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REGULATION ON RADIATION SAFETY

(Unofficial Translation)

PART ONE

Purpose, Scope, Legal Basis, Definitions, Exemption

Purpose

Article 1 – The purpose of this Regulation is to provide radiation safety of people and environment against ionizing radiation exposures.

Scope

Article 2 – (Amended: OG-3/6/2010-27600)

This Regulation includes the topics relevant with the facilities that require the provision of radiation safety and every kind of measures needed to be taken against the dangers of radiation sources and activities needed to be done.

This Regulation does not cover the activities regarding nuclear facilities, nuclear fuels, resultant radioactive wastes arise from nuclear facilities and nuclear substances.

Legal Basis

Article 3 – This Regulation is based on the paragraph (d) of Article 4 of Law no: 2690 Turkish Atomic Energy Authority.

Definitions

Article 4 – The definitions in this Regulation are;

a) Equivalent Dose; in Sievert (Sv) unit, multiplication of radiation weighting factor with absorbed dose at the organ or tissue according to radiation type and energy.

b) Effective dose; in Sievert (Sv) unit, total of doses obtained from the multiplication of tissue weighting factors of each tissue and organ with the dose equivalent calculated for the entire tissues and organs irradiated in human body.

c) Organization or Facility; places activating with the radiation sources in the scope of this Regulation.

d) Authority; Turkish Atomic Energy Authority.

e) License Holder; person whose name is indicated in the license document given according to provisions of this Regulation and who is responsible to the Authority for the application of the Radiation Safety Legislation.

f) Price; prices determined in "Circular on Good and Service Production and Publication Sales" of the Authority and approved by Prime Minister and/or relevant Minister.

g) Radiation; ionizing radiation.

h) (Amended: OG-3/6/2010-27600) Radiation Worker; a person who is likely to be exposed to radiation, due to the activities carried out with radiation sources in accordance with his duty, above the dose limits specified for the members of the public in Article 10 of this Regulation.

ı) (Amended: OG-3/6/2010-27600) Radiation Protection Adviser; a person who is educated in the field of radiation protection upon basic education in the field of engineering or science and has at least four years application-specific experience in the activities determined in Article 74 of this Regulation.

i) (Amended: OG-3/6/2010-27600) Radiation Protection Responsible; a person who will perform basic safety standards in radiation protection according to the characteristics of the work and whose education and experience have been evaluated and endorsed by the Authority while licensing.

j) (Annulled: OG-3/6/2010-27600)

k) (Annulled: OG-3/6/2010-27600)

l) (Annulled: OG-3/6/2010-27600)

m) Collective effective dose; total of multiplication of average effective dose in the population subgroup with number of individuals in this subgroup

n) Decree; Radiation Safety Decree put into force with the Cabinet decision dd. 24/7/1985 and no. 85/9727.

o) (Amended: OG-3/6/2010-27600) Committed equivalent dose; in Sievert (Sv) unit, a total equivalent dose which is released during the stay in the tissue or organ after taking the radioactive material into the body.

ö) Committed effective dose; total obtained as a result of the multiplication of committed equivalent dose with weighting factors of each tissue and organ.

p) (Added: OG-29/9/2004-25598) Administration; indicates license holder who has the competence and responsibility to ensure necessary labor and technical and financial infrastructure in order to provide performance and continuity of the licensed activities or the administrative level/person he is dependent upon.

Meanings of other technical terms in this Regulation are given under Regulation on Nuclear Definitions issued in Official Gazette with no. 20286 and dd. 9/9/1991.

Exemptions

Article 5 – Import, export, manufacture, store, hold, use and operation of devices producing radiation not exceeding the dose limits given below and radioactive materials not exceeding the radioactivity quantities and radioactivity concentrations given below are exempted from the provisions of this Regulation save for the obligatory of informing the Authority and limitation right of the Authority provided for.

a) Radioactive materials with a total radioactivity not exceeding column 2 of Annex 1.

b) Radioactive materials with radioactivity concentrations not exceeding column 3 of Annex1.

c) (Amended: OG-29/9/2004-25598) In case that all of the conditions below are provided at the same time by the rigs including radioactive materials those quantities exceeding values given in Annex 1 and those emitting radiation.

1) Rigs seem appropriate to use by the Authority by taking their superiority into consideration against possible harms.

2) Sealed sources those protections are provided effectively against leakage and contamination of radioactive material.

