuclear Safety and Security Commission "be deemed a central administrative agency under Article 2 of the Government Organization Act:: Provided, That Article 18 of the Government Organization Act shall not apply to the matters regarding the permit, re-permit, authorization, approval, registration, revocation, etc. in regard to users of nuclear energy under subparagraph 5 of Article 12; matters regarding the election of executives of the Korea Institute of Nuclear Safety and the appointment of its president under Articles 9 (4) and 11 (2) of the Korea Institute of Nuclear Safety Act; matters regarding the approval of executives of the Korea Institute of Nuclear Nonproliferation and Control under Article 6 (5) of the Nuclear Safety Act; and other matters specified by Presidential Decree as necessary for the guarantee of independence in safety management of nuclear energy."

3. Matters for Deliberation and Resolution by the Commission

Article 12 of the 「Act on the Establishment and Operation of the Nuclear Safety and Security Commission」 prescribes that the Commission shall deliberate on and reach resolutions on the synthesization and coordination of matters regarding the safety management of nuclear energy; matters regarding the establishment of comprehensive plans for the safety of nuclear energy under Article 3 of the 「Nuclear Safety Act」; matters regarding the regulation of nuclear materials and nuclear reactors; matters regarding the defense against hazards caused by radioactive exposure in the use of nuclear energy; matters regarding the permit, re-permit, authorization, approval, registration, revocation, etc. in regard to users of nuclear energy; matters regarding measures against prohibited

activities of users of nuclear energy and the imposition of penalty surcharges; matters regarding estimation of and an allocation plan for expenses for the safety management of nuclear energy; matters regarding surveys, tests, research, and development in regard to the safety management of nuclear energy; matters regarding fostering and training of researchers and engineers for the safety management of nuclear energy; matters regarding the safety management of radioactive waste; matters regarding countermeasures against radioactive disasters; matters regarding international cooperation for the safety of nuclear energy; matters regarding the formulation and execution of the budget of the Commission; matters regarding the enactment, amendment, and repeal of relevant Acts, subordinate statutes, and the Commission rules; and matters specified by this Act or other Acts as matters subject to deliberation and resolution by the Commission.

<Organization chart of the Nuclear Safety and Security Commission>[22)]



22) http://www.nssc.go.kr/nssc/nsscinfo/organization/organogram.jsp

4. Matters Related to the Operation of the Committee

Article 13 (1) of the 「Act on the Establishment and Operation of the Nuclear Safety and Security Commission」 stipulates that a meeting of the Commission shall be convened by the Commission Chairperson when two or more Commission members so request: Provided, That the Commission Chairperson may convene a meeting in his/her sole discretion. Also, a meeting of the Commission shall adopt a resolution by an affirmative vote of the majority of incumbent members, and any Commission member may propose an agenda item. In principle, meetings of the Commission shall be open to the public. The Commission shall prepare and preserve meeting minutes, as prescribed by the Commission rules. The meeting may be closed to the public by a resolution of the Commission in case there are concerns of threats to national safety and security, there are matters that are classified as confidential or restricted information in accordance with other acts, there are concerns of threats to the interests of or defamation to an individual, corporation or organization, there are concerns of significant hindrance to ensuring fairness of the job performance as the matters pertain to supervision, audit and/or human resources management, etc. (Article 13 (2), (3) and (4) of the Act).

Recently, the government of the Republic of Korea decided to provide for specific matters regarding the hearing of a meeting and disclosure of meeting minutes, etc. in the rules of the Nuclear Safety and Security and legislate the provision regarding the hearing of a meeting of the Commission based on the fact that meetings can be run arbitrarily. This assures that the public’s right to know is upheld. Accordingly, Article

13-3 (1) of the 「Act on the Establishment and Operation of the Nuclear Safety and Security Commission」 stipulates that anyone wishing to attend a meeting of the Commission can do so by obtaining the approval of the Chairperson, and Article 13-3 (2) of the Act provides for matters allowing the Chairperson to order an attendee to leave the meeting in order to maintain order.

Article 15 (1) of the 「Act on the Establishment and Operation of the Nuclear Safety and Security Commission」 stipulates that if it is necessary to seek working-level advice on administrative affairs of the Commission, carry out preliminary review on matters subject to deliberation and resolution, or efficiently carry out administrative affairs delegated by the Commission, the Commission may establish a special committee under its jurisdiction, and that the special committee be comprised of up to 15 members including one chairperson (Article 4 of the Enforcement Decree of the Act).

Article 16 (1) of the 「Act on the Establishment and Operation of the Nuclear Safety and Security Commission」 prescribes that the Commission shall submit a report on the Commission's performance of affairs for each fiscal year to the National Assembly within three months after the end of each fiscal year. Also, the Commission shall publish the report under paragraph (1): Provided, That the Commission may opt not to publish by resolution, if there is a reasonable ground to believe that publishing the report is not proper.

Section 5 Sub-conclusion

The 「Nuclear Energy Promotion Act」 provides for matters related to the research, development, production and use of nuclear energy, and to

the promotion of nuclear energy business. Of particular note, the key matters set forth in the 「Nuclear Energy Promotion Act」 include the establishment of the Nuclear Energy Promotion Commission, formulation and implementation of comprehensive plans for the promotion of nuclear energy, research and development of nuclear energy, and a nuclear energy fund to secure financial resources for nuclear energy research and development.

The 「Nuclear Safety Act」 sets forth the matters related to the safety regulations for nuclear power plants, radioactive waste management facilities, and transport of radioactive (waste) materials. To be more specific, the safety provisions are in regard to the prior approval of construction site and limited works, construction and operation permits for nuclear power plants, standard design approval, inspections, periodic safety reviews, permit for construction and operation (integrated permit) of radioactive waste management facilities, etc., pre-service inspection, regular inspections, quality assurance inspections, reporting of transport, approval of packaging and transportation containers, transportation inspections and container inspections, etc.

Of particular note, compared to the brief provisions on decommissioning in the past, the present 「Nuclear Safety Act」, which was amended on January 20, 2015, provides for detailed and progressive provisions through delegation provisions. As a result, an improvement was made to establish a safety management system for the entire life cycle of nuclear power plants from construction to operation, decommissioning and closure.

Also, in accordance with the 「Nuclear Safety and Security Commission Notice No. 2015-8」, a decommissioning plan for nuclear energy usage facilities must be prepared prior to the decommissioning process, and the

terms “immediate decommissioning” and “delayed decommissioning” were defined. Specific measures to prepare the decommissioning plan are outlined in the General Drafting Guidelines and an attached table. In addition, the amended Act takes a major step forward from the previous legal measures on decommissioning and closure of nuclear power plants in a sense that it provides for matters related to the submission and supplementation of a draft of the final decommissioning plan and periodic updating thereof.

Moreover, there is a need to resolve the issue of whether the nuclear business operators are actually appropriating funds for the decommissioning and closure of their nuclear power plants, or such are merely written in books. The reason is that countries using nuclear energy such as the USA, UK, Germany and France have decommissioned and closed down nuclear power plants using the appropriation fund, but the Republic of Korea has no such experience and must begin the decommissioning process in 2017.

A master plan of the government on managing spent nuclear fuel and securing a disposal facility for HLW proposes a plan to build a disposal facility by 2051 in accordance with the Recommended Guidelines issued by the Public Engagement Commission on Spent Nuclear Fuel Management and operate a HLW disposal facility for the disposal of spent nuclear fuel, which is currently stored within the nuclear power plant sites. It also proposes to secure a construction site for a permanent disposal facility for spent nuclear fuel, classified as HLW, by 2021, and to build underground research laboratories (URL) for licenses and approvals within the disposal facility site by 2023 to perform empirical research. Of particular note, in the Republic of Korea, there are currently

no national policies in regard to how to treat and manage spent nuclear fuel, presently placed in wet storage within the nuclear reactor, after Kori nuclear reactor is permanently shut down in June 2017. As such, the fact that there is an absence of a clear national policy that has been established in connection with the spent nuclear fuel policy on whether to proceed with a final disposal or interim storage of the spent nuclear fuel, and this is a major problem. Thus, the related legislations must be continually amended and supplemented to enhance safety and seamlessly conduct the project in accordance with the master plan prescribing that the facilities for long-term storage of spent nuclear fuel be extended until the permanent disposal thereof.

In relation to the provisions on decommissioning in the current 「Nuclear Safety Act」, which was amended on January 20, 2015, there is a need to discuss how to establish the relationship of the environmental impact assessments of radioactivity under the 「Environmental Impact Assessment Act」, which could be noted as a problem when it is amended at a later date. In addition, Article 28 (9) of the 「Nuclear Safety Act」 stipulated that "where the Commission gives written notice to the operator of a nuclear power reactor, it may impose conditions regarding the reuse of the site after completion of decommissioning the nuclear power reactor and relevant facilities, if necessary for preventing disasters due to radiation and for public safety." As such, the provision allowing the imposition of "conditions regarding the reuse of the site after completion of decommissioning" is problematic from the perspective that excess restrictions may be applied based on an uncertain concept of "public safety and radiation disaster prevention."

Prior to the catastrophic nuclear disaster in Fukushina, Japan on March 11, 2011, the Nuclear Safety and Security Commission was established under the jurisdiction of the Minister of Science and Technology, in accordance with Article 5 of the 「Atomic Energy Act」 in the Republic of Korea, and this did not assure the independence of the Commission as a regulatory institution. Accordingly, the Korean government established the Nuclear Safety and Security Commission following the Fukushima nuclear disaster in October 2011 to effectually separate the nuclear safety regulation system and the nuclear usage and promotion system. Through these efforts, the international standards were complied with, and the independence of the nuclear safety regulations was secured. Further, in order to protect citizens from radiation disasters that may potentially arise from the production and use of nuclear energy and to contribute to public safety and environmental conservation, the 「Act on the Establishment and Operation of the Nuclear Safety and Security Commission」 was enacted. Of particular note, the key matters in the 「Act on the Establishment and Operation of the Nuclear Safety and Security Commission」 included the provisions on the establishment of the Commission (Article 3), composition of the Commission (Article 4), term of office for Commission members and guarantee of status (articles 7 and 8), administrative affairs of the Commission and matters subject to deliberation and resolution by the Commission (articles 11 and 12), meetings (Article 13), preparation of meeting minutes (Article 13-2), public attendance at meetings (Article 13-3), and annual reports (Article 16).

Chapter 4 The Development of Legislations on Radioactive Waste Management

Section 1 The History of Legislations on Radioactive Waste Management

1. The Transformation of the 「Radioactive Waste Management Act」

(1) 「Radioactive Waste Management Act」 Enacted as Act No. 9016 on March 28, 2008

The 「Radioactive Waste Management Act」, enacted as Act No. 9016 on March 28, 2008, resulted from systematically integrating the matters regarding radioactive waste management that were dispersed in various different acts into a single act for the purpose of implementing an effective radioactive waste management policy. Accordingly, the establishment of a law regarding a systematic follow-up management system for the development of nuclear energy as a major energy source for the country can contribute to public safety by ensuring safe and efficient management of radioactive wastes.

To begin, Article 6 of the 「Radioactive Waste Management Act」 stipulated that a comprehensive and mid- to long-term master plan for radioactive waste management be established at the State level for systematic management of radioactive waste, and that the then-Minister of Knowledge Economy establish a master plan that includes matters regarding the basic policy for radioactive waste management, site selection for radioactive waste management facilities, and investment

plans for such to be deliberated on and resolved by the Nuclear Energy Commission. It also prepared a specialized and thorough establishment and review system for mid- and long-term comprehensive plans for radioactive waste management, thereby ensuring efficient and stable implementation of the radioactive waste management program.

Articles 14 and 16 of the 「Radioactive Waste Management Act」 stipulated the matters related to the "payment of radioactive waste management expenses" for flexible operation and stable supply of financial resources necessary for radioactive waste management. Radioactive waste generators were required to bear the expenses incurred in radioactive waste management when delivering the radioactive wastes to the radioactive waste management agency, who then would have to deposit the money collected in the radioactive waste management fund

Also, Article 15 of the 「Radioactive Waste Management Act」 and Article 5 of the Addeda thereof stipulated that the nuclear power plant operators be imposed a charge for the management of spent nuclear fuel, according to the kinds and quantity of spent nuclear fuel and the expenses incurred by each unit of generated quantity, to be collected and transferred to the radioactive waste management fund. Articles 18 through 27 「Radioactive Waste Management Act」 provided for the matters regarding the establishment of the Korea Radioactive Waste Management Corporation for effective operation and management of the radioactive waste management program.

In addition, despite the expectation that tremendous financial resources would be required for the processing and disposal of radioactive wastes, an appropriation fund employing an accumulative method, which does not actually guarantee that the finances would be secured, was being created.

Also, the nuclear power plant operators, who were the generators of radioactive wastes, were managing the financial resources themselves, and this made it difficult to ensure impartiality and transparency. Accordingly, in order to secure the financial resources necessary for radioactive waste management, a radioactive waste management fund was established with the payments from the radioactive waste management agencies and the charges imposed for managing spent nuclear fuel, and the fund was to be used for the purpose of radioactive waste management and managed and operated by the Minister of Knowledge Economy, in accordance with articles 28 through 33 of 「Radioactive Waste Management Act」.

(2) 「Radioactive Waste Management Act」 amended as Act No. 9884 on December 30, 2009

The 「Radioactive Waste Management Act」, amended as Act No. 9884 on December 30, 2009, provided for the basis for a procedure to collect opinions from a broad group of people including stakeholders, the general public and experts in regard to the matters that were expected to cause social conflicts in the process of formulating the master plan for radioactive waste management.

(3) 「Radioactive Waste Management Act」 amended as Act No. 11961 on July 30, 2013

In the 「Radioactive Waste Management Act」, amended as Act No. 11961 on July 30, 2013, the name, “Korea Radioactive Waste Management Corporation,” was changed to a more positive-sounding name, “Korea Radioactive Waste Agency,” as a means to boost the public acceptance of radioactive waste management.

(4) 「Radioactive Waste Management Act」 amended as Act No. 13735 on January 6, 2016

Article 6 of the 「Radioactive Waste Management Act」 required that a master plan and implementation plan for radioactive waste management be established to ensure the safe and efficient management of radioactive waste, but it did not set forth the matters regarding the planning period or establishment cycle. Accordingly, the Act was amended to prescribe that a master plan for radioactive waste management be established for a 30-year period every five years, that an implementation plan be established and implemented, in accordance with the master plan, on a yearly basis, and that the master plan be submitted to a standing committee under the National Assembly.

2. Transformation of the 「Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste」

The 「Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste」 was enacted as Act No. 7444 on March 31, 2005. There was an urgent need to construct facilities for safe and efficient management of low level waste (LLW) and intermediate level waste (ILW) generated from the use of nuclear energy such as nuclear power generation and diagnosis and treatment of diseases. However, due to the strong opposition by the local residents in the locations of facilities for disposal of low and intermediate level radioactive wastes, a support system was established for Si (cities), Gun (counties) and autonomous Gu (districts) with jurisdiction over the

locations through the enactment of the Special Act. Also, the Special Act was enacted to facilitate the construction and operation of the LLW and ILW disposal facilities by specifying the support measures, and to contribute to the development of the regions concerned and improvement of the quality of life for the residents.

The 「Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste」 provided for special provisions in regard to the establishment of an assistance system for the inducement areas in articles 3 through 5, selection of the inducement areas (Article 7), establishment of a special account for the inducement area assistant project (Article 9), loan of state-owned property or public property to the inducement areas, rate of subsidization from the national treasury for the inducement areas, special cases regarding methods of contract following a bidding, and preferential employment and participation of local residents in articles 11 through 14 as special provisions for the promotion of the development of the inducement areas.

Selection 2 The Main Content of the 「Radioactive Waste Management Act」

<The Content of the Radioactive Waste Management Act>

CHAPTER Ⅰ GENERAL PROVISIONS	Article 1 (Purpose) Article 2 (Definitions) Article 3 (Relationship with Other Acts) Article 4 (Responsibilities of State and Local Governments) Article 5 (Duties of Management Agency and Radioactive Waste Generators)

CHAPTER Ⅱ ESTABLISHMENT, ETC. OF MASTER PLANS FOR RADIOACTIVE WASTE MANAGEMENT	Article 6 (Master Plans for Radioactive Waste Management) Article 6-2 (Solicitation of Public Opinions, etc.) Article 7 (Implementation Plans for Radioactive Waste Management) Article 8 (Survey, etc. on Radioactive Waste
CHAPTER Ⅲ RADIOACTIVE WASTE MANAGEMENT	Article 9 (Radioactive Waste Management Services) Article 10 (Radioactive Waste Management Agency) Article 11 (Operating Guidelines for Radioactive Waste Management Facilities) Article 12 (Disclosure of Information) Article 13 (Transfer of Radioactive Waste) Article 14 (Expenses for Radioactive Waste Management) Article 15 (Charges for Management of Spent Nuclear Fuel) Article 16 (Advance Payment of Management Expenses and Charges) Article 17 (Reserve for Cost of Decommissioning Nuclear Power Plants, etc.)
CHAPTER Ⅳ THE KOREA RADIOACTIVE WASTE MANAGEMENT AGENCY	Article 18 (Establishment of Korea Radioactive Waste Management Agency) Article 19 (Executives) Article 20 (Business) Article 21 (Financing) Article 21-2 (Contributions, etc.) Article 22 (Borrowing of Funds) Article 23 (Lease of State Property without Consideration) Article 24 (Budget, etc.) Article 25 (Entrustment of Affairs) Article 26 (Application Mutatis Mutandis of the Civil Act) Article 27 (Guidance for and Supervision of Business Operations)

CHAPTER Ⅴ RADIOACTIVE WASTE MANAGEMENT FUND	Article 28 (Establishment of Radioactive Waste Management Fund) Article 29 (Raising Fund) Article 30 (Use of Fund, etc.) Article 31 (Management and Operation of Fund) Article 32 (Authorities Responsible for Accounting of Fund) Article 33 (Disposition of Profits and Deficits of Fund)
CHAPTER Ⅵ SUPPLEMENTARY PROVISIONS	Article 34 (Reporting and Inspections, etc.) Article 35 (Orders for Measures Issued to Radioactive Waste Generators, etc.) Article 36 (Vicarious Execution) Article 37 (Entrustment of Authority) Article 38 (Legal Fiction as Public Official in Application of Penalty Provisions)
CHAPTER Ⅶ PENALTY PROVISIONS	Article 39 (Penalty Provisions) Article 40 (Penalty Provisions) Article 41 (Penalty Provisions) Article 42 (Penalty Provisions) Article 43 (Penalty Provisions) Article 44 (Joint Penalty Provisions) Article 45 (Administrative Fines)

1. Purpose of Legislation

The purpose of enacting the 「Radioactive Waste Management Act」 was to set forth the matters necessary for safe and efficient management of radioactive wastes, thereby preventing hazards from radioactive wastes and contributing to public safety and environmental conservation.

