Content

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Content：

Article 1

This Enforcement Rules is enacted pursuant to Article 50 of the Nuclear Material and Radioactive Waste Management Act (hereinafter referred to as "this Act").

Article 2

The uranium and thorium minerals referred to in Subparagraph 1 of Article 4 of this Act are classified as follows:

Uranium minerals, thorium minerals or uranium-thorium mixed minerals, with a weight percentage of uranium and thorium not less than 0.05%.

Uranium, thorium or mixtures of the two in any physical or chemical forms, with a weight percentage of uranium and thorium not less than 0.05%.

Article 3

The materials that generate energy through self-sustaining chain reaction of fission of nucleus referred to in Subparagraph 2 of Article 4 of this Act means the materials containing plutonium, U(233) or U(235) as well as the materials condensed from U(233) or U(235).

Article 4

The radioactive waste referred to in Subparagraph 3 of Article 4 of this Act is classified as follows:

High level waste: means the spent nuclear fuel for final disposal or the extraction residuals generated in reprocessing.

Low level waste: means the radioactive waste other than described above.

Article 5

The radioactive waste treatment facility referred to in this Act means the factory building or plant that is provided with the following system and is used to change the nuclide concentration, volume, form or physical and chemical characteristic of the radioactive waste;

Incinerating, melting and high temperature pyrolysis system with a capacity greater than 25kg/d,

Liquid radioactive waste treatment system with a capacity greater than 1kl/d,

Radioactive waste solidification system with a capacity greater than 200kg/d,

Solid radioactive waste compaction system with a capacity greater than 1,000kg/d,

Radioactive waste treatment system with a capacity greater than $3.7x10^{10}$/d,

Other system designated by the competent authority.

Article 6

The radioactive waste storage facility referred to in this Act means the building factory or plant that is provided with radiation protection and waste storage functions, waste hoisting and unloading equipment, and radiation monitoring system, and is used to store radioactive waste with a weight not less than 3000kg and activity not less than 37 billion Bq for final disposal.

Article 7

In case of alteration of the matters recorded in a license granted under this Act, the license holder shall apply for alteration registration at the competent authority within 30 days commencing from alteration according to Article 5 of this Act.

Article 8

Before to apply for operating license of nuclear source material or nuclear fuel production or storage facility according to Paragraph 1 of Article 9 of this Act, the applicant shall submit a trial operation plan to the competent authority after completion of construction of the production or storage facility to apply for trial operation at first.

After trial operation is finished in accordance with the above paragraph, a letter of application enclosed with the following documents shall be submitted to the competent authority to apply for operation license:

Safety analysis report of the latest edition.

Technical specifications of the facility operation.

Trial operation report.

Incident response plan.

Photocopy of the storage permit(s) or entrusted treatment contract(s) issued by domestic and/or foreign radioactive waste final disposal facility.

Other documents designated by the competent authority.

The competent authority shall finish examination of the above-mentioned application within 3 months.

Article 9

To apply for renewal of an operating license according to Paragraph 3 of Article 9 of this Act, the applicant shall submit the following documents; where necessary, the competent authority may require the applicant to bring forward a decommissioning plan:

Safety analysis report of the latest edition

Safety evaluation report for renewal of license.

Photocopy of the storage permit(s) or entrusted treatment contract(s) issued by domestic and/or foreign radioactive waste final disposal facility.

Article 10

The safety evaluation report for renewal of license referred to in Subparagraph 2 of Article 9 shall include the following contents:

Statistic analysis of the operating conditions and abnormal events in the past years.

Statistic analysis of the radioactive material release and environmental radiation monitoring in the latest 10 years.

Statistic analysis of the radiation dose received by the workers and the persons around the facilities in the latest 10 years.

Renewal and improvement of the facilities and equipment.

Safety system performance evaluation.

Evaluation of the residual lifetime of facility.

Other matters designated by the competent authority.

Article 11

The decommissioning plan brought forward under Article 9 shall include the following contents:

Organization of the decommissioning executor.
Description of the facilities to be decommissioned.
Radiation evaluation of the facilities to be decommissioned.
Classes and quantities of the radioactive wastes.
Manpower and technical planning for each decommissioning stage.
Job specification and time schedule of each stage.
Radiation dose evaluation and protection measures.
Other matters designated by the competent authority.