3) Rigs not exceeding 1 µSv/h (0.1 mrem/h) dose rate at a point 10 cm. far away from the surface under normal working conditions.

d) Cathode beam tubes giving image such as television, monitor or other electrical equipments working with voltage less than 30 kV not exceeding 1 µSv/h (0.1 mrem/h) dose rate at any point 10 cm far away from any surface under normal working conditions.

e) (Amended: OG-29/9/2004-25598) In case the following subjects are met at the same time by ionizing radiation emitting, X-ray, cathode ray and similar rigs not including radioactive material and out of the conditions determined in paragraph (d);

1) Rigs found appropriate for use by the Authority by taking their superiority into consideration against their possible harms.

2) Rigs with a dose rate not exceeding 1 µSv/h (0.1 mrem/h) at a point 10 cm far away from surface under normal working conditions.

f) Permission obligation is sought by the Authority for food, medical equipments, medicines and similar consumption products those contain radioactive materials even they are in the exemptions limitations.

Materials not permitted even though they are under limitations

Article 6 – Import, export, manufacture, keep, use and storing toys, school supplies, clothes, cosmetics, households and similar materials containing radioactive material are prohibited. Otherwise provisions of Article 75 of this Regulation are applied.

PART TWO

(Amended expression: OG-3/6/2010-27600) Basic Safety Standards on Radiation Protection

SECTION ONE

(Amended expression: OG-3/6/2010-27600) Radiation Protection System

Basic Principles of Dose Limitation System

Article 7 – (Amended expression: OG-3/6/2010-27600) Three basic principles of dose limitation system used in radiation protection are given below:

a) Necessity of the Applications: No radiation application is permitted by taking harmful results of irradiation if it doesn't have any net benefits.

b) (Amended: OG-3/6/2010-27600) Optimization: For all the possible irradiations, receiving dose should be kept as low as reasonably achievable by taking into account quantity of personnel doses, number of persons will be irradiated, economic and social factors at the applications that cause radiation exposure.

c) (Amended: OG-3/6/2010-27600) Dose Limitation: With the exception of medical exposures, equivalent dose or effective dose in relevant organ or tissue caused by all permitted irradiation should not exceed the appropriate annual dose limits determined in Article 10 of this Regulation.

SECTION TWO

Dose limits

Concepts relevant with the dose limits

Article 8 – (Amended expression: OG-3/6/2010-27600) Concepts relevant with the dose limitations used in radiation protection are given below:

a) Primary limits: Limits of annual "equivalent dose", "effective dose", "committed equivalent dose", committed effective dose" or "collective effective dose" of a determined individuals group those can be received by radiation workers or individuals of community.

b) Secondary limits: Dose limits when the primary dose limits can not be applied directly. In case of external exposure secondary limits are indicated with "equivalent dose index" and in case of internal exposure they are indicated with "annual by intake limits" (ALI).

c) Derived limits: They are derived limits from primary limitations according to a certain model and if this case is complied with, it will be accepted as complied with primary limits.

d) Permitted limits: Limits those determined by the Authority and usually less than the primary and secondary limits.

e) Operation limits: Limits determined by the License Holder provided that not exceeding the primary and secondary limits determined by the Authority for the entire radiation sources whatever their type is.

Reference Levels

Article 9 – **(Amended expression: OG-3/6/2010-27600)** Levels determined in order to start a special application for any size used in radiation protection programs. Reference levels determined by the Authority are given below.

a) Record Level: (Amended expression: OG-3/6/2010-27600) Records of equivalent dose, effective dose or body intake quantities must be taken and kept in order to provide radiation protection. Annual dose limits records start to be kept if annual dose limits given in Article 10 of this Regulation exceed 0.2 mSv for radiation workers, 0.01 mSv for public.

b) Inspection level: Equivalent dose, effective dose or intake quantity needed to be inspected more. For one month, this level is 1/10 of annual dose limit given in Article 10 of this Regulation.

c) (Amended: OG-3/6/2010-27600) Intervention Level: Values which are predetermined by the Authority and indicate equivalent dose, effective dose or quantities of intake and intervention should be considered when exceeded. Also, it is a situation in which annual equivalent dose limit determined in Article 10 of this Regulation is taken at a time and exceeded in the same year. Levels of intervention;

1) Action Level: Equivalent dose rate and level of concentration of radioactivity that require remedial and protective actions in case of continuously irradiation or danger. Action level for acute exposures is indicated in Article 48 and for chronic exposures in Article 49 of this Regulation.