2. Definitions of Radioactive Wastes, etc.

The term, “radioactive wastes,” referred to in Article 2 Subparagraph (1) in the 「Radioactive Waste Management Act」 menas the “radioactive wastes” defined in Article 2 Subparagraph 18 of the 「Nuclear Safety Act」. Accordingly, the term, “radioactive wastes,” is defined in Article 2 Subparagraph 18 of the 「Nuclear Safety Act」 as “radioactive materials or other materials contaminated by such radioactive materials (hereinafter referred to as “radioactive materials, etc.") subject to disposal (including spent nuclear fuels determined to be disposed of under Article 35 (4)).” As such, the concept of “spent nuclear fuels” can be derived from Article 2 Subparagraph 10 of the 「Enforcement Decree of the Nuclear Safety Act」 which states “the term ‘interim storage of spent fuel’ means a safe storage for a specified period of nuclear fuel materials spent as fuel for a nuclear reactor or produced by other sources of fission until such material is received from the generators and processed or disposed of permanently.”

Article 2 Subparagraph (2) of the 「Radioactive Waste Management Act」 states that the term “radioactive waste management” means the shipment, storage, treatment, and disposal of radioactive waste, the disposal of which is prohibited in accordance with Article 70 (2) of the Nuclear Safety Act, which is acquired from persons who have generated such radioactive waste (hereinafter referred to as “radioactive waste generators”), and all activities related thereto.” Article 2 Subparagraph (3) of the Act stipulates that the term “radioactive waste management facilities” means facilities for the management of radioactive waste and their incidental facilities, while the term “treatment” means treating radioactive waste by

any physical or chemical method for the storage, disposal, or recycling of such waste: Provided, That treatment of spent nuclear fuel under subparagraph 14 of Article 2 of the Nuclear Safety Act is excluded herefrom (Article 2 Subparagraph 4 of the Act).” Meanwhile, the term “disposal” means isolating radioactive waste from the human habitat without the intention of retrieval (Article 2 Subparagraph 5 of the Act).

3. Responsibilities of the State, etc. and the Radioactive Waste Management Agencies and Generators

Article 4 (1) of the 「Radioactive Waste Management Act」 stipulates that the State shall prepare necessary measures to ensure safe and efficient radioactive waste management in a way that will not impose undue burdens on future generations. Also, each local government shall endeavor to ensure that the smooth implementation of radioactive waste management and affairs related thereof, such as the selection of sites for radioactive waste management facilities and the construction and operation of such facilities (Article 4 (2) of the Act). Furthermore, the State and each local government shall make a concerted effort to ensure the smooth and efficient implementation of radioactive waste management services (Article 4 (4) of the Act).

Article 5 (1) of the 「Radioactive Waste Management Act」 prescribes that radioactive waste management agencies shall cooperate with nuclear safety regulatory agencies to manage radioactive waste in a safe and efficient manner. Also, each radioactive waste generator shall minimize the generation of radioactive waste, ensure the safe management of

radioactive waste, and render cooperation in conducting affairs related to radioactive waste management (Article 5 (2) of the Act). In addition, the nuclear power plant operators falling under Article 12 (1) 3 of the 「Electric Utility Act」 (hereinafter referred to as "nuclear power plant operator") shall provide support and cooperation in terms of personnel and technologies to the radioactive waste management agencies in selecting sites for radioactive waste management facilities.

4. Establishment, etc. of Master Plans for Radioactive Waste Management

Article 6 (1) of the 「Radioactive Waste Management Act」 prescribes that the Minister of Trade, Industry and Energy shall establish a master plan for radioactive waste management (hereinafter referred to as "master plan") to ensure the safe and efficient management of radioactive waste. A master plan is to include a framework policy for radioactive waste management, the current status of and prospects for generation of radioactive waste, a facilities installation plan, such as the selection of sites for radioactive waste management facilities, an investment plan for radioactive waste management facilities, and other matters specified by Ordinance of the Ministry of Trade, Industry and Energy as necessary for radioactive waste management (Article 6 (2) of the Act). Article 7 of the Act prescribes that a radioactive waste management agency shall establish and execute an implementation plan for radioactive waste management (hereinafter referred to as "implementation plan") in accordance with a master plan, and the implementation plan shall be subject to approval of the Minister of Trade, Industry and Energy to be duly established and revised. On the other hand, any modifications to an insignificant matter

are to be reported to the Minister of Trade, Industry and Energy. In order to establish a master plan as such, a survey may be conducted on the current status of generation and management of radioactive waste (Article 8 of the Act).

5. Solicitation of Public Opinions, etc.

Article 6-2 (1) of the 「Radioactive Waste Management Act」 stipulates that "in the course of establishing a master plan, the Minister of Trade, Industry and Energy may gather extensive opinions from the interested parties, ordinary public, or experts, etc. with regard to potentially controversial issues such as management of spent nuclear fuel." Article 6-2 (2) of the Act allows the Minister of Trade, Industry and Energy to establish a public opinion solicitation committee to solicit public opinions, and its functions and period for activities are to be determined by the Minister of Trade, Industry and Energy. The said committee is to be comprised of not more than 15 members, including one chairperson. Members of the committee are to be commissioned by the Minister of Trade, Industry and Energy from among persons having considerable knowledge and experience in the management of spent nuclear fuel and social communication, and the chairperson shall be elected from among the members (Article 6-2 (3) and (4) of the Act). The committee may, when the period for activity is terminated, submit recommendations after resolution by the committee to the Minister of Trade, Industry and Energy and the Nuclear Energy Promotion Commission under Article 3 of the 「Nuclear Energy Promotion Act」. In such cases, the Minister of Trade, Industry and Energy and the Nuclear Energy Promotion Commission

are to offer the most sincere attention to the recommendations (Article 6-2 (5) of the Act).

In October 2013, the government of the Republic of Korea launched the Public Engagement Commission on Spent Nuclear Fuel Management.[23] After a 20-month period of activity until June 2015, the Commission prepared the Recommended Guidelines for Spent Nuclear Fuel Management.[24] The Commission proposed that disposal facilities for spent nuclear fuel, which is classified as high level waste (HLW), in specified regions by 2051, at the latest, so that the spent nuclear fuel, presently stored in temporary storage facilities, be collected to be disposed of as

23) In Germany, "Repository Site Selection Act (StandAG)" was enacted to select the repository for final selection of permanent disposal facility for radioactive wastes in a transparency and democratic manner by 2031. Article 3 of the Act stipulates that the commission in charge be comprised of 33 members, with 16 members from the private sector, 16 members from the political sector, and 1 chairperson. As for the French national public debate commission (CNDP), introduced by Loi Barnier, the members are independent and cannot be dismissed, with guaranteed term of office of 5 years. The commission is comprised of 1 chairperson, 2 vice-chairpersons and 25 members. As for the UK, the Committee on Radioactive Waste Management (CoRWM) has been launched with 12 members, and public engagement is pursued for 3 years through the Proactive Stakeholder Engagement (PSE) program. In the case of Canada, the Nuclear Waste Management Organization (NWMO) has been established. Around 500 experts in science, technology, humanities and social sciences participate in the organization, with opinions collected from around 1,800 citizens and opinions have been collected from more than 50,000 people through over 300,000 public engagements on the Internet, etc. For details, refer to "Legislative Agendas for the Establishment of Safety Country" authored by Kim Jong-cheon 「Chung-Ang Law」Vol. 17 No. 1 (Chung-Ang Law Association, 2015), p. 121.

24) Other countries have experienced many difficulties in establishing management policies for spent nuclear fuel. For instance, it took 15 years for Finland and 32 years for Finland to formulate such policies, while Germany has selected the method of storing spent nuclear fuel within the nuclear power plant site and a separate site, and the USA opted to store the materials in the Yucca Mountain nuclear waste repository but the materials are still stored within the nuclear power plant sites due to budget cuts.

HLW. For this purpose, the Commission proposed that underground research laboratories (URL) such as a disposal site be selected by 2021 and empirical research be conducted starting in 2030 in the recommended guidelines.

6. The Radioactive Waste Management Program

Article 9 of the「Radioactive Waste Management Act」prescribes the scope of services for radioactive waste management to include (ⅰ) Shipment, storage, treatment, and disposal of radioactive waste; (ⅱ) Selection of sites for radioactive waste management facilities and construction, operation, and post-decommissioning management of such facilities; (ⅲ) Collection, research, analysis, and management of materials for radioactive waste management; (ⅳ) Public relations for radioactive waste management, and any business that is specified by Presidential Decree as incidental to subparagraphs 1 through 4, such as research and development, human resources development, and international cooperation. Also, it is the Korea Radioactive Waste Management Agency under Article 18 (1) that is to serve as the radioactive waste management agency (Article 10 of the Act).

Article 13 of the「Radioactive Waste Management Act」stipulates that "when any radioactive waste generator has generated radioactive waste, the kind or quantity of which is prohibited from being disposed of in accordance with Article 70 (2) of the Nuclear Safety Act, it shall transfer such waste to a radioactive waste management agency which in turn shall conduct appropriate radioactive waste management." Meanwhile, Article 14 (1) of the「Radioactive Waste Management Act」prescribes that "a radioactive waste generator shall bear the expenses incurred in radioactive

waste management (hereinafter referred to as “management expenses”) as calculated in accordance with guidelines prescribed by Presidential Decree, such as the kind and quantity of radioactive waste generated: Provided, That no nuclear power plant operator is required to bear an amount equivalent to the expenses imposed as the charge under Article 15 (1) out of the management expenses.”

Also, for the purpose of efficient provision of spent nuclear fuel management services, among radioactive waste management services, the Minister of Trade, Industry and Energy is to impose on and collect from each nuclear power plant operator a charge for the management of spent nuclear fuel as calculated in accordance with the guidelines prescribed by Presidential Decree such as the kinds and quantity of spent nuclear fuel and the expenses incurred by each unit of generated quantity (Article 15 of the Act).

In addition, according to Article 17 (1) of the 「Radioactive Waste Management Act」, a nuclear power plant operator is to accumulate a reserve separately every year for decommissioning the relevant nuclear power plant and reflect the reserve in its accounts, as prescribed by Presidential Decree, while a nuclear power plant operator is to prepare a plan for accumulating the reserve every year and submit it to the Minister of Trade, Industry and Energy (Article 17 (2) of the Act).

7. Establishment of the Korea Radioactive Waste Agency

Articles 18 through 27 of the 「Radioactive Waste Management Act」 provides for the basis for the establishment of the Korea Radioactive

Waste Agency (KORAD) to ensure efficiency of radioactive waste management. The executives of the Agency are to be comprised of no more than nine directors, including one President and one Vice President, and one auditor. The agency is to undertake the following businesses: (ⅰ) Radioactive waste management services; (ⅱ) Businesses entrusted by the Government pursuant to this Act or any other statutes; (ⅲ) Other businesses stipulated by the articles of incorporation of the Agency as necessary to achieve the objectives of its establishment, and businesses incidental to those under subparagraphs 1 through 3. The funds required for the operation and business of the Agency are to be raised from disbursements from the fund, borrowings under Article 22, contributions or subsidies by the Government or any person other than the Government, and other revenues specified by Ordinance of the Ministry of Trade, Industry and Energy. KORAD is to be governed by the provisions governing incorporated foundations of the Civil Act, and the Minister of Trade, Industry and Energy is to guide and supervise the business operations of the Agency and may, if deemed necessary, give an instruction or order with regard to its businesses.

8. Establishment of the Radioactive Waste Management Fund

Article 28 of the「Radioactive Waste Management Act」stipulates that in order to secure financial resources necessary for radioactive waste management, a radioactive waste management fund shall be established. The fund is to be raised from the deposits by the radioactive waste management agency under Article 14 (3), charges and additional charges

under Article 15, contributions and donations by any person other than the Government, earnings accrued from the operation of the fund, and other revenues specified by Presidential Decree. On the other hand, the fund is to be used for radioactive waste management services, expenses incurred in raising, management, and operation of the fund, and other support necessary for the business specified by Presidential Decree for radioactive waste management.

Section 3 The Main Content of the 「Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste」

<The Content of the Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste>

CHAPTER Ⅰ GENERAL PROVISIONS	Article 1 (Purpose) Article 2 (Definitions)
CHAPTER Ⅱ COMMITTEE ON ASSISTANCE FOR INDUCEMENT AREAS, ETC.	Article 3 (Establishment of Committee on Assistance for Inducement Areas) Article 4 (Committee's Functions) Article 5 (Establishment of Plans for Assistance to Inducement Areas) Article 6 (Establishment of Implementation Plans for Assistance to Inducement Areas)
CHAPTER Ⅲ ASSISTANCE FOR INDUCEMENT AREAS	Article 7 (Selection of Inducement Areas, etc.) Article 8 (Grant of Special Subsidies to Inducement Areas) Article 9 (Establishment and Operation of Special

	Account for Inducement Areas Assistance Project) Article 10 (Assistance Projects by Management Agency)
CHAPTER IV SPECIAL CASES FOR DEVELOPMENT OF INDUCEMENT AREAS	Article 11 (Loan of State-Owned Property or Public Property, etc.) Article 12 (Rate of Subsidization from National Treasury Subsidies for Inducement Areas) Article 13 (Special Cases regarding Methods of Contract) Article 14 (Preferential Employment and Participation of Local Residents)
CHAPTER V SUPPLEMENTARY PROVISIONS	Article 15 (Collection and Distribution of Fees) Article 16 (Reporting and Inspections) Article 17 (Relocation of Head Office of Nuclear Power Plant Operator) Article 18 (Restriction on Construction of Facilities Related to Spent Nuclear Fuel) Article 19 (Legal Fiction as Public Officials in Application of Penal Provisions)
CHAPTER VI PENAL PROVISIONS	Article 20 (Administrative Fine)

1. Purpose of Legislation

The purpose of enacting the「Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste」was to promote the development of inducement areas and the improvement of living conditions of residents therein by preparing a system for assisting areas in which a facility for the disposal of low and intermediate level radioactive waste is located.

2. Definitions of Matters Related to LLW and ILW

Article 2 (1) of the 「Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste」 stipulates that the term, "low and intermediate level radioactive waste," means the radioactive waste specified by Presidential Decree, taking into consideration the concentration of radioactivity and the heat generation rate, among the radioactive wastes prescribed in subparagraph 18 of Article 2 of the Nuclear Safety Act. The Act prescribes that the term "facility for the disposal of low and intermediate level radioactive waste" means a facility for permanently disposing of low and intermediate level radioactive wastes and auxiliary facilities related thereto (hereinafter referred to as "disposal facilities"), and the term "installation site" means an area in which disposal facilities are to be installed and that the Minister of Trade, Industry and Energy designates and publicly notifies as a zone prearranged for an electric power resource development project pursuant to Article 11 of the 「Electric Power Resource Development Promotion Act」 or an area in which disposal facilities are installed.

3. Establishment of Committee on Assistance for Inducement Areas

Article 3 (1) of the 「Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste」 prescribes that Committee on Assistance for Inducement Areas be established within the remit of the Prime Minister to deliberate on important matters regarding assistance to an area placed under the control

of the Special Self-Governing Province or a Si, Gun or autonomous Gu having jurisdiction over an installation site. The Committee is to be comprised of not more than 20 members, including one Chairperson, and committee members shall consist of ex officio members and commissioned members (Article 3 (2) of the Act).

The Prime Minister is to serve as the Chairperson of the Committee, and the Minister of Strategy and Finance, the Minister of Science, ICT and Future Planning, the Minister of Public Administration and Safety, the Minister of Trade, Industry and Energy, the heads of central administrative agencies specified by Presidential Decree, Governor of a Special Self-Governing Province or the head of a Si · Gun · Gu (referring to the head of an autonomous Gu; hereinafter referred to as "the head of a Si · Gun · Gu"), and/or the representative of a radioactive waste management agency under Article 10 of the Radioactive Waste Management Act are to serve as ex officio members, while the appointed members are to be appointed by the Prime Minister from among those who have abundant knowledge and experience in nuclear energy-related assistance projects (Article 3 (3) of the Act). Article 3 (4) of the Act states that the term of office for commissioned members shall be two years and may be renewed consecutively, and that the Committee shall have one secretary, who shall be the Minister of Trade, Industry and Energy (Article 3 (5) of the Act).