Article 12

The time limits for the operators of nuclear source material or nuclear fuel production or storage facilities to prepare reports and records according to Article 10 of this Act are prescribed as follows:

Annual report on operation, radiation protection and environmental radiation monitoring shall be submitted within 3 months after the termination of each year.
Nuclear source material or nuclear fuel production, inventory and sales records of every half-year shall be submitted before January 31 and July 31.
Quarterly environmental radiation monitoring report shall be submitted within 60 days after the termination of each season.
Radioactive waste generation, treatment, storage and final disposal records of every month shall be submitted before the end of the next month.
In case of abnormal or emergency event, notification shall be made within 2 hours, and written report shall be reported within 30 days commencing from discovery of the event.

Article 13

The abnormal or emergency event referred to in Subparagraph 5 of the preceding Article means any of the following occasions:

Substantial impact on the facility operating safety or serious encumbrance to the safety operation of the operators is caused by natural disaster or other factors.
Safety is likely to be affected because status other than analyzed in the safety analysis report, status beyond design basis, or status not covered in the operating nad emergency operation procedures occurs during the process of operation.
Personnel are contaminated by radioactivity pollution and needs to be sent to outside the facility for medical treatment.
The radiation dose received by the personnel or the liquid or gas effluents discharged by the facility exceeds the value specified in the Ionizing Radiation Protection Act.
Accident occurs during hoisting, unloading or transportation of nuclear source material or nuclear fuel.
Nuclear source material, nuclear fuel or radioactive waste is lost, stolen, or damaged.
Other occasions recognized by the competent authority.

Article 14

The operators of nuclear source material or nuclear fuel production facilities shall have any of the following qualifications, and shall hold the qualified certificates granted by the competent authority:

Graduated from science, engineering, agriculture or medicine departments of colleges or having equivalent educational level, qualified in training, and having practiced in the field for over 3 months or having participated in the whole course of trial operation.
Graduated from senior high schools or vocational schools or having equivalent education level, qualified in training, and having practiced in the field for over 6 months or having participated in the whole course of trial operation.

The above-mentioned training includes qualification acquisition training and on-job retraining, and the training hours are as follows:

Qualification acquisition training:
The total training hours of an operator running nuclear source

material production facility shall be not less than 60 hours, among which the training of facility system and operation procedure shall account for at least 40 hours, and the radiation safety training at least 20 hours. And the operator shall pass the exam.

The total training hours of an operator running nuclear fuel production facility shall be not less than 240 hours, among which the training of facility system and operation procedure shall account for at least 200 hours, and the radiation safety training at least 40 hours. And the operator shall pass the exam.

On-job retraining: the hours of on-job training shall be not less than 1/10 of that of the above-mentioned qualification acquisition training every year, and the operator shall pass the exam.

Article 15

To apply for nuclear source material or nuclear fuel production facility operator certificate, the applicant shall submit a letter of application enclosed with the following documents to the competent authority:

Photostat copy of education certificates.

Training certificates.

Field practice certificate.

The validity period of the above-mentioned training certificate is 3 years. A letter of application and on-job retraining certificate shall be submitted to the competent authority 30 days prior to expiration, to apply for renewal of the certificate.

Article 16

The newly added safety issue referred to in Subparagraph 2 of Article 12 of the Act means any of the following occasions:

Accident probability or accident severity is increased, or the malfunction probability of important safety equipment is higher than estimated in the safety analysis report.

Accident other than covered in the safety analysis report is likely to occur.

Safety margin is reduced.

Article 17

The occasion likely to hazard the public health, safety or environmental ecology during the construction period as referred to in Paragraph 1 of Article 13 of this Act means any of the following:

Major defect in design or issue referring to the subparagraphs of Article 16 is found and has not been properly evaluated and solved.

There are significant differences in the contents of the field operation and safety analysis report that will influence safety functions.

There are serious defects in execution of the quality assurance program that will greatly influence the quality of works on site.

Serious accident occurs, causing unfavorable influence to field operations.

Other occasions prescribed by the competent authority.

Article 18

The occasion likely to hazard the public health, safety or environmental ecology during the operation period as referred to in Paragraph 1 of Article 13 of this Act means any of the following:

Facilities are not operated according to the operation technical specifications.

The documents, data, records, or inspection results related to evaluation performed by the competent authority show that the nuclear source material or nuclear fuel production or storage facility doesn't meet the provision of Paragraph 1 of Article 8 of this Act.