2) Guidance Level: It is a dose level which may require taking measures if exceeded. Guidance levels foreseen in chronic exposures are stated in Article 37 and in medical applications are stated in Article 28 of this Regulation.

Annual dose limits

Article 10 – Annual dose limits are determined separately for radiation workers and public members in accordance with the international standards without any detriment to health. Annual total dose is the sum of the doses received from internal and external irradiations. Radiation dose exposing over those limitations due to sources under control and applications are not permitted and medical exposures and natural radiation doses are excluded from these limitations.

a) (Amended: OG-29/9/2004-25598) Effective dose for radiation workers can not exceed 20 mSv for consecutive five years and 50 mSv for one year. Equivalent dose limit for hand and foot or skin is 500 mSv, for lens it is 150 mSv. Equivalent dose of a 1 cm2 area exposed to highest radiation dose for skin is accepted as average skin equivalent dose regardless of the dose received by the other areas.

b) (Amended: OG-29/9/2004-25598) Effective dose for community members can not exceed 1 mSv. For special conditions 5 mSv per year can be permitted provided that not to exceed 1 mSv average for consecutive five years. Annual equivalent dose limit for skin is 50 mSv, for lens 15 mSv.

c) Persons younger than 18 years old can not be worked in radiation works according to Article 6 of Decree. Effective dose for students and interns between 16 and 18 years old, whose education needs radiation sources to be used provided that with education purposes, can not exceed 6 mSv in any year. However, equivalent dose limit for hand, foot or skin is 150 mSv, for lens it is 50 mSv.

Irradiations planned for special conditions

Article 11 – Those are the irradiations, which necessitate more effective dose exposing than the normal applications and over the annual dose limits, made by the permission of the Authority in special conditions where there are no other methods. Dose limits for the radiation workers, who will be exposed to irradiation in special conditions, can not exceed 50 mSv for any year, 20 mSv annual averages for 10 consecutive years and 100 mSv in total.

Radiation workers who are exposed to doses five times higher than the annual effective dose and radiation workers in a pregnancy age can not be assigned for irradiations planned for special conditions.

Dose limits for pregnant radiation workers

Article 12 – (Amended with heading: OG-29/9/2004-25598)

Female worker whose pregnancy is determined will inform administration in order to rearrangement of the working conditions. Informing on pregnancy doesn't impede her work, if needed working conditions can be rearranged. Therefore, dose that the unborn child exposed ensured at the minimum level and complied with the dose limits determined for the community.

Female workers in the breast-feeding period shouldn't be employed where there is a risk of radioactive contamination.

Secondary limits for occupational exposure

Article 13 – In order to provide compliance with the dose limits for irradiations according to duty annual body intake limits (ALI) values given in Annex 2 are used.

Secondary limits for critical groups

Article 14 – 1/10 of the suitable ALI values given in Annex 2 are used for critical group members constituted of adults and in case of internal irradiation 1/100 of the suitable ALI values are used for the critical group members constituted of infants and children.

SECTION THREE

Radiation Areas

Classification of Radiation Areas

Article 15 – Fields, where annual dose exposing has a possibility to exceed 1 mSv value, are called as radiation fields and classified as follows.

a) Controlled areas: Areas where entrance and exit of the radiation workers are subject to private supervision, where their works are subject to private rules from **(Amended expression: OG-3/6/2010-27600)** the radiation protection point of view and where workers might be exposed to radiation dose 3/10 more than the average annual dose limits of five consecutive years.

The following warning signs are obligatory at the entrance of the supervised areas.

1) Basic radiation symbols indicating radiation areas (Annex-3).

2) Signs with necessary information, symbols and colors in order to indicate importance and features of the radiation danger comprehensibly.

3) Warning signs showing that protective cloth and tools must be used and that there must be limitation for the time in the areas with radiation and contamination risk.

b) Supervised Areas: Areas where there is possibility to exceed 1/20 of the annual dose limits for workers but exceeding 3/10 is not expected and where personal dose monitoring is not needed however environmental radiation must be observed.

Monitoring of radiation areas

Article 16 – Appropriate radiation monitoring equipments and dosimeters are used for monitoring of the radiation areas. Radiation/radioactivity level measurements of the radiation areas are made with the periods and methods indicated by the Authority. Calibration of the equipments used during these measurements is made in Secondary Standard Dosimeter Laboratories of the Authority in intervals approved by the Authority.

