
REGULATION

From the Turkish Atomic Energy Agency:

RADIOACTIVE WASTE MANAGEMENT REGULATION**FIRST PART****Purpose, Scope, Basis and Definitions****Aim**

ARTICLE 1 – (1) The purpose of this Regulation is the use of nuclear energy and ionizing radiation sources. To regulate the procedures and principles regarding the safe management of radioactive waste that may arise during the process in a way that does not harm employees, society, the environment and future generations.

Scope

ARTICLE 2 – (1) This Regulation applies to activities and facilities related to the management of radioactive waste.

(2) Applicable provisions of this Regulation apply to activities other than the use of nuclear energy and ionizing radiation sources but that generate radioactive waste.

Rest

ARTICLE 3 – (1) This Regulation is in accordance with Article 4 of the Turkish Atomic Energy Authority Law No. 2690 dated 9/7/1982. It has been prepared based on clauses (e) and (f) of the first paragraph of the third article.

Definitions

ARTICLE 4 – (1) In this Regulation;

- a) Barrier: Prevents or delays the movement of radioactive substances in a radioactive waste facility designed or natural physical disability,
- b) Disposal: Appropriate final storage of radioactive wastes without the intention of taking them back or the release of radioactive gas and liquid wastes into the environment,
- c) Disposal facility: Facilities whose primary purpose is the disposal of radioactive waste, surface, near surface, medium depth and deep disposal facilities,
- d) Release to the environment: Radioactive gas and liquid wastes whose activity does not exceed certain limits are released in a planned and controlled manner. be disposed of by releasing it into the environment,
- d) Multiple barrier: Two or more interlocking barriers used in a radioactive waste facility,
- e) Storage: Keeping radioactive wastes in a system or facility with the intention of taking them back,
- f) Deep disposal facility: It is a facility established for the disposal of radioactive waste and where radionuclides are removed from the biosphere for a long time. Facilities located in stable geological structures located a few hundred meters or more below the surface for the purpose of providing temporary insulation,
- g) Regulatory control: The institution has a nuclear safety control over activities that have been notified or authorized. and regulatory activities such as inspection, control and evaluation carried out to ensure safety and radiation, waste and transportation safety or the protection of individuals, society and the environment from radiation,
- g) Secondary waste: Radioactive waste generated during the processing of radioactive waste,
- h) Processing: Activities including pre-treatment, treatment and conditioning steps applied to radioactive waste,

i) Decommissioning: After the decision is made not to operate again for all facilities other than the disposal facility.

A set of activities carried out within the framework of a specific program, aimed at removing all nuclear and radioactive materials from the facility, dismantling the facility and removing the site from the regulatory control of the Authority,

i) Closure: Following the completion of the operational activities of the disposal facility, a specific program

The whole of administrative and technical activities carried out within the scope of the project, including final engineering works or other works that aim to close the facility so that the waste cannot be accessed again, and make the facility safe in the long term,

j) Source materials: Uranium containing natural isotopes, uranium whose 235 isotope has fallen below the natural level, thorium, metal, alloy, chemical composition or condensed form of any of these, and any substance containing one or more of these in a ratio to be determined by the Board of Directors of the International Atomic Energy Agency or the Agency. a substance,

k) Restricted use: After the field is removed from regulatory control, its use within the framework of restrictions regarding issues such as the time spent in the field due to radiological reasons, the age group of people entering the field, and land use,

l) Critical group: People who are irradiated from a certain radiation source or sources and are likely to receive the highest dose. A group consisting of members of society who are

m) Criticality: In the Nuclear Definitions Regulation published in the Official Gazette No. 20986 dated 9/9/1991 specified criticality,

n) Spent nuclear fuel: Irradiated fuel that has been removed from the nuclear reactor and will not be reused in its current form,

o) Founder: Real or legal person who establishes a radioactive waste facility,

ö) Institution: Turkish Atomic Energy Authority,

p) Well type disposal: Final storage of radioactive wastes in wells opened by drilling method,

r) Treatment: Activities that include methods such as ion exchange, precipitation, filtering and concentration and whose objectives are to change the content of radioactive waste, reduce the waste volume and decompose radionuclides,

s) Nuclear material: Source materials and special fissile materials,

ÿ) Nuclear facility: It is determined by the Authority that nuclear safety and security should be taken into consideration, Any facility where nuclear materials are produced, processed, used, kept, reprocessed, stored or disposed of,

t) Medium depth disposal facility: Thirty to several hundred meters from the surface for the disposal of radioactive wastes. radioactive waste facility located at depths between

u) Pretreatment: Preparatory processes for treatment such as collection, separation, chemical regulation and deradiation to be applied to radioactive waste,