The Act also prescribes that the Committee shall deliberate on the plan for assistance to inducement areas under Article 5, and the establishment of an implementation plan for assistance to inducement areas under Article 6.

4. Selection of Inducement Areas, etc.

Articel 7 (1) of the 「Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste」 prescribes that the Minister of Trade, Industry and Energy shall select an inducement area through resident voting under Article 8 of the 「 Referendum Act」. Also, the Minister of Trade, Industry and Energy is to proceed with the plan for the selection of an inducement area, the results of site surveys, the course of selection, and other relevant activities in an open and transparent manner, and hold presentation meetings or forums for local residents in connection with the selection of an inducement area (Article 7 (2) and (3) of the Act).

5. Assistance for Inducement Areas

Article 8 (1) of the 「Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste」 prescribes that the Minister of Trade, Industry and Energy may require each nuclear power plant operator under Article 12 (1) 3 of the 「Electric Utility Act」 to provide the competent local government with a special subsidy for an inducement area, provided that he/she may also require such nuclear power plant business operator to provide any Eup, Myeon, or Dong in another Si, Gun, or autonomous Gu within five kilometers from the installation site with such subsidy, as prescribed by Presidential Decree. The amount of a subsidy is to be specified by Presidential Decree, taking into consideration the scale of assistance to an area in the vicinity of each nuclear power plant under Article 13 (2) of the 「Act on

Assistance to Electric Power Plants-Neighboring Areas」. The timing for providing a subsidy and other detailed matters are to be prescribed by Ordinance of the Ministry of Trade, Industry and Energy, and in such cases, the Minister of Trade, Industry and Energy must consult with the competent local government concerned (Article 8 (2) and (3) of the Act).

Moreover, in accordance with Article 9 (1) of the「Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste」, a special account for projects for assistance to inducement areas is to be established in each competent local government in order to secure funds required for the projects for assistance to each inducement area and ensure the rational operation of the funds. The special accounts are to be operated and managed by the head of a Si・Gun・Gu having jurisdiction over an inducement area (Article 9 (2) of the Act). The Act also stipulates that the sources of revenue for the special accounts be subsidies, fees vested in the competent local government pursuant to Article 15 (2), and other revenues generated by the management and operation of the special account. On the other hand, the expenditure from the special accounts includes costs incurred in projects for local development, tourism promotion, expansion of cultural facilities, and the assistance in marketing agricultural or fishery products, costs incurred in projects for the increase of local residents' income, stabilization of their living conditions, improvement of their living environment, and enhancement of their welfare, and other costs incurred in projects specified by Presidential Decree for the development of an inducement area and the improvement of residents' living conditions (Article 9 (3) and (4) of the Act).

In addition, a management agency may implement subsidization of electricity bills, public relations, education, or environment and safety

management, assistance related to agricultural or fishery products or tourism promotion, and other projects to which the Committee deems it necessary to provide assistance for the development of an inducement area, with regard to an inducement area with some of the fees vested in the management agency under Article 15 (2) as financial resources therefor (Article 10 of the Act).

6. Special Provisions for the Development of Inducement Areas

Article 11 (1) of the 「Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste」 stipulates that if the State or a local government deems it necessary for developing an inducement area, it may lend State-owned property or public property to a person, permit a person to use State-owned property or public property without consideration or with a discount, or sell such property under a negotiated contract, subject to deliberation thereon by the Committee, notwithstanding the provisions of the 「State Property Act」 or the 「Public Property and Commodity Management Act」. Also, a person who leases, or is permitted to use, State-owned property or public property may install a building or any other facility on the State-owned property or public property (Article 11 (2) of the Act). Article 12 of the Act, on the other hand, prescribes that with regard to projects specified by Presidential Decree as assistance projects for the development of inducement areas, the central government may increase the National Treasury subsidy by the rate of subsidization specified by Presidential Decree, notwithstanding the differential rate of subsidization under Article 10 of the 「Subsidy Management Act」.

Furthermore, if the construction cost of a project financed with the National Treasury subsidy or a local subsidy granted for the development of an inducement area is less than five billion won, the head of a Si/Gun/Gu having jurisdiction over the inducement area may limit the qualification for participation in the tender for the project to persons who participate in the tender jointly with a person who has his/her principal place of business in the inducement area, notwithstanding the provisions of the「Act on Contracts to Which a Local Government Is a Party」(Article 13 of the Act). Also, the Act also provides for matters regarding the preferential employment and participation of local residents by stating that it may be permitted to preferentially employ or involve residents in an inducement area in a project implemented for the installation or operation of disposal facilities or assistance thereto (Article 14 of the Act).

Article 17 (1) of the Act stipulates that the operator of a nuclear power plant under Article 12 (1) 3 of the「Electric Utility Act」shall finalize a plan regarding the purchase of land and the relocation of its head office within one year after an inducement area is designated and complete the relocation to the inducement area within three years after the implementation plan for the electric power resource development project regarding disposal facilities is approved, thereby stipulating that the head office of KHNP be relocated. In relation to purchase of land, Article 17 (2) of the Act states that the「Act on Acquisition of and Compensation for Land, etc. for Public Works」may be applied mutatis mutandis.

7. Restriction on Construction of Facilities Related to Spent Nuclear Fuel

Article 18 of the 「Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste」 prescribes that "a facility related to spent nuclear fuel under subparagraph 5 of Article 2 of the 「Nuclear Safety Act」 may not be built in an inducement area." However, it does not provide a clear concept of a "facility related to spent nuclear fuel." In relation to this issue, the government gives an interpretation that Silo and MAXTOR, spent fuel dry storages installed at the Wol-song Nuclear Power Plant in Gyeong-ju, are not facilities related to spent nuclear fuel, but are "relevant facilities" referred to in the 「Nuclear Safety Act」.

In other words, "relevant facilities" is defined in Article 2 Subparagraph 10 of the 「Nuclear Safety Act」 as "facilities prescribed by Presidential Decree in relation to the safety of nuclear reactors," while Article 9 of the 「Enforcement Decree of the Nuclear Safety Act」 defines "relevant facilities" as handling and storage facilities of nuclear fuel materials, or treatment, discharge and storage facilities for radioactive waste located in a nuclear power plant.

Accordingly, the spent fuel dry storages installed at the Wolsong Nuclear Power Plant in Gyeong-ju may be interpreted as relevant facilities, but there are no reasons to consider it as facilities that are not related to spent nuclear fuel. Considering that there is dispute in regard to the interpretation of the laws in relation to whether Silo and MAXTOR at Wol-song are "relevant facilites" or "related facilites," there is a need

to provide a clear legal interpretation and seek measures to resolve this dispute.

Section 4 Sub-conclusion

It has been 38 years since the commencement of the operation of Kori-1 in 1978, but the government of the Republic of Korea has never compensated the regions in which the spent nuclear fuel storage facilities are located. Of particular note, the government formulated a radioactive waste disposal facility plan in 1984 to establish disposal facilities for LLW, ILW and HLW at the same site for a final disposal of spent nuclear fuel. However, a site for such facility could not be secured due to the strong opposition from by the local residents of Gureop in 1995 and Buan in 2003. Then, the enactment of the 「Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste」 in 2007 allowed the selection of inducement areas for the establishment of disposal facilities through a bidding with the participation of the local government agencies and provided for assistance measures for the selected inducement areas. as a result, on November 9, 2007, a 2,100,000m^2 disposal site with a capacity to handle 800,000 drums of LLW and ILW was secured in Bonggil-ri, Yangbuk-myeon, Gyeongju-si.[25)]

25) The selection of a site for the disposal facility of LLW and ILW in November 2005 became a social issue in Korea. Following the referendums in Gyeong-ju, Pohang, Yeong-deok, Gun-san and others, Gyeong-ju was finally chosen as the disposal facility site. As such, it took 19 years to select the site for the disposal facility of LLW and ILW, and such selection can only be made when public safety against radiation exposure that may arise from nuclear power plants can be guaranteed. The competition to attract a radioactive waste disposal site arose from the government's promise to provide financial assistance of hundreds of billions of Korean won, and although it is

However, on March 11, 2011, a massive earthquake on the sea bottom 179km east of Sendai and the resulting tsunami led to the Daiichi nuclear power plant in Fukushima, Japan to leak large amounts of radioactive materials. As a result, ensuring safety in relation to the management of spent nuclear fuel stored on the sites of 24 nuclear power plants in operation in Korea became a policy issue. Thus, there is a need for the government of the Republic of Korea to make a policy decision with respect to extending the storage facilities to address the limitations in the storage capacity of nuclear power plants as well as to respond to the growing public concerns regarding the long-term storage of spent nuclear fuel inside nuclear power plants.

Accordingly, the selection of sites for the establishment of facilities for disposal of radioactive wastes for spent nuclear fuel management is an important issue pertaining to public safety and electrical energy security, and the decisions in relation thereto should not be made out of political logic, which would only put a burden on the future generations.

For this reason, the government of the Republic of Korea launched the Public Engagement Commission on Spent Nuclear Fuel Management in October 2013 to collect public opinions regarding the management measures for spent nuclear fuel. After a 20-month period of activity until

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true that such financial assistance will promote the development of Gyeongju, Gyeongsangbuk-do, the potential safety issues in relation to the lives and physical health of the local residents cannot be ignored. Accordingly, on March 31, 2005, the government of the Republic of Korea enacted the「Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste」. Accordingly, even the process of selecting the site for the disposal facility of LLW and ILW in Korea, which took 21 years due to public anxiety regarding the detrimental impact on life and physical health, shows how difficult it is to build nuclear power plants and radioactive waste treatment and disposal sites.

June 2015, the Commission prepared the Recommended Guidelines for Spent Nuclear Fuel Management. Of particular note, the government confirmed the establishment of a master plan for spent nuclear fuel management, based on the Recommended Guidelines for Spent Nuclear Fuel Management, and is currently in the middle of amending the "Special Act on the Management Procedure for High Level Radioactive Waste (Tentative title)" in order to seamlessly execute the policy for spent nuclear fuel management, as they had done in securing a site for the establishment of a facility for the disposal of LLW and ILW.

Chapter 5 The Development of Legislation on the Protection of Nuclear Facilities and Prevention of Radiation Disasters

Section 1 The History of Legislation on the Protection of Nuclear Facilities and Prevention of Radiation Disasters

1. The History of the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」

(1) 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 enacted as Act No. 6873 on May 15, 2003

The 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 was enacted to establish a radiation disaster management system for an efficient response to radiation disasters by reinforcing and specializing the radiation disaster prevention and facility protection systems to ensure safe operation of nuclear material and nuclear energy facilities. Of particular note, articles 3 and 4 of the Act provided for the government to establish physical protection systems for nuclear material and nuclear energy facilities to promote safe operation thereof. Articles 5 through 7 stipulated that a physical protection council for nuclear facilities, etc. be established under the control of the Minister of Science and Technology to deliberate on important national

policies on the physical protection of nuclear facilities, and that a regional protection councils be established for cities, provinces, Si · Gu n · Gu in the areas where nuclear facilities are located.

Also, Article 9 of the Act stipulated that the nuclear business operators establish a physical protection operation system, physical protection regulations and protective emergency plan in relation to the nuclear facilities concerned so as to mitigate the threats to the nuclear facilities and prevent illegal transfers of nuclear materials. Article 35 of the Act, on the other hand, prescribed that the nuclear business operators be equipped with radioactivity monitoring facilities, radiological contamination removal facilities, and other radiation disaster response facilities and equipment so as to be prepared for radiation disasters. Moreover, Article 23 of the Act required the Ministry of Science and Technology to declare the occurrence of a radiation disaster in case the amount of the radiation exposure exceeds the threshold, and to report to the President via the Prime Minister the radiation disaster situation and emergency response measures. The Minister of Science and Technology was to establish the central radioactive disaster prevention and response headquarters under its jurisdiction to take urgent response measures for the prevention of radioactive disasters (Article 25 of the Act). Also, Article 42 of the Act prescribed that in case a declaration of a radiation disaster situation is lifted, follow-up measures were to be established and implemented to prevent the disaster from spreading and to make recovery from damages such as taking medical action for the residents of the affected areas.

(2) 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 amended as Act No. 10910 on July 25, 2011

The 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」, amended as Act No. 10910 on July 25, 2011, prescribed the change of the supervising institution for the radioactivity and radiation disaster prevention measures for nuclear facilities from "Minister of Education, Science and Technology" to "Nuclear Safety and Security Commission," with the establishment of the Commission to supervise the matters related to nuclear safety management. An amendment was made to provide the legal basis for the Nuclear Safety and Security Commission to take emergency measures to prevent the spread of a radiation disaster or contamination, upon occurrence of a radiation accident or contamination or concerns thereof.

An analysis of the key matters shows that Article 5 of the Act changed the affiliation of the Physical Protection Council for Nuclear Facilities, etc. to belong to the Nuclear Safety and Security Commission, with the Council Chair being the Chairperson of the Nuclear Safety and Security Commission, and the Vice-Minister of Education, Science and Technology was newly added as a council member. In articles 18 and 20, the entity for the establishment of a national radioactive disaster plan and the approving authority for the radiation emergency plan were changed from the Minister of Education, Science and Technology to the Nuclear Safety and Security Commission. Moreover, Article 22-2 of the Act provided for the matters allowing the Nuclear Safety and Security Commission to take emergency measures to prevent the spread of

radiation contamination or removal of radiation contaminants upon occurrence of a radiation accident or contamination or concerns thereof.

(3) 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 amended as Act No. 12665 on May 21, 2014

The purpose of the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」, amended as Act No. 12665 on May 21, 2014, could be largely divided into three objectives. First, it was to clearly specify the constituent features of the crimes defined in the 「International Convention for the Suppression of Acts of Nuclear Terrorism」 agreed to be ratified by the National Assembly on December 29, 2011, and the 「Convention on the Physical Protection of Nuclear Material and Nuclear Facilities」 and the matters related to the penalization for violations thereof, and to prepare a domestic legal framework to actively participate in the international efforts to reinforce the nuclear security system. Meanwhile, the amendment was made to establish a legal framework to continually improve the capabilities of nuclear energy business operators to counter the internal and external threats to nuclear facilities and nuclear materials through physical protection education and training.

Second, in the Republic of Korea, a notice issued by the Nuclear Safety and Security Commission prescribed that the scope of “local area” be defined by making classifications according to the nuclear facilities in order to designate the radiation emergency planning zones. However, the scope of the then-local areas was considered unrealistic, in reflection of the widespread impact of the nuclear accidents that had occurred in the

past including the Fukushima Daiichi nuclear disaster. Meanwhile, IAEA advised that emergency planning zones be distinguished and managed, but it was noted that the then-concept of setting a single radiation emergency planning zone had limitations in ensuring efficient emergency responses to radiation disasters. Accordingly, the Act prescribed that the radiation emergency planning zones be distinguished as "preventive protection zone" and "emergency protection planning zone," and the local area be defined as the areas within the 20 to 30km radius of the emergency protection planning zones for nuclear power reactors and relevant facilities, as a means to supplement and reinforce the legal devices for making an efficient response in the event of a nuclear power plant accident.

Third, imprisonment without prison labor is similar to imprisonment with prison labor in a sense that it is a punishment of restricting physical freedom, but it, as the name suggests, does not require prison labor. This was a vestige of the past traditions of viewing labor with contempt, and thus was considered a type of punishment that was not suitable for modern society. Accordingly, "imprisonment without prison labor" was deleted from the Act, and the criminal punishments were unified as "imprisonment with prison labor" for an institutional improvement that coincides with the current beliefs.

(4) 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 amended as Act No. 13544 on June 2, 2016

The 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 was amended as Act No. 13544 on June 2, 2016, based on the need to reinforce the computer and

information systems of nuclear facilities against digital infiltrations following the computer worm attacks made by Iran in 2010 that caused the suspension of operation of the nuclear facilities and the hacking incidents that began affecting nuclear facilities in Korea in late 2014.

However, the laws of the Republic of Korea stipulated that computer and information system security measures for nuclear facilities be implemented in accordance with the subordinate statutes, instead of enforcement decrees or enforcement rules. Based on this, it was noted that the legal basis for the regulation thereof was too weak and that the system for preventing and countering digital infiltrations was insufficient. Accordingly, the definitions of "digital infiltration" and "computer and information systems of nuclear facilities" were newly included in the law, and the government and nuclear energy business operators had to prepare policies and regulations to strengthen the security of computer and information systems of nuclear facilities, respectively. As such, the amendments were made to reinforce the security schemes for computer and information systems of nuclear facilites.

2. The History of the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」

(1) 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 enacted as Act No. 10908 on July 25, 2011

The 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 was as Act No. 10908 on July 25, 2011. It

stipulated that a plan be established and implemented to protect all citizens against radiation that they can be exposed to in their living spheres. Also, it stipulated that a safety management system be introduced for materials and products that include natural radioactive nuclides, and that radiation and radioactivity monitoring devices be installed at airports and ports, as a means to build a protection system against recyclable scrap metals and materials with radioactivity concentration above a certain level. moreover, a safety management system was to be introduced for cockpit and cabin crew of air carriers who may potentially be exposed to cosmic rays. As such, this Act was established to establish a safety management system for protection against radiation in the natural environment as a means to improve the quality of life for citizens and to contribute to public safety.