Students

Article 17 – Training for the students and interns, who are between ages 16 and 18, can only be permitted in the supervised areas.

Visitors

Article 18 – Visitors can enter controlled areas by no means and can't enter supervised areas without permission of **(Amended expression: OG-3/6/2010-27600)** the radiation protection responsible. Entrance and exit times of the permitted visitors are kept by **(Amended expression: OG-3/6/2010-27600)** radiation protection responsible.

PART THREE

Irradiations

SECTION ONE

Occupational Exposure

Occupational Exposure

Article 19 – Annual dose limits are given in Article 10 of this Regulation for occupational exposure, in Article 11 irradiations in special conditions, in Article 15 radiation areas, in Article 70 records and in Article 71 responsibilities are given.

Working conditions

Article 20 – Working conditions of the people exposed to radiation in duty bound are classified as follows:

Working Condition A: Working condition with the possibility of exposing effective dose more than 6 mSv per year or exposing more than 3/10 of annual equivalent dose limits for lens, skin and feet.

Working Condition B: Working condition with the possibility of exposing radiation doses that will not exceed the values given in Working Condition A.

Personal dosimeter obligatory

Article 21 – (Amended: OG-3/6/2010-27600) Persons, who work in Working Condition A, is obliged to use personal dosimeter.

Dosimetry service is provided by the Authority and the organizations which it approves and results of dosimetric evaluations are recorded to the central dose registration system.

Eligibility criteria, operating procedures and principles of the organizations that provide dosimetry service are determined by the Authority.

Protective clothing and equipment

Article 22 – Protective clothing and equipment are used according to characteristics of the work.

Medical surveillance

Article 23 – (Amended: OG-3/6/2010-27600) The medical examinations of radiation workers, who work in Working Condition A, are performed before starting work and at least once a year in order to determine the suitability of the health conditions for the duties they carry out.

SECTION TWO

Medical exposures

Radiation Protection of Patients

Article 24 – (Amended with heading: OG-3/6/2010-27600) Besides giving priority to achieve the purpose of radiation applications performed for diagnosis and treatment, fulfillments of the following points are provided by the License Holder in order to protect the patients from radiation:

a) No patient be administrated a medical exposure unless the exposure is prescribed by a physician.

b) The designation of dose quantity that the patient will receive or needs to receive and all the necessary information needed for protection of the patient during medical irradiation are already indicated in written and applied.

c) With respect to radiation protection application-specific educated personnel is employed.

Justification of medical exposures

Article 25 – The following conditions are permitted in medical exposure:

a) Medical exposures are applied when the benefits of the diagnosis and treatment with the radiation are more than the damages of the radiation when it is compared with the alternative techniques.

b) Medical exposures with occupational, legal or health insurance purposes can not be done if there is no expectation relevant with health and without asking opinions of the professional establishments on application type.

c) Radiological methods in health survey of the community shall be applied if methods shall give net profits and if the economical and social values cover the health risk.

d) Medical exposures with the research purposes are not permitted without the Ethic Committee proposals and written approvals of the health organizations and written approval of the researcher.

Devices used in medical exposures

Article 26 – (Amended with heading: OG-3/6/2010-27600) Devices used in medical irradiations are subjected to the provisions of the Medical Device Directives published on the Official Gazette dd. 9th of January 2007 and no. 26398.)

Quality assurance for medical exposures

Article 27 – (Amended: OG-3/6/2010-27600) Quality control programs related with radiation sources and hardware effect radiation dose and application-specific quality assurance programs are created and carried out in facilities in which medical irradiations are applied.

Guidance levels for medical exposures

Article 28 – Radiation dose that will be received by people during exposures due to diagnosis, treatment, training and research at the occupational and social health surveys must be in compliance with the guide levels foreseen by the Authority. Those levels are given in Annex-4.

Medical exposures with research purposes

Article 29 – Volunteer exposures with research purposes those have been approved in written by persons and Ethical Committee can not exceed annual dose level permitted for public. Permitted average annual dose level can be permitted for radiation workers under very special conditions provided that being approved by the Authority.

Volunteers and visitors

Article 30 – Effective dose that will be received by the persons who came to visit patient or to help patient who is under diagnosis and treatment, provided that being consciously and voluntarily, can not exceed 5 mSv during diagnosis and treatment period.