ü) Special fissile material: In terms of Plutonium239, Uranium233, 235 or 233 isotopes enriched uranium and any substance containing one or more of these,

v) Radiation facility: Places specially designed for radiation applications determined by the Institution,

y) Radiation applications: Radiation published in the Official Gazette dated 24/3/2000 and numbered 23999. Any application made with radiation sources outside the exemptions given in the Safety Regulation,

z) Radioactive waste: Nuclear and radioactive substances that contain activity concentrations above the release limits and are not intended to be used again, and structures, systems, components and materials that are contaminated with radioactive substances or have become radioactive,

aa) Radioactive waste acceptance criteria: Criteria determined by the authorized person for the acceptance of radioactive waste to the facility, consisting of the type of radionuclides, activity concentration or total activity, etc. related to the waste package or waste form,

bb) Radioactive waste package: Contains the radioactive waste form, container and inner shield and is prepared as a result of conditioning. the resulting package,

cc) Radioactive waste facilities: Radioactive waste processing, storage and disposal facilities,

d) Radioactive waste management: Collection, processing, on-site transportation and storage of radioactive waste. or all administrative and technical activities related to its disposal,

dd) Radioactive substance: An isotope whose nuclei undergo spontaneous decay and emit radiation, or substances containing isotopes,

ee) Radiolysis: Change in the chemical structure of substances due to the effect of ionizing radiation,

ff) Site: The area that surrounds the facility with physical barriers, where only controlled entry and exit can be made, and over which the facility owner has authority.

gg) Removing the field from regulatory control: Within the framework of the conditions determined by the Institution, The Authority's decision that there is no need to apply regulatory control,

gġ) Unclaimed resource: Abandoned, stolen, lost or transferred without complying with the notification obligation. Closed radioactive sources that have been out of control for reasons such as or have never entered the Institution's records for various reasons,

hh) Liberalization: Resulting from practices or activities that require notification or authorization. Removing radioactive substances or wastes from regulatory control as a result of their activities being below or falling below certain levels,

ii) Release limits: Activity concentration and surface contamination levels accepted as limit values for the release of radioactive substances or wastes,

ii) Facility: Nuclear facilities, radiation facilities and radioactive waste facilities,

jj) Facility conditions: Different conditions in which the facility may be found, from normal operation to severe accidents,

kk) Conditioning: Processes that include transforming radioactive waste into a form suitable for transportation, storage and disposal, packaging it and, if necessary, preserving it with an additional outer package,

ll) Near surface disposal facility: Radioactive waste facility located at a maximum depth of thirty meters from the surface for the disposal of radioactive waste,

mm) Reprocessing: The process carried out to recover usable radioactive isotopes from spent nuclear fuels,

nn) Authorized person: Person appointed by the Institution to carry out any activity requiring authorization. authorized person,

oo) Surface disposal facility: Radioactive waste facility located on the surface where radioactive wastes are placed for disposal purposes,

expresses.

SECOND PART

Requirements and Principles of Radioactive Waste Management

Responsibility

ARTICLE 5 – (1) Effects arising during the use of nuclear energy and ionizing radiation sources
Ensuring the management of radioactive waste is the responsibility of the person carrying out the activity, including covering the cost.

(2) Radioactive waste, other than the use of nuclear energy and ionizing radiation sources
For activities that create radioactive waste, it is the responsibility of the person carrying out the activity in question to ensure the management of the resulting radioactive waste, including covering the cost.

Protection of employees, society and the environment

ARTICLE 6 – (1) Necessary measures are taken to ensure that the effects of radioactive waste specified in this Regulation on employees, society and the environment do not exceed the permitted levels and do not create an unnecessary burden on future generations.

(2) In the management of radioactive waste, possible impacts on future generations must be limited to those allowed for current generations. All precautions are taken to prevent this from happening again.

(3) No radioactive waste that is above the exemption or liberalization limits as specified in Article 21 can be released into the environment.

(4) The management of secondary wastes generated during the management steps of radioactive wastes is also subject to the provisions of this Regulation. subject.

(5) arising as a result of an activity carried out outside the sovereignty borders of the Republic of Turkey, Radioactive waste cannot be brought into the borders of Türkiye for processing, storage or disposal.