The environmental radiation monitoring results show that the radiation dose outside the facility is more than 0.01mSv/h, or it is estimated that the annual individual effective dose to general public outside the facility exceeds 0.25mSv.

Mendacious documents, data or records are provided to apply for nuclear source material or nuclear fuel production or storage facility operating license, thus affecting the correctness of the competent authority granting licenses.
Other occasions prescribed by the competent authority.

Article 19

The operator shall submit a letter of application enclosed with the decommissioning plan to the competent authority according to Paragraph 1 of Article 14 or Paragraph 1 of Article 23 of this Act, when nuclear source material (and)/or nuclear fuel production or storage facility or radioactive waste treatment or storage facility involves one of following circumstances:

permanent cessation of operation of the facility
The operator applied for renewing the license of the facility according to the first paragraph according to Paragraph 3 of Article 9 or Paragraph 2 of Article 18 of this Act, failing to get the competent authority approval.
The facility is determined to be permanent cessation of operation according to Paragraph 2 of Article 14 or Paragraph 4 of Article 23 of this Act.

The deadline date of above-mentioned applications is set as follows:

Subparagraph 1 of the preceding Paragraph 1：An application shall be filed one year prior to permanent cessation of operation of the facility.
Subparagraph 2 of the preceding Paragraph 2：The operator shall apply for decommissioning according to the first paragraph within 1 year commencing from the next day of receiving the notice of the application failing to be approved by the competent authority.
Subparagraph 3 of the preceding Paragraph 3：The operator shall apply for decommissioning according to the first paragraph within 1 year commencing from the next day of the determination performed by the competent authority.

The competent authority shall finish examination of the application referred to in the first paragraph within 6 months.

Article 19-1

Within six months of completing the decommissioning plan according to Paragraph 1 of Article 14 or Paragraph 1, Article 23 of this Act, the regulation of decommissioning shall be lifted after the operator submit the report of completion of decommissioning to the competent authority for inspections and approval.
After the site of the facility is decommissioned according to the first paragraph, the annual individual effective dose to general public shall not exceed 0.25mSv.
The report of completion of decommissioning referred to Paragraph 1 shall include the following contents:

Decommissioning strategy and related implementation of the facilities.
Radiation protection for the workers and the public during the decommissioning process.
Results of the radiation dose survey at the final site.
The management of radioactive waste.
Subsequent management of the post-decommissioning site.
Other items designated by the competent authority.

Article 20

The decommissioning plan prepared by the operator under Paragraph 1, Article 14 of this Act shall include the following contents:

Facility overview.
Decommissioning objectives and time schedule.
Decontamination methods and radioactive waste reduction measures.
Class, characteristics, quantity, treatment, transportation and storage of radioactive waste.
Radiation dose evaluation and radiation protection measures.
Environmental radiation monitoring.

Personnel training.
Material and accounting records management of nuclear source material or nuclear fuel.
Reutilization plan of factory building or land.
Quality assurance program.
Accident response scheme.
Other matters designated by the competent authority.

The decommissioning plan prepared by the operator under Paragraph 1 of Article 23 of this Act shall include the contents as listed in the above Subparagraphs 1~7 and 9~11 as well as other matters designated by the competent authority.

Article 21

The material and accounting records compiled under Paragraph 2 of Article 15 of this Act shall be reported to the competent authority for review before January 31 and July 31 every year; where necessary, the competent authority may require the operator to count the inventory and report the material and accounting records within 1 month.

Article 22

The nuclear source materials below a specified weight referred to in Paragraph 1 of Article 16 of this Act are as follows:

Welding rod, vacuum tube and incandescent gas mantle with a content of thorium less than 2g/piece.
Sunlamp, germicidal lamp, or industrial outdoor lighting lamp with a content of thorium less than 2g/lamp.
Lighting lamp with a content of thorium less than 0.05g/lamp.
Personnel neutron dosimeters with a content of thorium less than 0.05g/dosimeter.
Optical lens with a weight percentage of thorium less than 30%/lens.
Photographic film, negative or print with a content of uranium or thorium less than 2g/piece.
Tungsten or magnesium-thorium alloy finished products or semi-finished products with a weight percentage of thorium in the metal proportion less than 4%.
Glaze-coated ceramic vessels with a weight percentage of nuclear source material in the glaze proportion less than 20%.
Glassware with a weight percentage of nuclear source material less than 10%.
Piezoelectric ceramic products with a weight percentage of nuclear source material less than 2%.
Rare-earth metals and their compounds, mixtures and products with a weight percentage of nuclear source material less than 0.25%.
Nickel-thorium alloy used for aircraft engine, with a weight percentage of thorium less than 4%.
Radiation source shipping containers using uranium as the shielding materials, with a weight percentage of U(235) in uranium less than 0.711%.
Uranium used for counterweight installed in aircraft, rocket, projectile or missile, where the weight percentage of U(235) is below 0.711%.
Glass bricks, ceramic bricks or other glass or ceramic products used for construction.
Other materials designated by the competent authority.