Maximum radioactivity level that patients can be discharged

Article 31 - (Amended: OG-29/9/2004-25598) The following subjects shall be complied with in order to discharge patients who are given 131 radioactive material.

a) Patients, who are given I – 131 radioactive materials over 800 MBq, shall be waited in an isolated separate room that has a liquid waste system and room project found accepTable by the Authority until radioactivity quantity in the body falls below 600 MBq and dose rate 1 meter far away

the patient falls below 30 μSv /hour, and after that they are discharged provided that complying with paragraph (e).

b) Patients, who are given I – 131 radioactive materials up to 800 MBq, shall be waited in an isolated separate room until radioactivity quantity in the body falls below 600 MBq and dose rate 1 meter far away the patient falls below 30 μSv /hour, and after that they are discharged provided that complying with paragraph (e).

c) Patients, who are given radioactivity up to 600 MBq, are discharged provided that complying with paragraph (e).

d) The instructions given above are determined especially for each patient by taking remained radioactivity on the patient and physical, socioeconomic and life conditions of the patient into consideration. After evaluating special conditions of the patient, patient is discharged provided that complying with the discharge conditions of patients treated with I – 131 given in Annex – V and measures to be taken relevant with contact with other persons and **(Amended expression: OG-3/6/2010-27600)** radiation protection shall be given in written and told verbally according to format given in Annex – VI in return for the signature.

e) Patient data, activity quantity given to the patient, remained activity quantity on the discharged patient and dose rate at 1 m distance from the patient shall be recorded indicating date and time.

Incorrect irradiations of the patients

Article 32 – (Amended with heading: OG-3/6/2010-27600) In the event that patient receives different radiation dose than planned at diagnostic and therapeutic applications, the patient, the radiation protection responsible, the license holder, the related physician and the related office shall be notified about the situation. Patient's condition is evaluated and implementation of the corrective therapy is provided by the license holder. The records related to the situation are kept; the necessary measures are taken so that similar situations won't repeat.

SECTION THREE

Public Exposure

Public Exposure

Article 33 – Annual dose limits those community members can be exposed are given in Article 10 of this Regulation.

Discharge of radioactive materials to the environment

Article 34 – At first, license holder must get permission from the Authority for the applications which need to discharge radioactive material to the environment. License holder applies to the Authority in order to get permission by preparing a report including the following information.

a) Type, quantity and radioactivity of the materials to be discharged to the environment,

b) Critical groups those might expose to irradiation in the environment,

c) Ways of for discharged radioactive material to reach to the critical groups,

d) Measures to be taken on the radiation safety.

If the subjects in the report are seem appropriate from the radiation safety and environment health points of view, the Authority permits discharge of certain types and certain amounts of radioactive materials to the environment. (**Amended last sentence: OG-3/6/2010-27600)** In case some deficiencies are found in the report by the Authority, these deficiencies are asked to be completed and it is not permitted to be release the radioactive material to environment, until the deficiencies are completed.

Inspection and supervision of radioactive materials discharged to the environment

Articled 35 – Organizations discharging radioactive materials to the environment must conform to the limits permitted and they are obliged to make necessary inspection and supervision for

this and to inform results to the Authority periodically. In case of need the Authority might perform an additional environment monitoring program.

Sealed radioactive sources

Article 36 – (Amended with heading: OG-3/6/2010-27600)

By no means may sealed radioactive sources be given to the environment as radioactive waste and license holder may not alienate named sources to another person without giving information to the Authority in writing beforehand.

Sealed radioactive sources, which are abandoned to use and foreseen not to be used again, should not be stored in the facility finally. These sources are sent to its country of origin or radioactive waste processing facility.

Natural Radiation

Article 37 – (Amended: OG-29/9/2004-25598)

Radiation levels in nature are observed by the Authority, in case of need cooperation is made with the relevant ministries, institutions and organizations. There are no dose limitations for the exposures from natural radiations sources. However, **(Amended expression: OG-3/6/2010-27600)** radiation protection system in Article 7 of this Regulation is applied for the exposures occurred from the natural sources those initial state are changed.

Permitted concentration levels for radon from those sources can not exceed 400 Bq/m3 in houses, 1000 Bq/m3 in workplaces.

In order to prevent increase of the natural radiation level exposed due to construction materials used and to hold the exposures of the community members at minimum level control of the radioactivity in these materials is essential.