Control of radioactive waste generation

ARTICLE 7 – (1) All necessary precautions are taken by the authorized person to keep the formation of radioactive wastes at the lowest possible and reasonable level in terms of volume and activity.

Cross-border effects

ARTICLE 8 – (1) In radioactive waste management, the effects of waste on people and the environment beyond the country's borders possible effects are taken into account.

Interaction in radioactive waste management steps

ARTICLE 9 – (1) Relationships between different and interactive steps in the management of radioactive waste is taken into account. When planning for any step such as determining the characteristics, processing and transportation of waste, the effects of other waste management steps on employees, society and the environment are taken into account whenever possible.

(2) At each step, duties, authorities and responsibilities are defined clearly and understandably.

Criticality and heat of radioactive decay

ARTICLE 10 – (1) All regulations regarding fissile materials in activities and facilities related to radioactive waste management All necessary precautions to prevent criticality accidents in operations are taken by the authorized person.

(2) The authorized person takes the necessary precautions, taking into account the radioactive decay heat, in activities and facilities related to radioactive waste management.

defense in depth

ARTICLE 11 – (1) In all activities and activities related to the management of radioactive waste by the authorized person. A defense-in-depth strategy is implemented in the facilities. In accordance with this strategy, measures are taken, consisting of a series of independent, different and intertwined applications in a hierarchical structure, to maintain the effectiveness of the barriers placed between waste and employees, society and the environment, to prevent events that may occur during the operation from turning into accidents and to reduce the effects of accidents that occur.

radiation protection

ARTICLE 12 – (1) In activities and facilities related to radioactive waste management, radiation protection principles are taken as basis and applied by the authorized person in order to protect the individual, society and the environment from radiation, as stated in Article 7 of the Radiation Safety Regulation.

Safety

ARTICLE 13 – (1) Person authorized in activities and facilities related to the management of radioactive waste The safety of nuclear and radioactive materials is ensured by.

Management system

ARTICLE 14 – (1) The person authorized for the radioactive waste facility creates and implements management systems covering all activities related to radioactive waste management for all stages, from determining the location of the facility to its decommissioning or closure and removal of the site from regulatory control.

security management

ARTICLE 15 – (1) The person authorized for the radioactive waste facility implements the activity for which he/she is authorized within a management mechanism that gives the highest priority to waste safety issues, has certain limits of authority and responsibility, and communication methods.

security culture

ARTICLE 16 – (1) Giving the highest priority to issues related to waste safety in radioactive waste facilities, It is accepted as a principle by the senior management of the authorized person. This security culture principle is taken as a basis when policies and administrative structures are created, and the personnel is ensured to adopt this principle.

human factor

ARTICLE 17 – (1) Possible human errors in all activities that may affect the safety of radioactive waste facilities are taken into account and systems are created by the authorized person in order to reduce the burden of operating personnel and minimize human errors.

Transparency

ARTICLE 18 – (1) The public and all stakeholders are effectively informed in radioactive waste management.

THIRD PART

Radioactive Waste Management Steps

Determination of radioactive waste characteristics

ARTICLE 19 – (1) In order to facilitate the transition between radioactive waste management steps, radioactive waste As a first step, the physical, biological, chemical and radiological properties of the waste are determined by the producer.

Classification of radioactive waste

ARTICLE 20 – (1) Radioactive wastes are classified according to their radioactivity levels and half-lives of the radionuclides they contain. It is classified as very short-lived, very low level, low and medium level and high level radioactive waste.

(2) Waste class is taken into consideration in the steps to be taken in radioactive waste management.

Liberalization and exemption

ARTICLE 21 – (1) Activity levels exceed the exemption limits given in the Radiation Safety Regulation Wastes below are exempt from regulatory control.

(2) Liberalization of radioactive substances and wastes generated within the scope of activities related to nuclear facilities Procedures and principles regarding borders are based on the Regulation on the Liberalization of Nuclear Facilities and the Removal of the Site from Regulatory Control.

Very short-lived radioactive waste

ARTICLE 22 – (1) Wastes containing radioactivity above the exemption limit and whose activity content will fall below the liberalization limits after being stored for a few years at most and will become suitable for liberalization are classified as very short-lived radioactive waste.

Very low level radioactive waste

ARTICLE 23 – (1) Class of very short-lived radioactive waste containing radioactivity above the exemption limit. Radioactive wastes that do not enter the country and contain activity concentrations below approximately 100 times the liberalization limits are classified as very low level radioactive waste.

(2) Disposal of very low level radioactive waste can be carried out in surface disposal facilities.