Article 23

The nuclear source materials below a specified activity referred to in Paragraph 1 of Article 16 of this Act are as follows:

Fire detectors with uranium activity below 185Bq/detector.
Materials with uranium and/or thorium activity complying with the standard for exemption from control of radiation sources.
Other materials designated by the competent authority.

Article 24

The nuclear fuel below a specified activity referred to in Paragraph 1,

Article 16 of this Act includes the following:

Total activity of U(233) and U(235) under 37,000Bg.

Plutonium activity complied with the standard for exemption from control of radiation sources.

Other materials designated by the competent authority.

Article 25

The production or storage facilities of nuclear source material and/or nuclear fuel below a specified weight referred to in Paragraph 1 of Article 16 of this Act are as follows:

Nuclear source material production facilities used for research or experiment, where the total weight of uranium and thorium is below 10kg in each production batch.

Nuclear fuel production facilities used for research or experiment, where the weight of U(235) in each production batch is below 100g, and plutonium and/or U(233) below 15g.

Nuclear source material storage facilities used for research or experiment, where the stored uranium and thorium is below 1 effective kilograms.

Nuclear fuel storage facilities used for research or experiment, where the stored uranium is below 1 effective kilograms, and there is no spent nuclear fuel, plutonium or U(233).

Other facilities designated by the competent authority.

The effective kilograms referred to the above Subparagraphs 3 and 4 means the weight of uranium or thorium calculated using the following method:

For uranium with a weight percentage of U(233) or U(235) not less than 1%, the effective kilograms is the product of the weight of uranium in kilogram multiplied by square of a decimal weight fraction of U(233) or U(235).

For uranium with a weight percentage of U(233) or U(235) not less than 0.5% but less than 1%, the effective kilograms is the product of the weight of uranium in kilogram multiplied by 0.0001.

For uranium with a weight percentage of U(233) or U(235) less than 0.5%, the effective kilograms is the product of the weight of uranium in kilogram multiplied by 5/100,000.

For thorium, the effective kilograms is the product of the weight of thorium in kilogram multiplied by 5/100,000.

Article 26

Before to apply for operating license of radioactive waste treatment, storage or final disposal facilities according to Paragraph 1 of Article 18 of this Act, the applicant shall submit trial operation plan to the competent authority to apply for trial operation at first.

After trial operation is finished in accordance with the above paragraph, a letter of application enclosed with the following documents shall be submitted to the competent authority to apply for operation license:

Safety analysis report of the latest edition.

Facility operating technical specifications.

Trial operation report.

Accident response plan.

Other documents designated by the competent authority.

The time limits for the competent authority to examine the above-mentioned applications are as follows:

Examination of application for radioactive waste treatment or storage facilities shall be finished within 3 months.

Examination of applications for low-activity waste final disposal facilities shall be finished within 6 months.

Examination of applications for high-activity waste final disposal facilities shall be finished within 1 year.

Article 27

The validity period of an operating license granted under Paragraph 1 of Article 18 of this Act is up to 40 years for treatment facilities or storage facilities of radioactive waste, and is up to 60 years for final disposal facilities.

Article 28

To apply for renewal of operating license according to Paragraph 2 of Article 18 of this Act, the applicant shall submit a letter of application enclosed with the safety analysis report of the latest edition and the safety evaluation report for renewal of license to the competent authority. Where necessary, the competent authority may require the applicant to bring forward a decommissioning plan.

Article 29

The safety evaluation report for renewal of license and the decommissioning plan referred to in the preceding Article shall include the contents as prescribed in Articles 10 and 11.

Article 30

The time limits for the operators to prepare reports and records according to Article 20 of the Act are prescribed as follows:

Annual report on operation, radiation protection and environmental radiation monitoring shall be submitted within 3 months after the termination of each year.