Conditions that the irradiation due to natural radiation is increased

Article 38 – (Amended: OG-29/9/2004-25598)

Flight personnel and persons working in mines who are not working with radiation sources but exposing to natural radiation due to their works do not count as radiation workers. However, taking control measures is essential in order to protect flight personnel and workers who work in mining and processing activities of mine ores including uranium and thorium and mines (mineral salts, phosphorus materials) including natural radionuclide with high level radioactivity.

In the underground mines and similar working mediums followings are provided:

a) Measuring radon in environment,

b) If radon concentration exceeds 1000 Bq/m^3 ventilation system must be established and worked effectively,

c) Use of dust masks in order to prevent breathing dust particles with radioactive content, including the workers working in production processes, carry and storage activities of those, in which raw materials include uranium, thorium, phosphorous material.

Workers working in the scope of this Article are informed about the radiation they received and health risk.

SECTION FOUR

Exposures in Case of Accident or Emergency Situations

Emergency Plan

Article – 39 An "Emergency Plan" is prepared according to Article 40 of this Regulation in order to perform in dangerous or accident situations according to the features of the radioactive sources used in facilities by the license holder.

Issues those must take part in the plan

Article 40 – Issues those must take part in the "Emergency Plan" are given below:

a) Persons charged relevant with the dangerous situation or accident, their titles, addresses and telephone numbers,

b) Communication system with the responsible persons inside or outside the facility,

c) Radiation measuring programs those will be performed,

d) Possible accident scenarios and measures to be taken,

e) Necessary equipments and tools and devices.

Renewal of the plan

Article 41 – (Amended with heading: OG-3/6/2010-27600)

Emergency Plan prepared by license holder together with radiation protection responsible is revised regularly, is tested with field exercises and is renewed in case of necessity.

Notifying of accident or emergency situation to the Authority

Article 42 – (Amended: OG-3/6/2010-27600)

In case of emergency or accident, required intervention is done by the license holder immediately and the situation is notified to the Authority promptly. After doing examination and evaluation by the Authority on-site in case of necessity, necessary issues for radiation safety are carried out immediately by the license holder.

Report relating to emergency situation or accident

Article 43 – After the accident or end of the emergency situation; occurrence of the accident, radiation doses radiation workers and others exposed to and body intake way of the radioactive materials and cause shall be investigated by the license holder or a person charged with investigation by license holder and result shall be reported to the Authority as soon as possible together with the film and/or TLD dosimeter and if necessary also with chromosome aberration test results of the radiation workers.

Medical intervention

Article 44 – Decontamination or medical interventions of the people who have radioactivity contamination as a result of the evaluation of the report that is determined in Article 43 of this Regulation by the Authority shall be performed in the official or private health organizations suggested by the Authority.

Conditions of the workers contaminated by the radiation

Article 45 –After the radiation accident, if the radiation workers exposed to irradiation over the limits indicated in this Regulation, are reported that there is no objection to continue their former works with a report from an official health organization suggested by the Authority, those workers can continue their former works. Radiation workers who are reported inconvenient for their former works shall be charged with other works by taking their socio and economic conditions, ages and private abilities into consideration, where they will not be exposed to radiation.

Reporting suspicious situations to the Authority

Article 46 – If there is a doubt of overdose but there isn't a dangerous situation or accident is under consideration then license holder shall inform the Authority on research and results of the situation in written.

Loss or theft of radiation sources

Article 47 – (Amended with heading: OG-3/6/2010-27600) In case of loss or theft of radiation sources, the license holder notifies the Authority and the gendarmerie or the central police headquarters responsible for security of region of the situation immediately.

Acute exposures

Article 48 – Action levels relevant with the intervention for the doses expected to be absorbed by the organ or tissue less than 2 days time for acute exposures are given in Table 1.

Table 1 – Action levels for acute exposure

Organ or tissue	Dose (Gy)
Whole body (bone marrow)	1
Lungs	6
Skin	3
Thyroid	5
Lens of eye	2
Gonads	3

Chronic Exposures

Article 49 – Action levels given in Table 2 are applied for chronic exposures.