Low and medium level radioactive waste

ARTICLE 24 – (1) Activity level of radioactive wastes with very low radioactivity levels

Wastes with higher concentrations but not classified as high-level radioactive waste are classified as low and medium level radioactive waste.

(2) After conditioning, the alpha-emitting radionuclide concentration contained in

Low and intermediate level radioactive wastes with an average level of 400 Bq/g and less than 4000 Bq/g for a single waste package can be disposed of in near-surface disposal facilities.

(3) After the conditioning process, low and medium level radioactive wastes whose alpha emitter radionuclide concentrations are higher than the concentration limits specified in the second paragraph for low and medium level radioactive wastes are disposed of only in medium or deep disposal facilities.

(4) Low and medium level radioactive waste packages are stored in a physically safe and sheltered structure that is resistant to environmental corrosion. Additional shielding is applied to the low and medium level waste container to be stored when necessary.

High level radioactive waste

ARTICLE 25 – (1) Spent nuclear fuels accepted as radioactive waste by the Authority, radioactive wastes that arise as a result of reprocessing and may contain fission products and actinides, and other radioactive wastes with activities close to their activities are classified as high level radioactive waste.

(2) High-level radioactive waste is disposed of only in deep disposal facilities.

(3) High-level radioactive waste and spent nuclear fuel should be disposed of in disposal facilities or reprocessing. They are stored until they are sent to the facilities, taking into account the reduction of radioactive decay heat and criticality.

Processing

ARTICLE 26 – (1) In the pre-treatment step, the radionuclide content of the waste, radioactive decay heat, physical state, biological properties, chemical activity, radioactivity and contamination level are taken into account. Radioactive wastes are collected in the places where they occur, separated by type, depending on all their characteristics and the treatment to be carried out.

(2) Systems used in the treatment step are checked at regular intervals to maintain their functionality and are renewed or replaced when necessary. Treatment is carried out in such a way that as little volume of radioactive waste as possible is delivered to subsequent radioactive waste management steps.

(3) In the conditioning step, the radionuclide content, criticality, radioactive decay heat, contamination level, corrosive substance content, gas production and physical properties of radioactive waste are taken into consideration. It is ensured that the radioactive waste packages, whose conditioning step is completed, maintain their integrity against internal and external influences.

Transport

ARTICLE 27 – (1) Except for transportation within the facility area where public roads and railways are not used, procedures regarding the transportation of radioactive waste and the waste packages to be used during transportation are in accordance with the Regulation on the Safe Transportation of Radioactive Material published in the Official Gazette dated 8/7/2005 and numbered 25869. It is carried out within the framework of other legislative provisions regarding this subject.

(2) The person authorized for facility operation or decommissioning must ensure quality control for transportation within the site. Establishes management, radiation protection and on-site emergency procedures and takes all necessary precautions, taking into account possible radiation exposure routes.

Storage

ARTICLE 28 – (1) In the safe storage of radioactive wastes, a multiple barrier approach is applied to isolate the wastes from the environment.

(2) In the storage step, the radioisotope contents, half-lives, activity concentrations and physical, chemical and biological properties of the radioactive wastes to be stored are taken into account. Radioactive wastes are stored considering the planned storage period. The radioactive waste package planned to be stored must be physically and chemically stable. All necessary precautions are taken to prevent the material properties of the waste container from deteriorating and its lifespan from decreasing.

(3) Storage allows testing, inspection, monitoring and inspection of stored radioactive waste packages.
is done in a way that provides

(4) Storage can also be applied during and between radioactive waste management steps before disposal.

(5) In the storage of spent nuclear fuels, the provisions of the Regulation on Special Principles for the Safety of Nuclear Fuel Cycle Facilities published in the Official Gazette dated 30/7/2010 and numbered 27657 shall be complied with.

disposal

ARTICLE 29 – (1) Disposal of radioactive waste, the possible effects of the waste on employees, society and the environment
It is done in a way to ensure that it is kept at acceptable levels for a period of time determined by the institution and is passively isolated from the environment.

(2) Only qualified radioactive wastes are disposed of in near-surface, mid-depth and deep disposal facilities.
is done.

(3) Long-term safety of the disposal facility; favorable geological structure, engineering design features, appropriate
Radioactive waste content and form are provided through procedures and controls for the operation, closure and post-operation period.

(4) Small volumes of low and medium level radioactive waste can be disposed of by well type. In well type disposal,
The depth from the surface of the waste package closest to the surface placed in the well determines the type of disposal facility. High level wastes cannot be disposed of by well type.