As for the key matters stipulated in the Act, there is a provision requiring the Minister of Science and Technology to establish a comprehensive plan and annual implementation plans to protect public health and the environment. Moreover, anyone intending to mine for, export, import, or sell source materials, to export, import, or sell by-products from processing, operating a facility that produces by -products from processing, or intending to treat, dispose of, or recycle by-products from processing had to register with the Minister of Education, Science and Technology for systematic management of source materials and by-products from processing.

In addition, safety standards were proposed for products manufactured by processing source materials or by-products from processing or using such materials as source materials. Those manufacturing, importing or exporting products that do not conform to such standards were required

to disclose such information, and recall and dispose of such products. Failure to abide by these measures, the business operator concerned would be ordered by the Minister of Education, Science and Technology to handle the processed products with defects, and if the business operator does not comply with the order, the Minister of Education, Science and Technology was able to may make a vicarious execution under the 「Administrative Vicarious Execution Act」.

Also, for safety control of radiation emitted from source materials, by-products from processing, processed products and recyclable scrap metals, the Minister of Education, Science and Technology had to install and operate radiation and radioactivity monitoring devices at airports and ports, while those handling recyclable scrap metals had to install and operate monitors at the handling site. In addition, at the request of individuals responsible for handling, manufacturer, or a person handling recyclable scrap metal, institutions with expertise in performing research and investigation regarding safety control of environmental radiation were to be designated as institutions specializing in environmental radiation. The Act enabled such specialized institutions to provide assistance to the handlers, etc. when they requested a measurement of radioactivity concentration in order to ensure the eligibility for registration and the reliability of outcomes of measurement.

(2) 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 amended as Act No. 13542 on December 1, 2015

The purpose of the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」, amended as Act No. 13542 on

December 1, 2015, can be largely divided into three objectives. First, at the time, in case of detecting radioactive materials in imported recyclable scape metals, such were immediately returned to the exporting country if the exporting country was clearly known, but the scrap metals had to be disposed of domestically without being returned if the exporting country was not clearly known. Accordingly, in case of detecting a material that exceed or is suspected to exceed the radioactivity concentration threshold, the amended Act made it mandatory for those handling recyclable scrap metals to report to the Nuclear Safety and Security Commission the information on the exporting country and the importing and exporting companies concerned. Also, when a suspicious substance or material is detected at an airport or a port, the amended Act required the Nuclear Safety and Security Commission to check the exporting country and the importing and exporting companies concerned so that the material could be returned immediately in the event of detecting a radioactive material. As such, the Act was amended to improve protection of the public against radiation.

Second, there were growing public concerns in regard to the safety control of radiation in the living spheres due to the controversy over the scrap metal imported into Gunsan Port in Jeollabuk-do Province from Japan being contaminated with radiation and radioactivity. Despite this, however, the then-Act did not make set forth the standards for educating and training the monitoring device operators or their mandatory duties, which resulted in the absence of systematic education and training. Accordingly, the Act was amended to require the monitoring device operating staff to receive education and training conducted by the Nuclear Safety and Security Commission as a means to enhance their expertise, thereby easing public anxiety and promoting public safety.

Third, there was a need to strictly manage the imported and exported goods passing through ports and airports as well as radioactive metals for safety control of radiation. However, the radiation and radioactivity monitors installed at ports, airports and recyclable scape metal handling companies were managed negligently, and there were cases of in which the monitors did not function or malfunctioned. Accordingly, the amended Act required that the operating and management standards for the radiation and radioactivity monitors be set forth in an ordinance of the Prime Minister, and that if a monitor operator failed to comply with the operating and management standards, a corrective action be ordered by the Nuclear Safety and Security Commission. Also, if the operator disobeyed the order, he/she would be imposed a fine, and the monitor concerned would be investigated. As such, the amended Act aimed to better protect citizens from radiation threats.

Section 2 The Main Content of the Legislation on the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters

1. The Main Content of the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」

<The Content of the Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters>

CHAPTER Ⅰ GENERAL PROVISIONS	Article 1 (Purpose) Article 2 (Definitions)

CHAPTER Ⅱ PHYSICAL PROTECTION OF NUCLEAR MATERIALS AND NUCLEAR FACILITIES	Article 3 (Formulation of Physical Protection Measures) Article 4 (Establishment, etc. of Physical Protection Systems) Article 5 (Physical Protection Council for Nuclear Facilities, etc.) Article 6 (Functions of Protection Council) Article 7 (Regional Protection Councils) Article 8 (Classification, etc. of Nuclear Materials Requiring Physical Protection) Article 9 (Responsibilities of Nuclear Business Operators for Physical Protection) Article 9-2 (Education on Physical Protection) Article 9-3 (Physical Protection Drills) Article 10 (Requests for Military Assistance, etc.) Article 11 (Reporting, etc.) Article 12 (Inspections, etc.) Article 13 (Protection during International Transport of Nuclear Materials) Article 13 (Protection during International Transport of Nuclear Materials) Article 13-2 (International Cooperation, etc.) Article 14 (Preparing and Keeping Records) Article 15 (Prohibition, etc. of Divulging Confidential Information) Article 16 (Scope of Application)
CHAPTER Ⅲ RADIOACTIVE DISASTER RESPONSE MEASURES	Article 17 (Types of Radiation Emergencies) Article 18 (Formulation, etc. of National Radiation Disaster Prevention Plans) Article 19 (Formulation, etc. of Regional Radioactive Disaster Prevention Plans) Article 20 (Radiation Emergency Plans of Nuclear Business Operators)

	Article 20-2 (Establishment, etc. of Radiation Emergency Planning Zones) Article 21 (Duties of Nuclear Business Operators) Article 22 (Reporting, etc. on Radioactive Accidents) Article 22-2 (Urgency Measures) Article 23 (Declaration and Report of Radioactive Disasters) Article 24 (Notice of Occurrence of Radioactive Disasters) Article 25 (Establishment of Central Radioactive Disaster Prevention and Response Headquarters) Article 26 (Authority of Director of Central Headquarters) Article 27 (Establishment of Regional Radioactive Disaster Prevention and Response Headquarters) Article 28 (Establishment of On-Site Command Centers for Prevention of Radioactive Disasters) Article 29 (Authority of Directors of On-Site Command Centers) Article 30 (Joint Disaster Prevention and Response Council) Article 31 (Reprimand, etc.) Article 32 (Technical Support, etc. for Prevention of Radioactive Disasters) Article 33 (Cancellation of Declaration of Radioactive Disaster Situations) Article 34 (Relationship with Civil Defense Master Plans, etc.) Article 35 (Radioactive Disaster Response Facilities, etc.)

	Article 36 (Education on Radioactivity Prevention) Article 37 (Radiation Emergency Drill) Article 38 (Inspection) Article 39 (Establishment of National Emergency Radiological and Medical Systems) Article 40 (International Cooperation, etc.) SECTION 3 Follow-Up Measures, etc. Article 41 (Medium- to Long-Term Radiological Impact Assessment, Damage Recovery Plan, etc.) Article 42 (Implementation, etc. of Follow-Up Measures for Radioactive Disasters) Article 43 (Investigation, etc. of Disasters)
CHAPTER Ⅳ SUPPLEMENTARY PROVISIONS	Article 44 (Reporting, Inspections, etc.) Article 45 (Entrustment of Duties) Article 46 (Support for Local Governments, etc.)
CHAPTER Ⅴ PENAL PROVISIONS	Article 47 (Penalty Provisions) Article 48 (Penalty Provisions) Article 49 (Penalty Provisions) Article 50 (Penalty Provisions) Article 51 (Joint Penalty Provisions) Article 52 (Administrative Fines)

(1) Purpose and Definitions

The purpose of legislating the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 was to establish a physical protection system and radiation disaster prevention system in order to safely manage and operate nuclear facilities and nuclear materials, and to establish a management system to make efficient

responses in the event of a radiation disaster at home and abroad, thereby protecting the lives and properties of citizens.

Of particular note, the key definitions provided in the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 were for physical protection, illicit transfer, sabotage, computer and information systems of nuclear facilities, digital infiltration, threat, and radiation emergency among others. The term "physical protection" means all measures to prevent internal and external threats to nuclear materials and nuclear facilities, to detect threats promptly if they are posed, and to minimize damage caused by accidents (Article 2 Subparagraph (3) of the Act). The term "sabotage" means either of the following which may jeopardize human health, safety and property, as well as the environment by emitting radioactive substances or exposing radiation without any due authority (Article 2 Subparagraph 5 of the Act). The term "computer and information systems of nuclear facilities" means the digital control and management system of nuclear facilities and the information and communication network referred to in Article 2 (1) 1 of the 「Act on Promotion of Information and Communications Network」 (Article 2 Subparagraph (2) (2) of the Act). The term "digital infiltration" means the act of attacking the computer and information systems of a nuclear facility using the means of hacking, computer viruses, logic · mail bomb, service rejection or high-output electromagnetic waves to sabotage the nuclear facilities and materials or cause an illicit transfer of nuclear materials that are in use or storage (Article 2 Subparagraph 5 (3) of the Act). The term "threat" means a sabotage, using nuclear materials to harm human life and bodies or inflict damage on property or the environment, or acquiring nuclear materials to compel individuals,

corporations, public institutions, international organizations, or nations to commit a specific act. The term “radiation emergency” means a situation requiring an urgent measure since radioactive materials or radiation have leaked or are likely to leak (Article 2 Subparagraph 6 of the Act).

The term “nuclear business operator” means a person who has obtained a permit to construct electricity generating reactors and facilities related thereto pursuant to Article 10 of the 「Nuclear Safety Act」, a person who has obtained a license to operate electricity generating reactors and facilities related thereto pursuant to Article 20 of the 「Nuclear Safety Act」, or a person who has obtained a permit and license to construct and operate research and educational reactors and facilities related thereto pursuant to Article 30 of the 「Nuclear Safety Act」, a foreign nuclear ship operator who has filed a report on arrival at or departure from any port in the Republic of Korea pursuant to Article 31 of the 「Nuclear Safety Act」, a person who has obtained a license to operate the business of refining and fabrication of nuclear source materials and nuclear fuel materials pursuant to Article 35 (1) of 「Nuclear Safety Act」, a person designated as a spent nuclear fuel processing business operator pursuant to Article 35 (2) of the 「Nuclear Safety Act」, a person determined and announced by the Nuclear Safety and Security Commission under Article 3 of the 「Act on the Establishment and Operation of the Nuclear Safety and Security Commission」 among those who have obtained a license to use or possess nuclear fuel materials pursuant to Article 45 of the 「Nuclear Safety Act」, a person who has obtained a permit and license to construct and operate radioactive waste storage, processing, and disposal facilities and facilities appurtenant thereto pursuant to Article 63 of the

「Nuclear Safety Act」, or any other persons determined by Presidential Decree as necessary to formulate and implement measures for the protection of radioactive materials, nuclear materials or nuclear facilities and disaster countermeasures (Article 2 Subparagraph 10 of the Act).

(2) Physical Protection, etc. of Nuclear Facilities and Nuclear Materials

Article 3 (1) of the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 prescribes that the government shall formulate measures for the physical protection of nuclear materials and nuclear facilities. The physical protection measures must include the information on the protection against the illicit transfer of nuclear materials, measures to locate and collect lost or stolen nuclear materials, prevention of sabotaging nuclear facilities, etc., and measures against radiological effects resulting from sabotaging nuclear facilities, etc. Article 4 (1) of the Act stipulates that in order to implement physical protection measures, the Government shall establish a physical protection system by regularly assessing threats to nuclear facilities, etc. Article 4 (2) of the Act prescribes that the "when deemed necessary for establishing physical protection systems under paragraph (1), the Nuclear Safety and Security Commission may request the heads of the relevant central administrative agencies for cooperation."

(3) Physical Protection Council for Nuclear Facilities, etc. and Regional Protection Councils

Article 5 (1) of the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 prescribes the

establishment of a physical protection council for nuclear facilities, etc. under the control of the Nuclear Safety and Security Commission to deliberate on important national policies on the physical protection of nuclear facilities, etc. The Chairperson of the Nuclear Safety and Security Commission is to serve as the Chairperson of the Protection Council, and each person appointed by the head of each relevant agency from among public officials in general service who belong to the Senior Civil Service of the Ministry of Strategy and Finance, the Ministry of Science, ICT and Future Planning, the Ministry of National Defense, the Ministry of Security and Public Administration, the Ministry of Agriculture, Food and Rural Affairs, the Ministry of Trade, Industry and Energy, the Ministry of Health and Welfare, the Ministry of Environment, the Ministry of Land, Infrastructure and Transport, and the Ministry of Oceans and Fisheries or from among public officials who hold positions equivalent thereto (including general-grade officers equivalent thereto in the Ministry of National Defense), and public officials of the central administrative agencies or the heads of the relevant institutions and organizations determined by Presidential Decree, are to serve as members of the Protection Council (Article 5 (2) of the Act). Article 6 of the Act stipulates that the Protection Council shall deliberate on the important policies on physical protection, establishment of physical protection systems, matters requiring cooperation between relevant institutions for implementing physical protection systems, assessment of physical protection systems, and other matters deemed necessary and referred to meetings of the Protection Council by the Chairperson in connection with physical protection.

Article 7 (1) of the Act prescribes that a City · Do protection council shall be established under the jurisdiction of each Mayor/Do Governor and a Si · Gun · Gu protection council under the jurisdiction of the head of each Si · Gun · Gu in order to deliberate on matters concerning the physical protection of nuclear facilities, etc. determined by Presidential Decree under the control of local governments where such nuclear facilities, etc. are located. Article 7 (2) of the Act states that the Mayor/Do Governor shall become the Chairperson of each City · Do protection council and the head of each Si · Gun · Gu, the Chairperson of each Si · Gun · Gu protection council. Moreover, City · Do protection councils and Si · Gun · Gu protection councils are to deliberate on the important policies on the physical protection of the relevant region, establishment of physical protection systems in the relevant region, and matters requiring cooperation between relevant institutions for implementing physical protection systems in the relevant region (Article 7 (3) of the Act).

(4) Responsibilities of Nuclear Business Operators for Physical Protection

Article 9 (1) of the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 stipulates that the nuclear business operators abide by the Presidential Decree. It stipulates that the nuclear business operators are to obtain approval from the Nuclear Safety and Security Commission for each of the following matters, as prescribed by Presidential Decree, and the same shall also apply where they intend to alter approved matters. However, where they intend to alter any of insignificant matters determined by Ordinance of

the Prime Minister, they are to file a report thereon with the Nuclear Safety and Security Commission.

(5) Education on Physical Protection

Article 9-2 (1) of the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 prescribes that the employees of nuclear business operators and employees of physical protection-related organizations or institutions determined and announced by the Nuclear Safety and Security Commission shall receive education (incl. education on the security of computer and information systems of nuclear facilities) on physical protection conducted by the Nuclear Safety and Security Commission, as prescribed by Presidential Decree, and the Nuclear Safety and Security Commission may designate educational institutions to take charge of education under paragraph (1) (Article 9-2 (2) of the Act).

Article 9-3 (1) of the Act prescribes that nuclear business operators formulate a plan for physical protection drills, as prescribed by Ordinance of the Prime Minister, and implement it after obtaining approval therefor from the Nuclear Safety and Security Commission. Also, nuclear business operators are to implement physical protection drills under paragraph (1) and report the results thereof to the Nuclear Safety and Security Commission. In such cases, the Nuclear Safety and Security Commission may assess the physical protection drills implemented under paragraph (1) (Article 9-3 (2) of the Act). Moreover, Article 9-3 (3) of the Act states that where deemed necessary as a result of the assessment under the latter part of paragraph (2), the Nuclear Safety and Security Commission may direct the relevant nuclear business operator to supplement the

physical protection regulations or to take other necessary measures. In such cases, the nuclear business operator shall report a plan for the implementation thereof and the results of implementation to the Nuclear Safety and Security Commission.

(6) Inspections and Corrective Action Orders on Physical Protection of Nuclear Facilities, etc.

Article 12 (1) of the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 prescribes that nuclear business operators shall have the physical protection of nuclear facilities, etc. inspected by the Nuclear Safety and Security Commission, as prescribed by Presidential Decree. This is a system through which the Nuclear Safety and Security Commission inspects the compliances of nuclear business operators in relation to the protective measures for nuclear materials.

Article 18 (1) of the 「Enforcement Decree of the Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 requires nuclear business operators to receive an initial inspection, regular inspections, transportation inspections and special inspections.

The nuclear business operator must receive an initial inspection, regular inspections, transportation inspections and special inspections. “Initial inspection” means an inspection of the protection of the nuclear facility conducted before bringing in nuclear materials, radioactive materials and/or radioactive wastes into a nuclear facility. The term “regular inspection” means an inspection of protection of nuclear facilities concerned conducted once every two years for each business establishment or site.

The term “transportation inspection” means an inspection of the protection of the nuclear material transported from a location outside the business establishment into the business establishment, or brought from a foreign country to Korea to be transported to the business establishment concerned. The term “special inspection” means an inspection of physical protection of nuclear facilities in which an accident related to physical protection occurred, and such inspection is conducted in case an approval of change was obtained in relation to the physical protection regulations, in accordance with the main text of Article 9 (1) of the Act. The initial inspection and transportation inspection of physical protection of nuclear facilities must be applied at least 14 days of scheduled delivery or transport of the material concerned (Article 18 (3) of the Enforcement Decree of the Act).