Table 2 – Action levels for chronic exposures

Organ or tissue	Equivalent dose rate (Gy/year)
Gonads	0.2
Lens of eye	0.1
Bone Marrow	0.4

PART FOUR

License, Permission, Inspection, Records

SECTION ONE

License

License obligatory

Article 50 – (Added: OG-29/9/2004-25598)

To get license from the Authority is obligatory to manufacture, import and export, buy, sell, transfer, store, maintenance, repair, set up, dismantle, change, work with the radiation sources and use the radiation sources in the scope of this Regulation and Radiation Safety Decree. This license includes the operation of the sources applied for, under the responsibility of the approved persons and at the address indicated in the application.

a) (Annulled: OG-3/6/2010-27600)

b) If these activities require license, authorization or any document from other ministries and/or organizations, license from the Authority is precondition for them. For the activities subject to Regulation on Environmental Impact Assessment (EIA) issued in Official Gazette dd. 7/2/1993 and with no. 21489, license procedures do not start without the positive decision of the Ministry of Environment.

License Application

Article 51 – (Amended: OG-3/6/2010-27600)

The persons should pay the fee to the bank account of the Authority and apply to the Authority with the necessary application document specific for each application determined by the Authority in order to acquire a license for the activities in the scope of the Article 50 of this Regulation.

Inspection of the applications

Article 52 – Application documents are inspected by the Radiation Health and Safety Office of the Authority, if there are any missing things in the application documents application is not accepted and applicant is informed on the missing things and reapplication is requested. If the missing things do not completed in three months provisions of Article 75 of this Regulation are applied and license application fee is recorded as income to the Authority.

Granting license

Article 53 – (Amended first paragraph: OG-3/6/2010-27600) If the application documents are sufficient, a control report is arranged by the experts of the Authority by performing radiation control in the place. Information and application documents are evaluated and if they are found appropriate license document is granted. Validity period of the license is 5 years. If the license document is not reached or lost, the Authority is informed in written form with payment document and a new document is rearranged.

In case the shortages are indicated in the control report, applicant is informed in order to make up shortages in three months time. If a written excuse is sent to the Authority, time can be extended. After informing that the shortages are made up in the given time, as a result of an evaluation if needed radiation control is made again and if it is determined that the shortages are made up, license is granted. Otherwise license application will be canceled and provisions of the Article 75 of this Regulation shall be applied and fee is recorded as income to the Authority.

Change in license conditions

Article 54 – License holder must apply to the Authority in written at least 15 (fifteen) days before making changes in case of any change in license conditions or at the place where radiation source is found and used. Other wise provisions of Article 75 of this Regulation shall be applied.

Change of the license holder or radiation protection responsible

Article 55 – (Amended with heading: OG-3/6/2010-27600)

In case of change of the license holder or radiation protection responsible, shall be applied to the Authority with the documents required by the Authority.

In cases that require change on the license document, a rearrangement of license document is done in return of the payment. The validity of the license period does not change.

Renewal of license

Article 56 – (Amended: OG-3/6/2010-27600)

If there is a change in the radiation source or at the location it is used during the license period application shall be made to the Authority with payment document and the information and documents

required by the Authority. License renewal procedures are performed according to Article 53 of this Regulation.

Extension of validity period of license

Article 57 – (Amended: OG-3/6/2010-27600)

License holder should apply to the Authority in written form with payment document and the documents required by the Authority for to extend the validity period of license, 6 (six) months before the end of validity period, by indicating that there is no change in the license conditions by license holder.

License is extended as a result of the inspection if seemed necessary after the evaluation of the applications those made in time, by the Authority.

Exceeding license period

Article 58 – (Amended: OG-3/6/2010-27600)

Licenses not extended in time are invalid. Facility doesn't operate until renewal of the license according to the Article 52 and 53 of this Regulation. Otherwise provisions of Article 75 of this Regulation are applied.

Cancellation of license

Article 59 – (Amended: OG-3/6/2010-27600)

Persons and organizations whose licenses are canceled according to Article 13 of the Decree could not apply for any license to operate in this field.

Cancellation of the license would not cease the responsibilities, determined by the Authority, of license holder until they were completed. License holder should return the radioactive sources to the country of origin or send them to the radioactive waste facility or sell/transfer them to other person. Selling/transfer procedure would be realized if the application by the person to whom the sources to be sold/transferred to the Authority is approved by the Authority. Otherwise the Article 75 of this Regulation is applied.

Cancellation of license upon request

Article 60 – (Amended: OG-3/6/2010-27600)

In case the license holder intends to cease the activities with in the scope of the license, the license holder should apply to the Authority with the information about the radiation source.