Mining waste disposal

ARTICLE 30 – (1) Radioactive wastes resulting from the mining of nuclear raw materials and the mining of other ores that cause radioactive waste are disposed of in surface disposal facilities located within the mining areas, under the responsibility of the person authorized for the mining activity. Mining wastes with activity concentrations that cannot be disposed of in surface disposal facilities are disposed of in an appropriate disposal facility in accordance with the provisions of this Regulation.

CHAPTER FOUR

Release of Gas and Liquid Radioactive Waste to the Environment

Disposal of radioactive gas and liquid waste

ARTICLE 31 – (1) Radioactive gas and liquid wastes of the facility, which do not exceed the environmental release limits determined by the authorized person, are disposed of by being released into the environment.

(2) When necessary, in order to make radioactive gas and liquid wastes suitable for release to the environment, the 26th article
The processing step specified in the article is applied.

(3) Radioisotopes with a half-life of less than 100 days and radioactive substances containing C14 and H3 are used in medicine and industry.
The release of wastes into the environment as a result of their use in areas such as research and research and radioactive wastes generated outside the nuclear fuel cycle is carried out in accordance with the Regulation on Wastes from the Use of Radioactive Substances published in the Official Gazette dated 2/9/2004 and numbered 25571.

(4) Liquid radioactive substances that will be released into the sewage system and do not exceed the environmental release limits
It is soluble and dispersible.

Dosage restrictions

ARTICLE 32 – (1) Dose restrictions for the public are determined by the Authority for each facility site within the scope of the optimization principle of radiation protection specified in Article 7 of the Radiation Safety Regulation.

(2) Dose restrictions for facility employees are determined, monitored and inspected by the person authorized for the activity.

(3) Dose constraints are taken into account in the design of the facility.

Environmental release limits

ARTICLE 33 – (1) Release limits to the environment are determined for the public by the authorized person, separately for gases and liquids, based on dose constraints and radiation protection optimization determined by the Authority based on the operating conditions of the facility. Environmental emission limits in nuclear facilities are submitted to the Authority in the authorization application for construction and operation. The suitability of these limits is evaluated by the Authority during the authorization stages. Finalized values are within the scope of the operating limits and conditions of the facility.

(2) Environmental release limits are set annually for each radionuclide or radionuclide group, depending on the activity. are defined as limits. In addition to annual limits, shorter-term limits can also be set when necessary.

(3) While determining the limits, the control parameters determined within the framework of the radiation protection optimization of the facility With the techniques, all operating conditions of the facility and potential changes in the operation are taken into account.

(4) Limits are reviewed by the authorized person within the first 3 years of a newly operational facility and not less than 5 years later, and are renewed if necessary.

(5) The activity of gases and liquids to be released into the environment during the operation of the facility exceeds the environmental emission limits. cannot exceed.

Exceeding environmental emission limits

ARTICLE 34 – (1) In cases where the release limits to the environment are planned to be exceeded within the scope of extraordinary events occurring in the facility, the details of the situation and the reasons for the release are presented to the Institution by the authorized person, and the maximum effective doses that critical groups can receive due to the release and other sources are taken into account, as stated in the Radiation Safety Regulation. It is shown that it will remain below the dose limits given for Release can be made following the conformity assessment of the institution.

(2) Exceeding the limits due to unplanned release within the scope of extraordinary events occurring in the facility In this case, the authorized person notifies the Institution, the reasons for the incident are investigated and necessary precautions are taken.

Critical group doses

ARTICLE 35 – (1) Before the operation phase, the properties and activities of radioactive gases and liquids planned to be released into the environment due to facility operation, potential release points and routes, annual total waste amount and release methods and timing, and authorized irradiation routes for the society that will be caused by the released radionuclides. determined by the person. Due to the planned release, the radiation doses to which critical groups will be exposed are calculated as the maximum annual doses that can be received in the last year of the operation, taking into account the accumulation of radionuclides in the environment.

(2) Critical group doses are calculated separately for age groups.

(3) The doses that critical groups may be exposed to due to facility operation cannot exceed the dose restrictions determined by the Institution.

(4) Information regarding the release and critical group doses are submitted to the Authority in the facility's application for authorization for construction.

(5) Information regarding release and critical group doses are determined by the Authority during the operation phase of the facility. It is reported to the Institution at regular intervals. At this stage, critical group doses are determined cumulatively for the reported period.