The Nuclear Safety and Security Commission may order the nuclear business operator to take corrective action, in case a nuclear business operator is found to fall under any of the following cases as a result of the inspection: Where the nuclear business operator violates the requirements for protection under Article 8 (2); Where physical protection facilities and installations or the operating system thereof under Article 9 (1) 1 fail to meet the standards determined by Ordinance of the Prime Minister; Where the nuclear business operator violates physical protection regulations; Where a measure taken in accordance with a protection emergency plan is insufficient; Where it is necessary to supplement the physical protection regulations or protection emergency plan; Where the nuclear business operator fails to receive education required under Article 9-2 (1); Where the nuclear business operator fails to implement physical protection drills under Article 9-3 (1) according to an approved plan or

to take supplementary measures according to an implementation plan under paragraph (3) of the same Article (Article 12 (2) of the Act).

(7) National and Regional Radiation Disaster Prevention Measures

Article 18 (1) of the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 sets forth the matters in relation to the establishment of a national radioactive disaster prevention plan. It states that the Nuclear Safety and Security Commission shall formulate a plan (hereinafter referred to as "national radioactive disaster prevention plan") for affairs concerning radiation emergencies and radioactive disasters, as prescribed by Presidential Decree, and submit it to Prime Minister, who shall in turn finalize the plan through deliberation thereon by the Central Safety Control Committee under Article 9 of the 「Framework Act on the Management of Disasters and Safety」 and then notify the heads of the related central administrative agencies thereof.

Article 18 (2) of the Act stipulates that the Nuclear Safety and Security Commission shall notify the Mayors/Do Governors or the heads of the Sis/Guns/Gus having jurisdiction over all or part of a radiation emergency plan zone of the national radiation disaster prevention plan finalized under paragraph (1). Article 18 (3) of the Act prescribes that the Nuclear Safety and Security Commission and the heads of the related central administrative agencies shall notify the heads of designated institutions of matters placed under their control in the national radioactive disaster prevention plan.

Article 19 (1) of the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 prescribes that the Mayor/Do Governor or the head of any Si · Gun · Gu having jurisdiction

over all or part of a radiation emergency plan zone shall, in accordance with the national radioactive disaster prevention plan notified pursuant to Article 18 (2), formulate a City · Do radioactive disaster prevention plan or a Si · Gun · Gu radioactive disaster prevention plan, respectively, after integrating the plans of designated institutions under his/her jurisdiction for the management affairs of radioactive disasters, etc. Also, the Mayor/ Do Governor or the head of any Si · Gun · Gu that has formulated a regional radioactive disaster prevention plan is to submit it to the Nuclear Safety and Security Commission and notify the heads of designated institutions in the area under his/her jurisdiction thereof. When the Nuclear Safety and Security Commission deems a regional radioactive disaster prevention plan submitted pursuant to paragraph (2) insufficient for coping with and controlling radioactive disasters, etc., it may request the head of the relevant local government to correct or supplement it (Article 19 (2) and (3) of the Act).

(8) Radiation Emergency Plans and Duties, etc. of Nuclear Business Operators

Article 20 (1) of the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 prescribes that "every nuclear business operator shall formulate a radiation emergency plan, as prescribed by Presidential Decree, to prepare for the occurrence of radioactive disasters, etc. in nuclear facilities, etc. and obtain approval therefor from the Nuclear Safety and Security Commission before using the nuclear facilities, etc., and the same shall also apply where he/she intends to alter it: Provided, That when he/she intends to alter any of insignificant matters determined by Ordinance of the Prime Minister,

he/she shall file a report thereon with the Nuclear Safety and Security Commission."

Article 20 (2) of the Act prescribes that "when a nuclear business operator intends to formulate or alter a radiation emergency plan, he/she shall give prior notice of the details thereof to the Mayors/Do Governors and the heads of the Si · Gun · Gu having jurisdiction over all or part of a radiation emergency plan zone and the heads of designated institutions. In such cases, the relevant Mayors/Do Governors, the heads of the relevant Si · Gun · Gu, and the heads of relevant designated institutions may submit their opinions on the radiation emergency plan of the relevant nuclear business operator to the Nuclear Safety and Security Commission: Provided, That the aforesaid shall not apply where a nuclear business operator intends to alter any of insignificant matters determined by Ordinance of the Prime Minister."

In accordance with Article 21 (1) of the Act, nuclear business operators shall, in the event of a radiation emergency, prevent radioactive disasters, etc. and the proliferation thereof by reporting a radiation emergency to the Nuclear Safety and Security Commission and the competent Mayors/Do Governors and the heads of the competent Si · Gu n · Gu in accordance with procedures determined by the relevant radiation emergency plan, establishing and operating organizations to prepare for radioactive disasters, etc., disclosing information on radioactive disasters, etc. which have occurred, taking emergency measures for preventing the spread of radiation accidents and radiation protection measures necessary for emergency response personnel, etc. to reduce their exposure to radiation, providing assistance, such as dispatching disaster prevention personnel, consulting on technical matters, and lending radiation measuring

devices, if requested by the heads of regional radioactive disaster prevention and response headquarters under Article 27 and the heads of designated institutions, securing personnel and organizations to take full charge of affairs to prepare for radioactive disasters, etc., and undertaking any other matters deemed necessary for coping with radioactive disasters, etc., which are determined by Presidential Decree. However, the provisions regarding the establishment and operation of organizations to prepare for radioactive disasters, etc. and securing personnel and organizations to take full charge of affairs to prepare for radioactive disasters, etc. do not apply to small nuclear business operators determined by Presidential Decree.

Article 35 (1) of the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 requires nuclear business operators to be equipped with radiation or radioactivity monitoring facilities, radiation protection equipment, radiological contamination removal facilities and equipment, facilities for monitoring and assessing the amount of radioactive substances discharged, facilities for emergency response, such as main control, emergency technical support, emergency operational support, and emergency response, facilities for emergency communications with relevant institutions and warning, and other facilities determined by the Nuclear Safety and Security Commission as deemed necessary to cope with radioactive disasters. However, the provisions in regard to securing facilities for monitoring and assessing the amount of radioactive substances discharged and facilities for emergency response, such as main control, emergency technical support, emergency operational support, and emergency response do not apply to small nuclear business operators determined by Presidential Decree.

(9) Urgency Measures for Radioactive Accidents and Declaration of Radioactive Disasters, etc.

Article 22-2 (1) of the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 stipulates that in case the Nuclear Safety and Security Commission deems it necessary to take urgency measures to protect citizens' lives and health or the environment from a radioactive accident or the actual or possible spread of radioactive contamination, it may take measures necessary for removing sources of radioactive contamination and preventing the spread of radioactive contamination. Also, Article 23 (1) requires the Nuclear Safety and Security Commission to declare the occurrence of such radiation disaster without delay in case the amount of the radiation exposure measured or assessed is above the standard determined by Presidential Decree, the measured airborne radiation dose rate or the degree of contamination is above the level prescribed by Presidential Decree or any other cases where the Nuclear Safety and Security Commission deems it necessary to declare the occurrence of a radioactive disaster. Furthermore, when the Nuclear Safety and Security Commission declares the occurrence of a radioactive disaster, it must report without delay the following to the President via the Prime Minister the summary of the situation of a radioactive disaster, the zones in which urgent response measures against the radioactive disaster need to be taken, and urgent response measures taken against a radioactive disaster.

Article 32 (1) of the Act states that the technical support headquarters for radiation protection be established under the control of the President of the Korea Institute of Nuclear Safety established under the 「Korea

Institute of Nuclear Safety Act」 to provide technical support necessary for the control of a radioactive disaster if such disaster occurs. In other words, the radiation emergency medical support headquarters are to be established under the control of the President of the Korea Institute of Radiological and Medical Sciences under Article 13-2 of the 「Radiation and Radioisotope Use Promotion Act」 to take medical measures for persons who suffer or are likely to suffer from exposure to radiation generated by radioactive disasters (Article 32 (2) of the Act).

(10) Establishment of Central Radioactive Disaster Prevention and Response Headquarters and Regional Radioactive Disaster Prevention and Response Headquarters

Article 25 (1) of the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 prescribes that the Nuclear Safety and Security Commission shall establish the Central Radioactive Disaster Prevention and Response Headquarters under its jurisdiction to take urgent response measures for the prevention of radioactive disasters. The Chairperson of the Nuclear Safety and Security Commission shall serve as the head of the Central Headquarters (hereinafter referred to as "Director of the Central Headquarters"); and the Vice Minister of Strategy and Finance, the Vice Minister of Education, the Vice Minister of Science, ICT and Future Planning, the Vice Minister of Foreign Affairs, the Vice Minister of National Defense, the Vice Minister of Security and Public Administration, the Vice Minister of Agriculture, Food and Rural Affairs, the Vice Minister of Trade, Industry and Energy, the Vice Minister of Health and Welfare, the Vice Minister of Environment, the Vice Minister of Land, Infrastructure

and Transport and the Vice Minister of Oceans and Fisheries, the Vice Minister of Public Safety and Security, Vice Administrator of the Office for Government Policy Coordination, Minister of Food and Drug Safety, Commissioner of Police, Administrator of Korea Meteorological Administration, Deputy Minister of Maritime Security of the Ministry of Public Safety and Security, and public officials of the central administrative agencies or the heads of the relevant institutions and organizations determined by Presidential Decree, shall serve as members of the Central Headquarters (Article 25 (2) of the Act). Article 25 (3) of the Act prescribes that the Central Headquarters shall have one secretary who shall be appointed by the director of the Central Headquarters from among public officials under the control of the Nuclear Safety and Security Commission.

Article 27 (1) of the Act stipulates that when a Mayor/Do Governor or the head of a Si · Gun · Gu having jurisdiction over all or part of a radiation emergency plan zone receives a report on a radiation emergency under Article 21 (1) 1 or a notice of the occurrence of a radioactive disaster under Article 24 (1), he/she shall establish a City/Do radioactive disaster prevention and response headquarters and a Si · Gun · Gu radioactive disaster prevention and response headquarters (hereinafter referred to as "regional headquarters"), respectively. Also, each Mayor/Do Governor or the head of each Si/Gun/Gu shall become the director of each regional headquarters (Article 27 (2)).

Article 28 (1) prescribes that the Nuclear Safety and Security Commission shall establish on-site command centers for prevention of radioactive disasters (hereinafter referred to as "on-site command center") in areas adjacent to locations where electricity generating reactors and

other nuclear facilities determined by Presidential Decree are located for the prompt command and control of radioactive disasters, etc., and collection and notification of information on disasters. The head of each on-site command center are to be appointed by the Nuclear Safety and Security Commission from among public officials belonging thereto, and public officials, executives, or employees of the central administrative agencies determined by Presidential Decree, local governments, and designated institutions (hereinafter referred to as "relevant officer") shall be dispatched to each on-site command center (Article 28 (2) of the Act). An allied information center is to be established and operated in each on-site command center to provide accurate and uniform information on radioactive disasters, etc., provided that allied information centers shall be established and operated in Si/Gun/Gu radioactive disaster prevention and response headquarters until they are in service (Article 28 (3) of the Act).

Article 34 (1) of the Act prescribes that the national radioactive disaster prevention plans, City/Do radioactive disaster prevention plans, or Si · Gun · Gu radioactive disaster prevention plans shall be deemed master plans under Article 11 of the 「Framework Act on Civil Defense」, City/Do plans under Article 13 of the same Act, or plans for the field of radioactive disasters included in Si · Gun · Gu plans under Article 14 of the same Act, respectively. Also, in accordance with Article 34 (2), national radioactive disaster prevention plans, City/Do radioactive disaster prevention plans, or Si · Gun · Gu radioactive disaster prevention plans under this Act are to be deemed national safety control master plans under Article 22 of the 「Framework Act on the Management of Disasters and Safety」, City/Do safety control plans under Article 24 of the same

Act, or plans for the field of radioactive disasters included in Si · Gun · Gu safety control plans under Article 25 of the same Act, respectively. The Central Headquarters is to be deemed the central accident response headquarters under Article 14 of the 「Framework Act on the Management of Disasters and Safety」 and regional headquarters as regional accident response headquarters under Article 16 of the same Act (Article 34 (3) of the Act).

(11) Inspection and Correction Orders, Reports and Inspections of Nuclear Business Operators

Article 38 (1) of the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 prescribes that the Nuclear Safety and Security Commission may inspect nuclear business operators regarding the matters referred to in Articles 21 and 35 through 37. This is followed by the provision that states “the results of an inspection under paragraph (1) show that a nuclear business operator falls under any of the following circumstances, the Nuclear Safety and Security Commission may order the relevant nuclear business operator to correct it: where the matters referred to in each subparagraph of Article 21 (1) fail to satisfy the standards under paragraph (2) of the same Article; where the facilities and equipment under each subparagraph of Article 35 (1) fail to satisfy the standards under paragraph (2) of the same Article; where any employee of a nuclear business operator fails to receive education on radioactivity prevention under Article 36 (1); or where a radiation emergency drill under Article 37 (3) is not implemented in accordance with the approved plan.

Article 44 (1) of the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 prescribes that if the Nuclear Safety and Security Commission deems necessary for enforcing this Act, it may order the following persons to file a report or submit documents regarding their duties or supplement submitted documents, or instruct or supervise their duties: Mayors/Do Governors and heads of Si · Gun · Gu; heads of designated institutions; nuclear business operators; heads of the emergency radiological and medical center and emergency radiological and medical institutions under Article 39 (2); heads of institutions performing duties concerning physical protection and radioactive disasters; and persons determined by Presidential Decree from among persons handling or conducting relevant research on nuclear materials among internationally controlled materials under Article 15 of the Nuclear Safety Act.

In addition, Article 44 (2) prescribes that in any of the following cases, the Nuclear Safety and Security Commission may assign its subordinate public officials to inspect the relevant places of business, documents, facilities, and other necessary articles, make inquiries to interested persons, and collect samples in the minimum quantity necessary for inspection: when necessary to conduct factual verification in a report or documents under paragraph (1); when deemed necessary for implementing physical protection systems and preventing radioactive disasters; or when necessary for conducting various inspections under this Act. Additionally, if any violation of this Act, the 「Convention on the Physical Protection of Nuclear Material」, the 「Convention on Early Notification of a Nuclear Accident」, the 「Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency」, or any other international convention

or bilateral agreement is discovered as a result of the inspection and inquiries under paragraph (2), the Nuclear Safety and Security Commission may issue an order to correct such violation (Article 44 (3) of the Act).

(12) Penal Provisions

Under Article 47 (1) of the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」, any person who jeopardizes human life and bodies or harms property and the environment by accepting, carrying, possessing, keeping, manufacturing, using, transporting, remodeling, disposing of, or dispersing any radioactive substance, nuclear material, nuclear device, radiological dispersal device, or radiation emission device without any due authority shall be punished by imprisonment with prison labor for life or for at least one year. Also, any person who commits a crime under Article 329, 333, 347, 350, or 355 (1) of the 「Criminal Act」 in connection with any radioactive substance, nuclear material, nuclear device, radiological dispersal device, or radiation emission device shall be given aggravated punishment up to the half of the penalty determined by the relevant Article of the same Act (Article 47 (2) of the Act). Article 47 (3) of the Act stipulates that any person who commits sabotage or digital infiltration shall be punished by imprisonment with prison labor for a period from one to ten years. According to Article 47 (4), any person who commits any of the following acts with the intention of compelling an individual, corporation, public institution, international organization, or nation to perform a specific act he/she/it has no obligation to do or of interfering with him/her/it in exercising his/her/its authority shall be punished as follows: a person who uses any radioactive substance, nuclear material, nuclear

device, radiological dispersal device, or radiation emission device shall be punished by imprisonment with prison labor for a fixed term of at least two years; and a person who causes the leakage of any radioactive substance during use of, or by damaging, any nuclear facility or any facility related to radioactive substances (referring to any facility or device that serves to produce, store, process, dispose of, or transport radioactive substances) shall be punished by imprisonment with prison labor for life or for at least three years.

Of particular note, any person who threatens to commit a crime under paragraph (1), (3), or (4) against the general public shall be punished by imprisonment with prison labor for not more than seven years or by a fine not exceeding ten million won (Article 47 (5) of the Act). Furthermore, any person who organizes a syndicate or group with the intent to commit a crime under any of paragraphs (1) and (3) through (5) or who joins such syndicate or group or acts as a member of such syndicate or group shall be punished as follows: a ring leader shall be punished by death or imprisonment with prison labor for life or for at least ten years; a leading member shall be punished by imprisonment with prison labor for life or for at least seven years; while other members shall be punished by imprisonment with prison labor for a fixed term of at least two years. Also, any person who carries or manufactures any radioactive substance, nuclear material, nuclear device, radiological dispersal device, or radiation emission device with the intent to offer it for a crime under any of paragraphs (1) and (3) through (5) shall be punished by imprisonment with prison labor for not more than ten years. On the other hand, any person who injures any other person by committing a crime under paragraph (1), (3), or (4) shall be punished by

imprisonment with prison labor for life or for at least three years. If such person causes any other person to die, he/she shall be punished by death or imprisonment with prison labor for life or for at least five years. Article 47 (9) and (10) prescribe that any person who has attempted a crime under any of paragraphs (1) through (4) shall be punished, and any person who plots or conspires to commit a crime under paragraph (1) or (3) shall be punished by imprisonment with prison labor for not more than five years, provided if such person willingly surrenders, the punishment shall be mitigated or exempted.