Quarterly environmental radiation monitoring report shall be submitted within 60 days after the termination of each season.

Monthly report on the quantity of treatment, generation or storage of radioactive waste shall be submitted before the end of the next month. But it is not necessary to prepare the report during the period when the final disposal facilities of radioactive waste are under institutional control.

Abnormal or emergency event reports:

(1)Inside the nuclear reactors facilities: report shall be prepared in accordance with related regulations on the Nuclear Reactor Facilities Regulation Act.

(2)Outside the nuclear reactors facilities: notification shall be made within 2 hours, and written report shall be brought forward within 30 days commencing from discovery of the event.

Article 31

The abnormal or emergency event referred to in Subparagraph 4 of the preceding Article means any of the following:

Substantial impact on the facility operating safety or serious encumbrance to the safety operation of the operators is caused by natural disaster or other factors.

Safety is likely to be affected because status other than analyzed in the safety analysis report, status beyond design basis, or status not covered in the operating nad emergency operation procedures occurs during the process of operation.

Personnel are contaminated by radioactivity pollution and needs to be sent to outside the facility for medical treatment.

The radiation dose received by the personnel or the liquid or gas effluents discharged by the facility exceeds the value specified in the Ionizing Radiation Protection Act.

Accident occurs during hoisting, unloading or transportation of radioactive waste.

Radioactive waste is lost, stolen or damaged.

Other occasions recognized by the competent authority.

Article 32

The closure plan prepared under Paragraph 2 of Article 23 of this Act for an operator to close the final disposal facilities of radioactive waste shall include the following contents:

Organization of executor.

Procedure of dismantling the facilities on the ground surface and decontamination.

Backfill of the excavated areas.

Stabilization operations after the site is closed

Long-term safety evaluation.
Accident analysis and response plan after closure.
Quality assurance program.
Other matters designated by the competent authority.

Article 33

The institutional control plan worked out by the operator under Paragraph 2 of Article 23 of this Act for closure of the final disposal facilities of radioactive waste shall include the following contents:

Organization of executor.
Site security.
Environmental radiation monitoring.
Quality assurance program.
Record and archive management.
Other matters designated by the competent authority.

Article 34

Only provided that the annual individual effective dose by final disposal facilities of radioactive waste to general public is lower than 0.25mSv, the operator may apply for the competent authority to approve reuse of the lands or exemption from control according to Article 24 of this Act.

For the application referred to in the preceding paragraph, a letter of application enclosed with the environmental impact analysis document approved by the competent authority of environmental protection and the radiation safety evaluation report including the following contents shall be submitted:

Description of the final disposal facilities and the ambient areas.
Data of environmental radiation monitoring during the operation, closure and institutional control period.
Natural and human activities impacting the final disposal facilities and the adjacent areas during the operation, closure and institutional control period.
Land reutilization plan.
Radiation safety evaluation for land reutilization.
Other matters designated by the competent authority.

The competent authority shall finish examination of the application referred to in Paragraph 1 within 6 months.

Article 35

(Deleted)

Article 36

Those who generate low-activity waste other than prescribed in Paragraphs 2 and 3, Article 49 of this Act or take charge of the final disposal of low level waste, shall submit a low level waste final disposal plan within 1 year commencing from enforcement of this Act, and implement the plan in accordance with the schedule after it is approved by the competent authority; and shall report the last semiannual execution results before the end of February and August every year.

To amend the low level waste final disposal plan or the time schedule of the plan, reasons and correction measures shall be reported to the competent authority for approval prior to execution.

Article 37

Those who generate high level waste other than prescribed in Paragraphs 2 and 3, Article 49 of this Act or take charge of the final disposal of high level waste, shall submit a high level waste final disposal plan within 2 years commencing from enforcement of this Act, and implement the plan in accordance with the schedule after it is approved by the competent authority; and shall report the execution results of the previous year and the working plan of the next year before the end of February and October every year.

The high level waste final disposal plans shall be reviewed and amended every 4 years. Upon amendment, reasons and correction measures shall be

reported to the competent authority for approval prior to execution.

Article 38

The formats of the application letters and forms, certificates and certification documents referred to in this Act shall be prescribed by the competent authority.

Article 39

This Enforcement Rules of this Act shall be put into practice from the date of promulgation.