Monitoring the environment with radioactive gases and liquids

ARTICLE 36 – (1) In accordance with the environmental release limits of radioactive gases and liquids released from the facility The release of waste into the environment is monitored by the authorized person in order to control the discharge of waste into the environment.

(2) The maximum doses that critical groups can receive under operating conditions are environmental protection measures in facilities exceeding 10 μSv per year. monitoring program is implemented. The authorized person is responsible for ensuring that the environmental dose rate is constantly monitored and the activity amounts in air, water, soil and various food samples are monitored and recorded at regular intervals.

CHAPTER FIVE

General Principles in Radioactive Waste Facilities

Authorization

ARTICLE 37 – (1) Activities related to radioactive waste facilities are subject to authorization.

(2) Radioactive waste facilities are subject to authorization as a nuclear facility if they contain wastes from nuclear reactors and nuclear fuel cycle facilities and wastes containing nuclear material, and as a radiation facility if they contain only radiation applications and wastes from radiation facilities.

(3) Decommissioning or closure of radioactive waste facilities and removal of the area where the facilities are located from regulatory control are subject to authorization.

Responsibilities

ARTICLE 38 – (1) In the radioactive waste facility, the authorized person is responsible for complying with the objectives and principles regarding waste safety and taking all precautions, and for the processes related to the safe establishment, operation, decommissioning or closure of the facility and the removal of the site from regulatory control.

(2) Activities and activities of all other persons, institutions and organizations related to the activity, including the institution It does not in any way reduce or eliminate this responsibility of the person whose responsibilities are authorized.

(3) Under what conditions the responsibilities of the authorized person will end, the authority given by the Institution It is defined within the framework.

(4) Suspension or cancellation of the authority does not terminate the responsibilities of the authorized person.

Basic obligations of the authorized person

ARTICLE 39 – (1) By the Authority to carry out activities related to radioactive waste facilities.

The main obligations of authorized persons are as follows:

a) To carry out the activity for which the authorization is given, in accordance with the relevant legislation and within the framework of the conditions defined by the Authority, giving priority to radioactive waste safety,

b) To carry out the authorized activity within a quality management system,

c) Conducting periodic security assessments regarding the activity for which authorization is given,

ç) To cooperate in the auditing of the activity for which authorization is given by the Authority,

d) To provide all information and documents requested by the Authority regarding the activity for which the authorization is given,

e) Keeping the records defined in the relevant legislation and making reports during the activity for which the authority is given,

f) To notify the Authority of any unusual events that may occur during the activity for which the authorization is given,

g) Effects on employees, society and the environment regarding extraordinary events that may occur in the facility To make necessary arrangements to prevent or mitigate negative impacts.

(2) In addition to these obligations, the Authority may define additional obligations regarding the authorizations it grants for the radioactive waste facility.

(3) The authorized person's resignation, bankruptcy or similar situations do not eliminate these obligations.

Graduated approach

ARTICLE 40 – (1) Facilities or activities related to radioactive waste management, employees of the facility or activity, It is taken into account, examined and evaluated at a level commensurate with the size of the risk it may pose to society and the environment.

(2) Persons applying for authorization must prepare the documents they submit with the application in detail appropriate to the extent of the potential risk of the activity.

Demonstration and verification of security

ARTICLE 41 – (1) It is documented and demonstrated by the authorized person through analysis, reports and programs that the safety objectives in the facility are achieved in the design of the radioactive waste facility before starting construction, as it is built before it goes into operation, in decommissioning or closure activities, under normal conditions and in case of accidents.

(2) After the facility is put into operation, these documents are renewed at a frequency determined by the Authority in the light of operating experiences and new security information. During operation, the condition and operation of the radioactive waste facility is verified through surveillance, inspection and tests that it complies with the operating limits and conditions and meets the safety objectives.

CHAPTER SIX

General Safety Principles in Radioactive Waste Facilities

Field

ARTICLE 42 – (1) The area where the radioactive waste facility will be established; the possible effects of the facility and the environment on each other; It is determined by the radioactive waste facility founder, taking into account the applicability of emergency plans. In evaluating these issues, the entire life of the facility is taken into account, and monitoring and, when necessary, re-evaluation is carried out to check that the conditions regarding these issues continue to be acceptable in terms of safety.

(2) The facility site is evaluated in terms of its suitability for transporting radioactive waste to the site.

(3) It is shown that the area where the disposal facility will be established has natural barriers.

Design

ARTICLE 43 – (1) Radioactive waste facilities are designed to ensure that employees, society and the environment are protected from radiation under operating and accident conditions, and can be safely decommissioned or closed.