2. The Main Content of the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」

<The Content of the Act on Protective Action Guidelines Against Radiation in the Natural Environment>

CHAPTER Ⅰ GENERAL PROVISIONS	Article 1 (Purpose) Article 2 (Definition) Article 3 (Responsibility of State) Article 4 (Relationship to other Acts)
CHAPTER Ⅱ COMPREHENSIVE PLAN FOR PROTECTION FROM ENVIRONMENTAL RADIATION	Article 5 (Formulation of Comprehensive Plan for Protection from Environmental Radiation) Article 6 (Formulation, etc., of Annual Implementation Plans) Article 7 (Implementation of Projects for Research and Development with regard to Environmental Radiation) Article 8 (Preparation, Distribution, etc., of Safety Manual)

CHAPTER III MANAGEMENT OF SOURCE MATERIALS, BY-PRODUCTS FROM PROCESSING, AND PROCESSED PRODUCTS	Article 9 (Registration of Persons Responsible for Handling Source Materials or By-Products from Processing) Article 10 (Succession to Status of Person Responsible for Handling) Article 11 (Control of Export and Import of Source Materials or By-Products from Processing) Article 12 (Keeping and Preserving Records of Current Status of Distribution) Article 13 (Treatment, Disposal, or Recycling of By-Products from Processing) Article 14 (Matters to be observed in Handling and Managing Source Materials or By-Products from Processing) Article 15 (Safety Standards of Processed Products) Article 16 (Measures against Non-Conforming Processed Products) Article 17 (Order to Dispose of Defective Processed Products) Article 18 (Safety Control, etc., of Cosmic Rays)
CHAPTER IV INSTALLATION AND OPERATION OF MONITORS OF RADIATION AND RADIOACTIVITY	Article 19 (Installation, etc., of Monitors in Airports and Ports) Article 20 (Installation of Monitors by Persons Handling Recyclable Scrap Metal) Article 21 (Detection and Analysis of Suspected Substances) Article 22 (Measures against Suspected Substances)
CHAPTER V SUPPLEMENTARY PROVISIONS	Article 23 (Survey and Analysis of Actual Conditions of Safety Control of Environmental Radiation) Article 24 (Reporting and Inspection) Article 25 (Management, etc., of Information about

	Environmental Radiation) Article 26 (Development of Educational Programs) Article 27 (Designation, Operation, etc., of Institutions Specializing in Environmental Radiation) Article 28 (Entrusting Business Affairs)
CHAPTER VI PENAL PROVISIONS	Article 29 (Penal Provisions) Article 30 (Joint Penalty Provision) Article 31 (Administrative Fine)

(1) Purpose and Definitions

The 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 was enacted for the purpose of setting forth the matters in regard to safety control of radiation in order to protect public health and the environment, thereby improving the quality of life and contributing to public safety. Article 2 Subparagraph (1) defined "environmental radiation" as radiation emitted from source materials, emitted from natural radionuclides contained in source materials, by-products from processing, and processed products: Provided, That radiation emitted from nuclear materials controlled pursuant to the Nuclear Safety Act shall be excluded herefrom; radiation radiated from the sun or universe into the earth's atmosphere (hereinafter referred to as "cosmic rays"); radiation emitted from rock or soil on the surface of the earth (hereinafter referred to as "terrestrial radiation"); and radiation emitted from a radioactive substance contained in scrap metal collected within the Republic of Korea or in a foreign country and sold or recycled (hereinafter referred to as "recyclable scrap metal"). The term "source material" means a material

that contains a naturalradionuclide, such as Uranium 235, Uranium 238, Thorium 232, and nuclides in radioactive decay series, or Potassium 40, if the activity concentration and quantity of such material exceed the activity concentration and quantity specified and publicly notified by the Nuclear Safety and Security Commission established under Article 3 of the 「Act on the Establishment and Operation of the Nuclear Safety and Security Commission」 (Article 2 Subparagraph (2) of the Act). The term "by-product from processing" means a material that is produced incidentally from a facility that treats a source material or any other material, and that contains a natural radionuclide whose activity concentration exceeds the level specified and publicly notified by the Nuclear Safety and Security Commission (Article 2 Subparagraph (3) of the Act). Article 2 Subparagraph 4 defines "processed product" as a product manufactured by processing a source material or a by-product from processing or by using a source material or a by-product as a raw material.

(2) Formulation of Comprehensive Plan for Protection from Environmental Radiation, etc.

Article 5 (1) of the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 stipulates that in order to protect citizen's health and environment from environmental radiation, the Nuclear Safety and Security Commission shall formulate a five-year comprehensive plan for environmental radiation protection, consulting with the heads of related central administrative agencies. A comprehensive plan is to include the objectives, and the basic direction, of policies on protection from environmental radiation, and the matters related to environmental protection

from environmental radiation, the current status and prospects of safety control of environmental radiation, research and development with regard to environmental radiation, surveys and analysis on source materials, by-products from processing, and processed products, treatment, disposal, or recycling of by-products from processing, matters necessary to establish a system for safety control of cosmic rays, terrestrial radiation, etc., and other matters specified by Presidential Decree as necessary for safety control of environmental radiation (Article 5 (2) of the Act).

In addition, Article 6 (1) of the Act prescribes that the Nuclear Safety and Security Commission shall formulate an annual implementation plan each year for the relevant comprehensive plan, consulting with the heads of related central administrative agencies, as prescribed by Presidential Decree, and shall notify the heads of related central administrative agencies of the plan.

Moreover, in relation to the implementation of research and development projects on environmental radiation, Article 7 (1) stipulates that in order to efficiently implement a comprehensive plan, the Nuclear Safety and Security Commission may execute an agreement with an institution or organization specified in any subparagraph of Article 14 (1) of the 「Basic Research Promotion and Technology Development Support Act」 to authorize such institution or organization to perform a research and development project with regard to environmental radiation. Meanwhile, the government may make contributions for all or some of expenses incurred in performing a research and development project (Article 7 (2) of the Act).

(3) Management of Source Materials, By-Products from Processing and Processed Products

1) Registration of Persons Responsible for Handling Source Materials or By-Products from Processing

Article 9 (1) of the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 sets forth the matters in relation to the registration of persons responsible for handling source materials or by-products from processing. To be more specific, a person who intends to mine for, export, import, or sell source materials, or who intends to export, import, or sell by-products from processing, or who operates a facility that produces by-products from processing, or who intends to treat, dispose of, or recycle by-products from processing shall register the type and quantity of source materials or by-products from processing and other relevant details with the Nuclear Safety and Security Commission, except that the specific scope of persons and matters subject to registration shall be prescribed by Presidential Decree, taking into consideration the activity concentration, quantity, and other relevant factors of source materials or by-products from processing. Also, when a person who has registered pursuant to Article (1) of the Act (hereinafter referred to as “person responsible for handling”) intends to change any registered matter, he/she must file a report on such change with the Nuclear Safety and Security Commission.

2) Control of Export and Import of Source Materials or By-Products from Processing

Article 11 (1) of the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 prescribes that whenever a person

responsible for handling exports or imports source materials or by-products from processing, he/she shall file a declaration thereof with the Nuclear Safety and Security Commission whenever he/she exports or imports such materials or by-products, and as for the procedure for declarations of exportation or importation, it shall be prescribed by the Nuclear Safety and Security Commission, consulting with the heads of related central administrative agencies thereon (Article 11 (2) of the Act).

3) Treatment, Disposal, or Recycling of By-Products from Processing

Article 13 (1) of the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 stipulates that if a person responsible for handling intends to treat, dispose of, or recycle by- products from processing, he/she shall report thereon with the Nuclear Safety and Security Commission, as prescribed by Ordinance of the Prime Minister. Also, matters necessary for the treatment, disposal, or recycling of by-products from processing are to be prescribed by Presidential Decree.

4) Matters to Be Observed in Handling and Managing Source Materials or By-Products from Processing, Safety Standards of Processed Products and Safety Control of Cosmic Rays

Article 14 (1) of the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 prescribes that a person responsible for handling or a manufacturer specified in Article 15 shall observe the following provisions in handling and managing source materials or by-products from processing in order to protect workers' health and environment: install facilities for preventing fire and flood or take other necessary measures therefor; install facilities for preventing source materials or by-products from processing from being scattered into the air

or take other necessary measures therefor; measure and control the activity concentration or level of radiation at a place in which source materials or by-products from processing are handled; and survey and analyze the level of annual exposure of workers, who handle and manage source materials or by-products from processing, to environmental radiation.

Moreover, in relation to the safety standards of processed products, a person who manufactures, exports, or imports processed products must manufacture, export, or import such products in conformity with the following standards (hereinafter referred to as "safety standards"): ensure that substances containing natural radionuclides in a processed product are not scattered or leaked into the air; ensure that natural radionuclides contained in a processed product are not transferred to a human body by contact with such processed product; ensure that the radiation exposure dose emitted from a processed product to people does not exceed the limit prescribed and publicly notified by the Nuclear Safety and Security Commission; and ensure the concentration and volume of radioactivity contained in a processed product do not exceed the limit prescribed and publicly notified by the Nuclear Safety and Security Commission.

Furthermore, the matters related to the safety control of cosmic rays are stipulated in Article 18 of the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」. Article 18 (1) of the Act prescribes that an air carrier (referred to the individual managing and running an international air transportation business in accordance with Article 112 (1) of the 「Aviation Act」) shall endeavor to protect the health and safety of cockpit crew and cabin crew who are likely to be exposed to cosmic rays, while the scope of cockpit crew and cabin crew is to be prescribed by Presidential Decree, taking into consideration flight

routes, cruising altitude, and frequency of flights (Article 18 (2) of the Act). Article 18 (3) stipulates that an air carrier shall survey and analyze the exposure dose of crew to cosmic rays on each flight route and the annual exposure dose of cosmic rays of crew. Moreover, an air carrier shall perform investigation, analysis and recording of annual radiation exposure of crew resulting from cosmic radiation, calculated based on the flight routes, flight altitude, latitude and longitude, flight time for crew, impact from solar activity, and other matters necessary for the assessment of radiation exposure, take measures necessary to lower radiation exposure of crew and provide information on radiation exposure of crew resulting from cosmic radiation so as to take measures to protect the health and safety of the crew in reflection of the results of the investigation and analysis of a radiation exposure for each flight route and total radiation exposure in a year.

5) Measures against Non-Conforming Processed Products and Vicarious Execution

In relation to the measures against non-conforming processed products, Article 16 (1) of the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 prescribes that if a manufacturer discovers that a processed product does not conform to the safety standards, he/she shall disclose his/her discovery and shall take measures, such as repair, exchange, recall, and scrapping, as prescribed by Presidential Decree, and that a manufacturer who takes any measure referred to in paragraph (1) shall report thereon to the Nuclear Safety and Security Commission, as prescribed by Ordinance of the Prime Minister. Article 17 (2) of the Act prescribes that if a person to whom

an order has been issued under paragraph (1) does not comply with the order, the Nuclear Safety and Security Commission may make a vicarious execution under the 「Administrative Vicarious Execution Act」.

(4) Installation and Operation of Radiation and Radioactivity Monitors in Airports and Ports

1) Installation, etc., of Monitors in Airports and Ports

Article 19 (1) of the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 stipulates that the Nuclear Safety and Security Commission shall install and operate monitors of radiation and radioactivity, consulting with the heads of central administrative agencies, for safety control of environmental radiation falling under items (a) and (d) of subparagraph 1 of Article 2. Article 19 (2) of the Act prescribes that an air transportation business operator defined in subparagraph 35 of Article 2 of the 「Aviation Act」 or a person who operates harbor facilities defined in subparagraph 5 of Article 2 of the 「Harbor Act」 shall cooperate with the Nuclear Safety and Security Commission in installing monitors pursuant to paragraph (1) (Article 19 (3) of the Act).

Article 20-2 (1) prescribes that when an airport operator, air carrier, or harbor facility operator, to whom the operation of monitors is entrusted under Article 19 (3), or a person handling recyclable scrap metal, who has installed monitors pursuant to Article 20 (1), detects any substance with activity concentration exceeding or suspected of exceeding the level specified and publicly notified by the Nuclear Safety and Security Commission (hereinafter referred to as “suspected substance”), he/she shall

report the fact to the Nuclear Safety and Security Commission, as prescribed by Ordinance of the Prime Minister.

Also, the matters related to the installation of monitors by persons handling recyclable scrap metal are prescribed in Article 20 (1) of the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」, which prescribes that a person who sells or recycles recyclable scrap metal shall install and operate monitors for safety control of environmental radiation.

2) Detection and Analysis of Suspected Substances

Article 21 (1) of the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 prescribes that when a monitor operator detects any substance with activity concentration exceeding or suspected of exceeding the level specified and publicly notified by the Nuclear Safety and Security Commission, he/she shall report the fact to the Nuclear Safety and Security Commission the matters related to the date and location of detecting the suspected substance, the person possessing the suspected substance, the radiation level and radioactive nuclide of the suspected substance, the location of isolated storage of the suspected substance, matters of import and export such as the exporting country, importing and exporting companies, or the domestic distributor (limited to recyclable metal handlers), and other matters prescribed by Ordinance of the Prime Minister, provided that the foregoing shall not apply where a suspected substance is detected from a source substance or a by-product from processing declared pursuant to Article 11 or from a nuclear substance or radioactive isotope that underwent the process for exportation or importation under Article 107 of the 「Nuclear Safety Act」.

Article 21 (2) of the Act stipulates that upon receipt of a report pursuant to paragraph (1), the Nuclear Safety and Security Commission shall investigate and analyze the following matters, as prescribed by Ordinance of the Prime Minister: the concentration and type of radioactivity contained in the suspected substance; the purpose of use and usage of the suspected substance; and matters necessary for measures to be taken pursuant to Article 22 (1). As such, when the Nuclear Safety and Security Commission receives a report from a monitor operator that a suspected substance has been detected by a monitor installed at an airport or port, it may request the head of a related central administrative agency necessary data and materials to check the matters prescribed in Paragraph (1) Subparagraph 5, and the head of the related central administrative agency must abide by the request if there are no justifiable reasons to do otherwise (Article 21 (3) of the Act).

3) Measures against Suspected Substances

Article 22 (1) of the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 stipulates that if a source material or by-product from processing not declared for exportation or importation pursuant to Article 11 is detected by a monitor, if it is discovered, as a result of the investigation and analysis conducted pursuant to Article 21 (2), that a processed product containing a suspected substance does not conform to the safety standards, or if a suspected substance contained in recyclable scrap metal is detected by a monitor, the Nuclear Safety and Security Commission may order the relevant person responsible for handling, manufacturer, or person handling recyclable scrap metal to repair, return, or collect such substance or to take other necessary

measures or may take such measures on its own. Article 22 (2) of the Act states that if a person to whom an order has been issued under paragraph (1) does not comply with the order, the Nuclear Safety and Security Commission may take necessary measures pursuant to the 「Administrative Vicarious Execution Act」.

(5) Survey and Analysis of Actual Conditions of Safety Control of Environmental Radiation

Article 23 (1) of the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 prescribes that in order to monitor the actual conditions of safety control of environmental radiation, the Nuclear Safety and Security Commission shall formulate and implement a plan for inspection of the current status of distribution of source materials and by-products from processing and the current status of manufacturing, exportation, and importation of processed products, the radioactivity concentration and the degree of environmental pollution around the facilities operated by a person responsible for handling or manufacturer, or other matters necessary for safety control of environmental radiation, every year, as prescribed by Presidential Decree.

Article 23 (2) of the Act states that when the Nuclear Safety and Security Commission intends to conduct an inspection on matters specified in paragraph (1), it shall notify the relevant person responsible for handling or manufacturer or the person selected as one subject to the inspection of the inspection plan, including the date and time of, reasons for, and details of inspection, by not later than seven days before the scheduled date of inspection. Also, Article 23 (3) of the Act prescribes that the public official who conducts an inspection pursuant to paragraph

(1) or the person to whom business affairs are entrusted under Article 28 shall produce a certificate indicating his/her authority and a document stating the date and time of inspection, the inspector's name, the duration and purposes of entry, and other relevant facts to people involved. This is followed by the provision that when the Nuclear Safety and Security Commission formulates a comprehensive plan or an annual implementation plan under Article 6, it shall factor in outcomes of the survey and analysis of actual conditions of environmental radiation (Article 23 (4) of the Act).

(6) Management, etc., of Information about Environmental Radiation

Article 25 (1) of the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 prescribes that the Nuclear Safety and Security Commission shall establish and operate a comprehensive information system for environmental radiation to systematically manage information about safety control of environmental radiation, such as the current status of distribution of source materials or by-products from processing, the current status of manufacturing or exportation and importation of processed products, and the current status of safety control of cosmic rays. Also, in order to efficiently manage and operate the comprehensive information system for environmental radiation referred to in paragraph (1), the Nuclear Safety and Security Commission may demand the head of a related central administrative agency to provide data as necessary, and the head of a related central administrative agency shall comply with such demand, except in extenuating circumstances.

(7) Designation, Operation, etc., of Institutions Specializing in Environmental Radiation

Article 27 (1) of the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 prescribes that the Nuclear Safety and Security Commission may designate an institution that has expertise in performing research and investigation regarding safety control of environmental radiation, such as surveys and analysis of activity concentration of natural radionuclides, at the request of a person responsible for handling, manufacturer, or a person handling recyclable scrap metal, as an institution specializing in environmental radiation. Also, an entity that intends to be designated as a specialized institution under paragraph (1) shall retain facilities, equipment, and human resources in conformity with the standards prescribed by Presidential Decree (Article 27 (2) of the Act).