(2) The facility includes total radioactive and nuclear material for waste to be stored, processed or disposed of. It is designed taking into account the inventory and potential radiological and non-radiological hazards.

(3) The structure, system and components should be evaluated by taking into account the environmental conditions and facility life and the waste storage and facility life. It is designed to prevent material and environmental interactions that could compromise safety.

(4) The structure, system and components are designed to facilitate maintenance, repair, inspection and testing. is designed.

(5) The structures, systems and components in the facility are classified according to their functions and importance in terms of safety and are designed in accordance with the relevant legislation, codes and standards. The design ensures that no damage occurs to structures, systems and components important for safety during operating conditions. Safety systems are designed to prevent accidents and mitigate their consequences under accident conditions.

Design of processing and storage facilities

ARTICLE 44 – (1) Systems such as ventilation, monitoring, fire protection and filtering should be included in the facility design. space is given. In the design, precautions against the effects of radiolysis and precautions such as armoring and sealing are taken into account.

(2) Radioactive waste storage facilities include the period during which the waste will be stored and future and emergency storage facilities. It is designed taking into account the possible increases in demand.

(3) The design of facilities where high-level radioactive waste is processed and stored includes systems that can monitor and keep radioactive waste under control in case of operation and accidents. Such facilities are designed in such a way that cooling is provided by engineering designs and passive cooling systems such as natural convection, and the stored waste will not be damaged in case of loss of cooling.

Design of disposal facilities

ARTICLE 45 – (1) Disposal facilities are designed to ensure that the possible effects of radioactive waste on employees, society and the environment are kept at levels determined by the Institution for the time period determined by the Institution.

(2) The facility design includes multiple barriers that will allow radionuclides to be trapped and isolated from the environment and are planned to remain effective during operation and after shutdown.

(3) Barriers are selected and designed as physically and chemically different and complementary to each other, in order to guarantee the safety of the facility after closure, through their security functions.

(4) The facility is designed in such a way that it does not require the continuation of active security measures such as control, maintenance and monitoring in the post-closure period, and passive security measures including barriers and land use restrictions are sufficient to ensure security.

Construction

ARTICLE 46 – (1) Before the construction of the radioactive waste facility begins, basic safety measures must be taken in the design of the facility. It is shown that the requirements are adequately met.

(2) The construction of the facility by a construction organization in which duties, authorities and responsibilities are clearly defined. It is ensured that it is constructed in accordance with the design.

(3) All structures, systems and components included in the design are manufactured using proven and accepted technical methods and methods. It is constructed in accordance with safety classes using procedures.

(4) When it is necessary to make changes regarding safety in the facility design during construction, permission is obtained within the framework of the procedures determined by the Authority.

commissioning

ARTICLE 47 – (1) Before the facility begins to operate, it is verified through tests that the functions of the structure, system and components are fulfilled as required, within the framework of a program, and it is shown that the facility as a whole has been constructed in accordance with the design targets. The commissioning program also includes testing of all operating procedures whose feasibility can be demonstrated at this stage.

(2) A business organization is created before commissioning. Operating personnel are ensured to receive facility-specific training during commissioning. Commissioning tests are carried out with the participation of the personnel envisaged to operate the facility.

Business

ARTICLE 48 – (1) The operating limits and conditions, which outline the safe operation of the radioactive waste facility in all operating states and include radioactive waste acceptance criteria, are defined by the authorized person. All necessary precautions are taken by the authorized person to ensure that the facility is operated within operating limits and conditions. Permission is obtained from the Authority in accordance with the relevant procedures for any changes to be made in the operating limits and conditions.

(2) The facility is operated by a sufficient number of qualified personnel who have received the necessary training, forming the operating organization.

(3) All security-related plans, programs and regulations for the operation of the facility prepared by the authorized person. The procedures are applied after they are deemed appropriate by the Institution.

(4) Design with special attention to inspection, testing, maintenance and repair of structures, systems and components in the facility ensure that they continue to fulfill their requirements.

(5) Changes to be made in the facility are evaluated in terms of security before being implemented and security measures are taken. For all changes that may affect safety, permission is obtained within the framework of the procedures determined by the Authority.

(6) An emergency plan is kept to be implemented in case of accidents that may occur in the facility, and drills are held at regular intervals to ensure the applicability of this plan. The emergency plan is reviewed and updated in line with the experiences gained.

decommissioning

ARTICLE 49 – (1) Persons authorized by the Authority to operate radioactive waste processing and storage facilities are obliged to decommission the facility. A decommissioning program is established and implemented to ensure that safety objectives are met for facility decommissioning activities.