This is followed by the provision that a person intending to be designated as a specialized institution shall prepare a written application and supplementary document specified by Ordinance of the Prime Minister and shall submit them to the Nuclear Safety and Security Commission in Article 27 (3) of the Act. Article 27 (4) states that a person responsible for handling or other person specified in any provision of Articles 9 through 15 requests a specialized institution under paragraph (1) to measure activity concentration in order to ensure the eligibility for registration and the reliability of outcomes of measurement, the specialized institution may assist such person. Furthermore, the Nuclear Safety and Security Commission may fully or partially contribute to, or subsidize, a

specialized institution designated under paragraph (1) for expenses incurred in carrying out business affairs as a specialized institution (Article 27 (5) of the Act).

Section 3 Sub-conclusion

In line with the global trend of reinforcing physical protection systems, the Republic of Korea enacted the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 as Act No. 6873 on May 15, 2003 to prepare the legal and institutional frameworks for establishing and operating a domestic physical protection system. However, further reinforcement of information security in addition to physicla protections was called for due to the suspended operation of nuclear facilities in Korea caused by a computer worm attack by Iran in 2010, and a series of hacking attempts on the nuclear facilities in Korea in late 2014. This was because in the event of a malicious attack by a terrorist group with the aim of destroying a nuclear facility to leak radioactive materials or seize nuclear materials, it could potentially lead to numerous casualties and sudden loss of properties.

As such, amidst the present circumstances in which there are increasing internal and external potential threats against nuclear facilities worldwide, it was necessary to establish a physical protection system in connection with safety in the designing, engineering and construction stages of nuclear facilities to guarantee safety and security of such nuclear facilities. In order to devise physical protection and disaster prevention measures for nuclear facilities, the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 was enacted.

Of particular note, the key matters stipulated in the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 of the Republic of Korea include the physical protection of nuclear materials and facilities (Article 3), physical protection council for nuclear facilities and regional protection councils (articles 5 and 7), responsibilities of nuclear business operators for physical protection (Article 9), education on physical protection (Article 9-2), inspection and correction order on physical protection of nuclear facilities, etc. (Article 12), national and regional radiation disaster prevention plans (Article 18), radiation emergency plans and duties of nuclear business operators (Article 20), urgent measures for radioactivity accidents and declaration of radiation disasters (Article 22), establishment of the Central Radioactive Disaster Prevention and Response Headquarters and Regional Radioactive Disaster Prevention and Response Headquarters (articles 25 and 27), inspections of and correction orders for nuclear business operators, reporting and inspections (articles 38 and 44), penal provisions (Article 47), and more, which provide for physical protection of nuclear facilities, etc. and the disaster prevention measures in the event of an accident.

Accordingly, in relation to the legislation on the physical protection and radioactive disaster prevention of nuclear facilities and environmental radiation in the Republic of Korea, the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」 is characterized by the fact that it provides for follow-up measures in relation to disaster prevention plans in the event accidents and for the establishment of a physical protection system in link with the design and construction stages in order to guarantee safety and security of nuclear facilities amidst the growing internal and external threats.

Meanwhile, the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 was enacted to set forth matters related to the safety control of radiation that people can be exposed to in their living spheres, thereby protecting public health and the environment and improving the quality of life. Under this Act, "environmental radiation" means radiation emitted from soil or rocks, cosmic rays, and radiation emitted from a radioactive substance contained in scrap metal. The reason, environmental radiation is being controlled is that heating mats and anion-emitting products that contain natural radioactive source materials (uranium, thorium, and potassium) are used commonly. In addition, steel products (dish rack) that contain artificial radionuclides (cobalt and cesium, etc.) also needed to be placed under safety control due to the detection of radiation emitted therefrom. Accordingly, the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 was enacted in Korea in 2012.

Of particular note, the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 stems from the cases in which there was detection of radiation from minerals used as source materials for health-enhancing products such as fitness wristbands and anion mats that had been claimed to be beneficial for the body in 2007. In order to prevent such cases, the Nuclear Safety and Security Commission needed to set forth the safety management measures in relation to the method of using natural radionuclides and managing the storage and facilities thereof.

Accordingly, the key matters prescribed in the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」 include

the formulation of comprehensive plans for protection from environmental radiation, etc. (articles 5, 6, 7), registration of persons responsible for handling source materials, by-products from processing or processed products (Article 9), control of export and import of source materials or by-products from processing (Article 11), treatment, handling and recycling of by-products from processing (Article 13), matters to be observed in handling and managing source materials or by-products from processing and safety standards for processed products (Article 14), measures against non-conforming processed products and vicarious execution (Article 16), detection and analysis of suspected substances (Article 21), measures against suspected substances (Article 22), survey and analysis of actual conditions of safety control and environmental radiation (Article 23), management, etc. of information about environmental radiation (Article 25), designation and operation, etc. of institutions specializing in environmental radiation (Article 27), etc.

Recently, the government of the Republic of Korea amended the 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」, with the inclusion of cosmic rays as being subject to management. General citizens using airplanes receive little exposure to cosmic rays, where as crews who fly on airplanes often due to their jobs require better management. As such, provisions were included so that the crews of air carriers are educated on cosmic rays, and manage the annual radiation exposure dose. In addition, the government of the Republic of Korea announced its plans to increase the number of monitors at airports and ports to a total of 126 by 2018, and pursue advancement of the monitoring system by developing monitoring technology. Also, in August 2014, radioactivity was detect on cargo coming in from Japan and it was

immediately returned, which was made possible thanks to the radioactivity monitor installed at the port. Moreover, the importing companies of the exporting countries of scrap metal are required to carry out radiation testing in advance and submit a confirmation statement on no radiation to the importers of Korea.

Furthermore, training professionals and experts for safety control of environmental radiation, providing information to the public, and preparing measures to promote understanding thereof combined with close cooperation among the related departments (Korea Customs Service) is expected to result in efficient and systematic monitoring and contribute substantially to protecting the public health and the environment from environmental radiation.

Chapter 6 The Development of the Nuclear Damage Compensation Act

Section 1 The History of the 「Nuclear Damage Compensation Act」

1. 「Nuclear Damage Compensation Act」 enacted as Act No. 2094 on January 24, 1969

The 「Nuclear Damage Compensation Act」 was enacted as Act No. 2094 on January 24, 1969 for the purpose of to providing for matters concerning compensation for nuclear damage caused by the operation, etc. of nuclear reactors so as to protect victims and to contribute to the sound development of nuclear businesses.

First, nuclear business operators were assigned strict liability in relation to operating nuclear reactors. Second, even in the case of damages arising from willful negligence by a third party, it would be the nuclear business operators that provided the primary compensations, and the right to indemnity could be exercised secondarily. Third, the Act set forth the matters necessary for the compensation measures involving nuclear business operators and penal provisions for violation of duties on the part of nuclear business operators.

2. 「Nuclear Damage Compensation Act」 amended as Act No. 2765 on April 7, 1975

The 「Nuclear Damage Compensation Act」, amended as Act No. 2765 on April 7, 1975, supplemented the matters regarding the liability for

compensations in the event of nuclear damages resulting from the operation of a nuclear reactor. The compensation amount was upward adjusted to protect the victims and to contribute to the sound development of the nuclear business.

First, the reasons for exempting nuclear business operators from the obligation of compensation were adjusted. Second, the amended Act stated that in the event of a nuclear damage during transport of a nuclear fission material between nuclear business operators, it would be the sender who would bear the responsibility to compensate. Third, the limit for the compensation amount was increased from 1.5 billion won to 3.0 billion won. Fourth, in case of considerable nuclear damages, the government was to report to the National Assembly without delay the damage situation and government actions.

3. 「Nuclear Damage Compensation Act」 amended as Act No. 3849 on May 12, 1986

The 「Nuclear Damage Compensation Act」, amended as Act No. 3849 on May 12, 1986, stipulated that the capping of the amount of compensation for nuclear damage at 3 billion won shall be prescribed by Presidential Decree. The upper limit for compensation was increased to 9 billion won in the amended Act because there were a growing number of large-scale nuclear business operators and in order to provide adequate protection to the victims of nuclear damage in response to the changes in the socioeconomic conditions. Some of the penalizations were changed into a fine, and an attempt was made to supplement other inadequate matters in the amendment.

4. 「Nuclear Damage Compensation Act」 amended as Act No. 6350 on January 16, 2001

The 「Nuclear Damage Compensation Act」 was amended as Act 6350 on January 16, 2001. The amendments were made in response to the trend of reinforcing the international standards in relation to compensations for nuclear damages. To enhance the domestic nuclear damage compensation system to the international level, the scope of nuclear damages for which compensations would be made was expanded and the upper limit of compensations from nuclear business operators was matched with the international standard. As such, the Act was amended to ameliorate the inadequacies that were observed in operating the then-system.

First, the scope of nuclear damages was limited to personal injuries and property damages resulting from the use of nuclear fuel materials, but the amended Act included the costs of recovery and restoration and the costs of disaster prevention measures in addition to the personal injuries and property damages. Second, under the previous system, natural disasters and war were designated as force majeure that exempted nuclear business operators from making compensations, but the amended Act excluded natural disasters as a means to expand the scope of compensations made by nuclear business operators. Third, the upper limit of compensation was limited to 300 million won (calculation unit is equivalent to the amount for the special drawing rights designated by the International Monetary Fund) per nuclear accident to conform to the international standard on nuclear damage compensations, provided that this

would not apply if the damages occurred due to willful negligence of the nuclear business operator. Fourth, an extinctive prescription was determined in regard to the right to claim for damages such as physical injury, disease onset or death by limiting it to 30 years of the date on which the nuclear accident occurred.

5. 「Nuclear Damage Compensation Act」 amended as Act No. 13543 on December 1, 2015

The 「Nuclear Damage Compensation Act」 was amended as Act No. 13543 on December 1, 2015. Monetary penalty, along with a prison sentence, is a major means of criminal punishment that needs to be fair and reasonable from everyone's perspective. However, the penal regulations prepared during the dramatic economic growth of Korea reflected the price levels at the time, and as our economic situation changed over time, the monetary penalties lost their meaning as they failed to be proportionate with the illegality of the violations. Thus, the Act was amended to set the monetary penalty with the conversion rate of 10 million won for each year of imprisonment, which was the standard under the established rule of the Secretariat of the National Assembly and the recommended guidelines of the Anti-Corruption & Civil Rights Commission, thereby realizing a fine that reflects the then-price level, restoring its function as a punishment and means to achieve administrative order, and securing a deterrent for general citizens from committing crimes.

Section 2 The Main Content of the「Nuclear Damage Compensation Act」

<The Content of the Nuclear Damage Compensation Act>

1. Purpose and Definitions

The 「Nuclear Damage Compensation Act」 was enacted for the purpose of providing for matters concerning compensation for nuclear damage caused by the operation, etc. of nuclear reactors so as to protect victims and to contribute to the sound development of nuclear businesses.

Article 2 Subparagraph 1 of the Act defines "operation, etc. of nuclear reactors" as an operation of nuclear reactors, conversion of nuclear fuel materials, as prescribed by Presidential Decree, processing of nuclear fuel materials, as prescribed by Presidential Decree, treatment of spent nuclear fuels, as prescribed by Presidential Decree, use of nuclear fuel materials, as prescribed by Presidential Decree, storage, treatment, or disposal of radioactive waste, as prescribed by Presidential Decree, and the transportation, storage, or disuse of nuclear fuel materials or things contaminated thereby (including nuclear fission products; hereinafter the same shall apply) which are incidental thereto.

Article 2 Subparagraph 2 of the Act defines "nuclear damage" as damage (including the loss of economic interests related to the use of the environment, which is caused by serious environmental damage) caused by the nuclear fission process of nuclear fuel materials, or by radiation or by the toxicity of nuclear fuel materials or materials contaminated thereby, and the following expenses: Provided, That excluded herefrom, shall be damage suffered by relevant nuclear business operators and the employees thereof in conducting duties: Expenses for measures taken or to be taken to recover from serious environmental damage to the original state according to plans formulated under relevant Acts and subordinate

statutes, such as the 「Framework Act on the Management of Disasters and Safety」; Expenses for measures for preventing disasters (including additional losses or damage caused by the measures for preventing disasters) taken according to measures plans formulated under relevant Acts and subordinate statutes, such as the 「Framework Act on the Management of Disasters and Safety」 or the 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation Disasters」, to mitigate or minimize damage or expenses caused by the outbreak of nuclear incidents or to prevent or minimize damage or expenses caused by grave and imminent danger which may cause a nuclear incident.

Article 2 Subparagraph 3 of the Act defines “nuclear business operator” as a person who obtains permission for the construction or operation of a nuclear reactor or relevant facilities, a foreign nuclear ship operator who reports entry into or departure from a port of the Republic of Korea, or a person who obtains permission for fabrication business (including conversion business), a person who obtains designation of spent nuclear fuel processing business, a person who obtains permission to use nuclear fuel materials, a person who obtains permission to construct and operate disposal facilities, etc., or a nuclear energy research and development institute, or nuclear energy-related service institution and product-manufacturing institution referred to in Article 11 of the 「Nuclear Energy Promotion Act」. Article 2 Subparagraph 4 defines “nuclear incident/ accident” as an incident posing serious and imminent danger, which has caused or may cause nuclear damage (including a series of incidents arising from the same cause).

2. Strict Liability, Channelling of Liabilities, etc.

Article 3 (1)[26] of the 「Nuclear Damage Compensation Act」 prescribes that where nuclear damage is caused by the operation, etc. of a nuclear reactor, the relevant nuclear business operator shall be liable for such damage: Provided, That the same shall not apply where such damage is caused by an armed conflict between nations, hostility, civil war, or rebellion. Article 3 (2) of the Act prescribes that when nuclear damage is caused by moving nuclear fuel materials or things contaminated thereby, from one nuclear business operator to another nuclear business operator, the nuclear business operator who is the consignor of such nuclear fuel materials shall be liable for the damage: Provided, That where a special agreement exists between the nuclear business operators on the liability for damage, the special agreement shall govern.

Article 3 (3) of the Act states that in cases falling under paragraph (1) or (2), no person other than the nuclear business operator who assumes the liability for damage under paragraph (1) or (2) shall assume the liability for damage. Meanwhile, Article 3 (4) of the Act prescribes that articles 769, 770, 773, 875, and 881 of the 「Commercial Act」 shall not apply to nuclear damage caused by the operation, etc. of nuclear reactors installed in ships. Also, Article 3 (5) prescribes that the 「Product Liability Act」 shall not apply to nuclear damage caused by the operation, etc. of nuclear reactors.

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26) Article 4 (1) of the Vienna Convention prescribes that the liability of the operator for nuclear damage under this Convention shall be absolute, and that the operator of a nuclear installation shall be liable for nuclear damage upon proof that such damage has been caused by a nuclear incident (Article 2 (1) of the Convention).

As such the Nuclear Damage Compensation Act assigns liability to the nuclear business operators, who assume full liability even if there is a third party such as a nuclear energy manager. This is referred to as the "principle of strict liability." Strict liability means that only the nuclear business operators will be liable for any and all damages arising from a nuclear incident. This principle is unique in that it is not observed in any other compensation systems, but the "principle of strict liability" is acknowledged by countries around the world in relation to compensating for nuclear damages as a result of the Vienna Convention on Civil Liability for Nuclear Damage and the Paris Convention on Third Party Liability in the Field of Nuclear Energy.

Article 4 (1) of the 「Nuclear Damage Compensation Act」 prescribes that a nuclear business operator who has paid compensation for nuclear damage under Article 3, caused intentionally or by the gross negligence of a third party, may exercise a right to indemnity with respect thereto: Provided, That where such damage is caused in the course of supplying materials or providing services (including labor) for the operation, etc. of a nuclear reactor, he/she may exercise a right to indemnity only when the damage is caused intentionally or by the gross negligence of the supplier or provider, or the employees thereof. Also, in accordance with Article 4 (2) of the Act, if a special agreement on a right to indemnity exists, the special agreement shall govern.

3. Limitation of Liabilities

Article 3-2 (1) of the 「Nuclear Damage Compensation Act」 prescribse that a nuclear business operator shall assume liability for nuclear damage within the limit of a calculation unit of 300 million for each nuclear

incident, in principle. However, as an eception, no limitation of liabilities for damage shall apply where a nuclear business operator causes nuclear damage intentionally, or by reckless conduct or by willful blindness of the likelihood of the damage. This provision sets the limitation of liabilities for the nuclear business operator, in principle, and acknowledges the principle of unlimited liability as an exception. The “calculation unit” means an amount equivalent to the special drawing right of the International Monetary Fund (Article 3-2 (2) of the Act).

4. Duty to Take Measures for Compensation

Article 5 (1) of the 「Nuclear Damage Compensation Act」 states that no nuclear business operators shall engage in the operation, etc. of nuclear reactors unless he/she takes measures to compensate for nuclear damage. Also, measures for compensation referred to in paragraph (1) shall be taken by concluding liability insurance policies for nuclear damage compensation and indemnity agreements for nuclear damage compensation, or depositing money (Article 5 (2) of the Act). As such, subscription to a nuclear damage insurance policy is mandatory for nuclear business operators to ensure stable financial resources to compensate citizens in the event of a nuclear incident. Accordingly, nuclear business operators must subscribe to a liability insurance policy for nuclear damage compensation valued at 2.5 trillion won. Article 6 (1) of the 「 Nuclear Damage Compensation Act」 states that the amount of an liability insurance policy for nuclear damage compensation and an indemnity agreement for nuclear damage compensation, or the deposited amount, which are referred to in Article 5 (2), shall be the amount prescribed by

Presidential Decree within the limit of liabilities for damage referred to in Article 3-2, based on the type of facilities using nuclear energy, nature of nuclear fuel materials handled, consequences of outbreak of nuclear incidents, etc.

Also, where an amount available for compensation for future nuclear damage falls short of the amount of compensation due to compensation for nuclear damage, the Nuclear Safety and Security Commission may order the relevant nuclear business operator to make up for such shortage within a deadline within which to comply with the amount of measures for compensation, if necessary to ensure the performance of compensation for nuclear damage (Article 6 (2) of the Act).

Recently, the government of the Republic of Korea has amended the Enforcement Decree of the Nuclear Damage Compensation Act to increase the insured amount under the liability insurance policy for nuclear damage compensation (amount of compensation) from 50 billion won to 500 billion won per nuclear power plant site to ensure stable financial resources.[27)]

27) http://news.khan.co.kr/kh_news/khan_art_view.html?artid=201307302127535&code=990308; Tokyo Electric Power Company paid more than 42 trillion won (approx. 3.8 trillion yen), which substantially exceeds 1.32 billion won (120 billion yen), which is set forth as the measure for compensation under the Act on Compensation for Nuclear Damage of Japan. It is also estimated that more than 56 trillion won will be needed to remove radioactive contamination. Thus, the damages are expected to reach over 100 trillion won. The USA and Germany have secured a fund of 14 trillion won and 3 trillion won, respectively as a measure for compensation.

<Amount of Compensation>

Category	Measures for compensation
1. Operation of a nuclear reactor with a thermal output of over 10,000kWh (incl. transport, storage and disposal of nuclear fuel material accompanying the operation of the nuclear reactor at the nuclear reactor operating plant or business site, or materials contaminated by the nuclear fuel materials; same applies to subparagraphs 2 through 4 A. For nuclear power generation reactor B. For nuclear reactor for research purposes	Calculation unit of 300 million won 6 billion won
2. Operation of a nuclear reactor with a thermal output of over 100kWh and under 10,000kWh	1 billion won
3. Operation of a nuclear reactor with a thermal output of over 1kWh and under 100kWh	200 million won
4. Operation of a nuclear reactor with a thermal output of under 1kWh	20 million won
5. Conversion (incl. transport, storage and disposal of nuclear fuel material accompanying the operation of the nuclear reactor at a conversion plant or business site, or materials contaminated by the nuclear fuel materials) A. For commercial purposes B. For research purposes	20 million won 10 million won
6. Processing (incl. transport, storage and disposal of nuclear fuel material accompanying the operation of the nuclear reactor at a processing plant or business site, or materials contaminated by the nuclear fuel materials)	

Category	Measures for compensation
A. For commercial purposes B. For research purposes	20 million won 10 million won
7. Treatment of spent nuclear fuel (incl. transport, storage and disposal of nuclear fuel material accompanying the operation of the nuclear reactor at a spent nuclear fuel treatment plant or business site, or materials contaminated by the nuclear fuel materials) A. For commercial purposes B. For research purposes	 2 billion won 1 billion won
8. Use of nuclear fuel material (incl. transport, storage and disposal of nuclear fuel material accompanying the operation of the nuclear reactor at a plant or business site that uses nuclear fuel material, or materials contaminated by the nuclear fuel materials)	20 million won
9. The transport and storage of nuclear fuel material accompanying nuclear operation, conversion, processing or spent nuclear fuel treatment, or use of nuclear fuel material, or materials contaminated by the nuclear fuel materials (excl. transport and storage accompanying nuclear operation, conversion, processing or spent nuclear fuel treatment at a plant or business site that uses or treats nuclear fuel material following nuclear operation, conversion, processing or spent nuclear fuel treatment)	20 million won
10. Transport of spent nuclear fuel accompanying nuclear reactor operation or spent nuclear fuel treatment (excl. transport accompanying nuclear operation or spent nuclear fuel treatment at a plant or business site where nuclear operation or spent nuclear fuel treatment occurs)	200 million won

Category	Measures for compensation
11. Foreign nuclear ship operator that reported its port entry and departure at a port in Korea	200 million won
12. A person who has received a construction permit or operating license for a waste facility A. For a storage facility B. For a treatment facility C. For an interim storage and disposal facility for spent nuclear fuel	20 million won 200 million won 2 billion won

5. Liability Insurance Policies for Nuclear Damage Compensation

Article 7 (1) of the 「Nuclear Damage Compensation Act」 states that "liability insurance policy for nuclear damage compensation" in Article 5 (2) means a policy under which the insurer (limited to persons eligible to engage in liability insurance business under the Insurance Business Act) agrees to cover the loss suffered by a nuclear business operator who has assumed liability for damage under Article 3 as a result of paying compensation for nuclear damage caused by a specific cause, whereas the policyholder agrees to pay insurance premiums to the insurer. Also, when subscribing to a liability insurance policy for nuclear damage compensation, a nuclear business operator shall obtain approval for the terms and conditions thereof from the Nuclear Safety and Security Commission (Article 7 (2) of the Act).

6. Priority of Claims for Damage and Priority of Claims for Compensation

Article 8 (1) of the 「Nuclear Damage Compensation Act」 prescribes that when claiming damage, a victim shall have priority over other creditors in the reimbursement of insurance money. Article 8 (2) of the Act states that an insured person may request the insurer to pay insurance money only within the limit of payments he/she has made for compensation to a victim or within the limit consented to by a victim. Also, the right to claim the payment of insurance money under a liability insurance policy for nuclear damage compensation shall not be transferred, held as a security, or seized: Provided, That the same shall not apply to the seizure of a right to claim damage by a victim (Article 8 (3) of the Act). Furthermore, Article 10 of the 「Nuclear Damage Compensation Act」 states that Article 8 shall apply mutatis mutandis to claims for compensation.

7. Extinctive Prescription for the Right to Claim for Damages

Article 13-2 (1) of the 「Nuclear Damage Compensation Act」 prescribes that a right to claim for nuclear damage under this Act shall lapse by prescription if not exercised within three years from the date on which the victim or the legal representative thereof becomes aware of the damage and of the person who assumes liability for damage under Article 3. Also, a right to claim for nuclear damage under this Act shall lapse by prescription if not exercised within ten years from the date the

relevant nuclear incident occurs: Provided, That a right to claim for nuclear damage resulting in physical injuries, diseases or death shall lapse by prescription if it is not exercised within 30 years from the date on which the relevant nuclear incident occurs (Article 13-2 (2) of the Act). In other words, the extinctive prescription was extended to 30 years for physical injuries, diseases or death in order to protect the victims, as radioactive substances accumulating in the body for long periods of time can alter the body and result in damages in the future generations such as birth defects. Thus, legislating the extinctive prescription as 30 years is deemed reasonable for victim protection.

8. Measures of Government

Article 14 (1) of the 「Nuclear Damage Compensation Act」 states that where the amount of compensation to be paid by a nuclear business operator in the outbreak of nuclear damage exceeds the amount of measures for compensation, the Government shall provide necessary aid to the nuclear business operator, when necessary to achieve the purposes of this Act. In other words, this provision prescribes aid from the government for nuclear business operators. Aid refers to the financial aid, etc. provided when the nuclear business operator concerned is incapable of paying for damages as the nuclear damages exceed the amount of measures for compensation.

Of particular note, government aid is provided only when necessary to achieve the purposes of this Act, and it is deemed a discretionary act of the government. Also, in cases falling under the proviso to Article 3 (1), the Government shall take measures necessary to rescue victims and to

prevent the spread of damage (Article 14 (2) of the Act). Furthermore, the Government shall provide aid under paragraph (1) within the extent authorized by a resolution of the National Assembly (Article 14 (3) of the Act).

9. Reporting and Inspection

Article 16 (1) of the 「Nuclear Damage Compensation Act」 prescribes that if necessary, the Nuclear Safety and Security Commission may order nuclear business operators to prepare a report, or have public officials belonging thereto enter the offices, factories, or places of business (where nuclear reactors are installed in ships, referring to such ships) of nuclear business operators to inspect books, documents or other necessary articles or to inquire of relevant persons. Also, the public official conducting an inspection or inquiry under paragraph (1) shall carry a certificate indicating his/her authority and present it to relevant persons (Article 16 (2) of the Act).

As such, a person who fails to report or makes a false report pursuant to Article 16, or refuses, impedes or evades an inspection or fails to testify or falsely testifies to the inquiries pursuant to Article 16 are imposed a fine of up to 5 million won, instead of 500,000 won as previously, under the amended Act No. 13543 taking effect on December 1, 2015. In other words, in recognition of the fact that the monetary penalties lost their meaning as they failed to be proportionate with the illegality of the violations, a fine that matches the current price level was set to reflect the reality, thereby securing a deterrent for general citizens from committing crimes.

10. Reporting to the National Assembly

Article 22 of the 「Nuclear Damage Compensation Act」 stipulates that in the outbreak of large-scale nuclear damage, the Government shall report to the National Assembly without delay, on the status of such damage and measures taken by the Government under this Act.

Section 3 Sub-conclusion

The Chernobyl disaster occurred in the former Soviet Union in 1986, and the Fukushima Daiichi nuclear disaster occurred in Japan in March 2011. Of particular note, the catastrophic nuclear accident in Fukushima made the entire world question whether nuclear power plants should continue to be operated. As a result of these accidents, nuclear disasters began to be recognized as having an astronomical impact that affects a wide area that extends beyond national borders. Also, damages and injuries to citizens caused by radioactivity are dormant for long periods of time, and it takes a long time for the damages to become visible. It also takes hundreds to millions of years for humans and the natural environment to recover and be restored to the normal conditions.

As such, even if nuclear power is used in a peaceful and safe manner, there is a high chance that damages will arise from unexpected incidents that are beyond the imagination and control of humans. Accordingly, the priority should be on taking safety management and control measures to prevent nuclear accidents, instead of relying on compensations after such accident.

Despite this, however, there is a need to prepare a post-nuclear disaster compensation system in preparation of a potential nuclear disaster in the Republic of Korea. Accordingly, in order to protect victims and promote sound development of the nuclear energy businesses, the 「Nuclear Damage Compensation Act」 was enacted to set forth the matters pertaining to compensations for nuclear damages resulting from the operation of nuclear reactors. The key matters set forth in the 「Nuclear Damage Compensation Act」 of the Republic of Korea include strict liability and channelling of liabilities (Article 3), limitation of liabilities (Article 3-2), right to indemnity (Article 4), duty to take measures for compensation (Article 5), amount of compensation (Article 6), liability insurance policy for nuclear damage compensation (Article 7), priority of claims for damage (Article 8), indemnity agreements for nuclear damage compensation (Article 9), priority of claims for compensation (Article 10), extinctive prescription (Article 13-2), measures of government (Article 14), Nuclear Damage Deliberation Committee (Article 15), reporting and inspection (Article 16), penal provisions (Article 19), fines for negligence (Article 20) and reporting to the National Assembly (Article 22).

Accordingly, the 「Nuclear Damage Compensation Act」 of the Republic of Korea needs to continually increase the limitation of liabilities for nuclear business operators, as is the case in the countries that are considered nuclear powerhouses, and there is a need to improve the provision on unlimited liability from the current provision of “in principle-limited liability” and “exclusion principle-unlimited liability.” As for the government aid, it is deemed necessary to specify the scope and details of the aid in the Enforcement Decree. In addition, there is a need for a provision on administrative punishment and fines that are fair and

reasonable and are recognized as a punishment that corresponds to the weight of the violation committed.

Chapter 7 The Outlook and Tasks Related to the Legislation on Nuclear Development in the Republic of Korea

In the Republic of Korea, with the first commercial operation of a nuclear reactor (Kori-1) in Wolnae-ri, Jangan-eup, Gijang-gun in Busan in 1978, there are now a total of 24 nuclear reactors in operation, which include Kori-1~4, Hanul-1~6, Wolsong-1~4, Hanbit-1~6 as well as Shin Kori-1~2 and Shin Wolsong 1. As of 2016, the capacity of the nuclear power plants in Korea is 20,716 megawatt electrical (MWe), accounting for 22% of the total power generation capacity. Recently, the government of the Republic of Korea has set forth a plan to build 17 more nuclear power reactors and increase the facility capacity to 29% by 2035.

However, the growing public concerns and anxiety resulting from the catastrophic nuclear disaster in Fukushima, Japan in March 2011 were recognized by the government of the Republic of Korea, and a stronger emphasis has been put on the need for an overview of the nuclear power generation policy and safety reinforcement. Thus, the 「Atomic Energy Act」 was separated into the 「Nuclear Energy Promotion Act」 and the 「Nuclear Safety Act」, and in order to run the Nuclear Safety and Security Commission as an independent department, the 「Act on the Establishment and Operation of the Nuclear Safety and Security Commission」 was established. In addition, the 「Radioactive Waste Management Act」, 「Special Act on Assistance to the Locations of Facilities for Disposal of Low and Intermediate Level Radioactive Waste」, 「Act on Measures for the Protection of Nuclear Facilities, etc. and Prevention of Radiation

Disasters」, 「Act on Protective Action Guidelines Against Radiation in the Natural Environment」, and 「Nuclear Damage Compensation Act」 were established or amended to prepare a safety management system for the entire life cycle of nuclear energy and post-disaster compensation system to deal with the issues of construction, operation, decommissioning/ disposal and security of nuclear power plants and the compensations for damages resulting from radiation exposure.

One of the issues that need to be resolved in relation to the legislations of the Republic of Korea on nuclear power generation in the Republic has recently been garnering attention as a national agenda, and it is ensuring safety management of spent nuclear fuel that is temporarily stored in the nuclear power plant sites. Considering that large amounts of radioactive substances were leaked from the spent nuclear fuel, which had been stored and managed at the Daiichi nuclear power plant in Fukushima, the government of the Republic of Korea needed to make a policy decision on better managing spent nuclear fuel.

Accordingly, in October 2013, with the aim of preparing the measures to manage spent nuclear fuel, which is designated as high level waste (HLW), the Korean government launched the Public Engagement Commission on Spent Nuclear Fuel Management. In June 2015, after being active for 20 months, the Commission proposed the Recommended Guidelines for Spent Nuclear Fuel Management. The Commission proposed that disposal facilities for spent nuclear fuel, which is classified as high level waste (HLW), in specified regions by 2051, at the latest, so that the spent nuclear fuel, presently stored in temporary storage facilities, be collected to be disposed of as HLW. Of particular note, in order for the government to establish a master plan for spent nuclear fuel management,

the Recommended Guidelines for Spent Nuclear Fuel Management proposed that the "Special Act on Spent Nuclear Fuel Management (Tentative title)" be enacted for the purpose of systematically implementing a policy on spent nuclear fuel. In response, the government announced its plans to legislate the "Special Act on the Management Procedure for High Level Radioactive Waste (Tentative title)."

Also, in combination with the Fukushima Daiichi nuclear disaster in March 2011, it was discovered in June 2013 that the certificate of analysis of the control cables at nuclear power plants had been manipulated, etc., and this heightened the public anxiety in regard to Kori-1, the oldest nuclear reactor in Korea. Accordingly, the Korean government made a decision to permanently shut down Kori-1, which had been operated beyond the design service life, in June 2017 for decommissioning purposes. Thus, in relation to the decommissioning and closure of nuclear power plants, the need to update the 「Nuclear Safety Act」 and to secure core technologies has emerged as a pending issue pertaining to nuclear power generation in Korea.

Lastly, Chapter VI (Disposal and Transportation) of the current 「Nuclear Safety Act」 contains general provisions for all materials, facililties and acts that contrast with one another, and fails to provide differentiated provisions, taking into account the unique characteristics and hazards of various radioactive wastes. Of particular note, at the time of the enactment of the 「Nuclear Safety Act」, an "integrated permit system" was prescribed, stipulating that "any person who intends to construct and operate facilities to store, process, and dispose of radioactive waste and supplementary facilities shall obtain a permit from the Nuclear Safety and

Security Commission," even though differentiated regulatory measures should have been set forth, taking into account the method of disposal of radioactive wastes. Thus, it is deemed necessary to update the regulatory system by setting forth different provisions for each target item as a means to prepare a safety regulation system for the management facilities for spent nuclear fuel, which is HLW, in the near future. Thus, by updating the system to apply differentially according to the type of radioactive wastes in Chapter VI (Disposal and Transportation of the 「Nuclear Safety Act」, the legal framework for the storage, processing and disposal facilities for radioactive wastes, interim storage facilities for spent nuclear fuel and transport of radioactive materials can be secured, thereby gaining public trust at home and abroad in relation to the radioactive waste management, enhancing transparency, and achieving consistency in the legal system. Of particular note, this can contribute to the establishment and operation of a safety management system for back end of the fuel cycle and the entire life cycle, ranging from site selection, construction, operation and closure of various facilities concerned such as interim storage facilities for spent nuclear fuel and disposal facilities for HLW. Another benefit is that it will raise understanding of the Act in question.

In Korean society, the most important topic of discussion related to electrical energy supply is radioactive disaster prevention and securing safety, which is directly linked to the protection of lives and properties of citizens, when operating a nuclear power plant and managing the radioactive wastes. The government of the Republic of Korea must prevent and be well-prepared for nuclear accidents that may potentially occur in Korea, based on the Chernobyl nuclear disaster in the former

Soviet Union and the Fukushima Daiichi nuclear disaster in Japan, and develop a system that allows immediate response in the event of an accident and speedy recovery thereafter. Accordingly, the Republic of Korea is continually updating the "nuclear legislation system" by ceaselessly evaluating and observing facilities related to the use of nuclear energy and matching the system to the current scientific technology level, based on practical reason.

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