Closing

ARTICLE 50 – (1) Persons authorized by the Authority to operate disposal facilities shall be subject to closure of the facility. is liable. Ensuring that post-shutdown security objectives are met by the authorized person

An appropriate closure program is created and implemented. The closure program includes the precautions to be taken after the closure and the implementation period.

(2) Employees, society and the environment throughout the entire process until the facility is closed and removed from regulatory control. All precautions are taken to ensure protection from radiation.

(3) The security of the facility is ensured by taking active and passive security measures by the authorized person throughout the entire process until the facility is closed and removed from regulatory control.

Removing the site from regulatory control

ARTICLE 51 – (1) The sites of radioactive waste facilities and the activities related to the facility on the site are under the regulatory control of the Authority, starting from the first authorization received for the site, until the approval is received from the Authority to remove the site from regulatory control. The person authorized for the ongoing activity at the site is responsible for removing the site from regulatory control.

(2) Sites of disposal facilities shall be disposed of only after the implementation of post-closure safety measures and is removed from regulatory control for restricted use purposes.

(3) The procedures and principles for removing the site from regulatory control are regulated by the Authority.

(4) The responsibility of the authorized person ends once the site is removed from regulatory control.

CHAPTER SEVEN

Radioactive Waste Management in Nuclear Facilities and Radiation Facilities

Management and responsibilities of radioactive waste in nuclear facilities

ARTICLE 52 – (1) Radioactive wastes and wastes generated during activities related to nuclear facilities Management of fuels is the responsibility of the person authorized for the facility. The authorized person's resignation, bankruptcy or similar situations do not eliminate these obligations.

(2) It is the responsibility of the person authorized to operate the facility to cover the entire cost of radioactive waste and spent fuels generated during the activities of nuclear facilities, including on-site management and off-site transportation, storage, disposal and, if necessary, post-closure monitoring.

(3) A radioactive waste management program in nuclear facilities, the scope and content of which are defined in the relevant legislation, is created and implemented.

(4) Before the spent nuclear fuels are taken out of the nuclear facility site, It is temporarily stored in existing storage facilities. Afterwards, the person authorized for the nuclear facility may transfer the spent nuclear fuels to an off-site spent fuel storage facility or radioactive waste facility, reprocess and/or dispose of them, or send them to another country.

Management and responsibilities of radioactive waste in radiation applications and radiation facilities

ARTICLE 53 – (1) Regarding the management of radioactive wastes generated during activities for radiation applications and radiation facilities, the matters specified for radioactive wastes in the first, second and third paragraphs of Article 52 are the responsibility of the person authorized for radiation applications and radiation facilities.

End of responsibilities

ARTICLE 54 – (1) The responsibilities of the person authorized for an activity related to nuclear facilities and radiation applications and radiation facilities, regarding radioactive waste, shall end upon the occurrence of any of the following situations and following the approval of this situation by the Authority, based on the documents submitted by the authorized person:

a) Sending radioactive waste to another country without coming back,

b) Dispose of radioactive wastes below the exemption and liberalization limits,

c) To operate a radioactive waste facility to dispose of radioactive waste above the exemption and liberalization limits. transfer to the person authorized to do so.

CHAPTER EIGHT

Inspections and Sanctions

Audits

ARTICLE 55 – (1) Activities and facilities related to radioactive waste management within the scope of this Regulation are subject to the supervision of the Authority.

sanctions

ARTICLE 56 – (1) The powers granted to real or legal persons who do not fulfill their obligations defined in this Regulation, exceed their authority limits or violate the relevant legislation are temporarily or permanently canceled by the Authority.

(2) When necessary, the Institution takes the necessary steps to initiate a judicial and/or administrative investigation.

CHAPTER NINE

Miscellaneous and Final Provisions

Existing radioactive waste facilities

ARTICLE 57 – (1) Within six months from the date of entry into force of this Regulation, existing radioactive waste The compliance of the facilities with the provisions of this Regulation is evaluated by the authorized person or applicant, and an action plan to ensure full compliance is created and submitted to the Authority. The plan is implemented after it is approved by the Institution.

Force

ARTICLE 58 – (1) This Regulation shall enter into force on the date of its publication.

Executive

ARTICLE 59 – (1) The provisions of this Regulation shall be enforced by the President of the Institution.