Cease of the license would not cease the responsibilities, determined by the Authority, of license holder until they were completed. In case of selling/transfer of the radioactive source, selling/transfer procedure could be realized if the application by the person, to whom the sources to be sold/transferred, to the Authority is approved by the Authority. Otherwise the Article 75 of this Regulation is applied.

SECTION TWO

Permission

Import – Export Permission

Article 61 - (Amended: OG-29/9/2004-25598)

Persons or organizations acquired license for import, export and transfer of the radiation sources according to Article 53 of this Regulation are obliged to obtain permission for each import, export and transfer. Validity period of the permissions given are three (3) months. Upon the written application made to the Authority before the end of the valid period and including the excuse this period could be extended if it is seem appropriate by the Authority. Otherwise validity of the permission ends.

Application for import permission

Article 62 - (Amended: OG-3/6/2010-27600)

Any person who acquired license or the application for the license has been approved should apply for each import document required by the Authority after the payment of fee.

Import permission without trade purposes

Article 63 – (Amended: OG-3/6/2010-27600)

In case of the import to be made by the organizations without any intention of source trade and for their own use of sources or import is to be made through the mediation of financial rent/leasing organizations, the license holder/ person whose license application approved by the Authority should make the payment to the Bank account of the Authority and apply to the Authority with the required document.

(Amended heading: OG-29/9/2004-25598) Delivery condition of radioactive material

Article 64 – Companies which have license to sell radioactive materials to the other persons and organizations must deliver those sources only to the persons and organizations which acquired license from the Authority.

Transport permission

Article 65 – (Amended: OG-3/6/2010-27600)

Transport of the radioactive materials should be carried out by the license holder in compliance with Regulation on Safe transport of Radioactive Material issued in the Official Gazette on 8/7/2005 with no. 25869. Transport permission should be taken in cases determined by the Authority.

Export permission for radioactive materials

Article 66 – (Amended: OG-3/6/2010-27600)

License holder applies to the Authority in written with the documents required by the Authority and receipt showing that export permission fee is paid. Permission is given by the Authority after determining that the container is in compliance with the Regulation on Safety Transport of the Radioactive Materials. Written information on the address and responsible person of the radioactive source until the sending abroad process is actually performed. One copy of each official documents (bill of lading, certificate of clearance outward, etc.) documenting that the sending procedures are completed by the sender company shall be delivered to the Authority in 15 (fifteen) days following the dispatch of the radioactive source to abroad.

SECTION THREE

Inspection

Principles of inspection

Article 67 – General principles of the inspection include the followings in addition to performance according to the relevant Articles of the Decree:

a) Physical inspection of the places where radiation sources are found.

b) Determining the radiation levels, radioactivity quantities and/or concentrations in various places and points.

c) Determining compliance with the private conditions for the relevant sections according to license conditions and license type.

d) Inspection of the records whether they are kept in accordance with the Article 69 of this Regulation or not.

e) Inspection of the measures those projected in Decree and in provisions of this Regulation to protect radiation workers, community and environment whether taken or not.

f) Inspection of compliance with the provisions of this Regulation and Decree and other legal provisions relating to radiation safety during the entrance, exit, transport and transition of the radiation sources.

Inspection results

Article 68 – (Amended: OG-3/6/2010-27600)

Inspection report prepared as a result of the inspections performed by the inspectors carrying out inspection function of the Authority.

As a result of the evaluation of inspection report, the discrepancies are sent to the inspected person in written and at most 3 (three) months time period is given to make up shortages and deficiencies. The application is ceased temporarily until the discrepancies are made up if it is deemed necessary by the Authority regarding to the radiation safety. Cease of application is canceled if discrepancies are made up after the given time. License is canceled if the discrepancies are not made up.

As a result of the evaluation of inspection report, in case it is determined that the radiation safety is not met and this situation could threat radiation protection of the public and environment, the license is canceled.

SECTION FOUR

Records

Obligation of keeping records

Article 69 – Real persons, private institutions and organizations in the scope of this Regulation are obliged to keep records in accordance with the principles indicated below. Those records shall be kept for 30 years.

a) Records relating to personnel:

1) Date, no and scope of the licenses and persons indicated on the license,

2) Names of the radiation workers and entry and severance dates

3) Personal dosimeter reports of the radiation workers.

4) The entire medical examination results of the radiation workers performed according to Article 23 of this Regulation before they start work.

5) Periodical medical examinations of radiation workers performed according to Article 23 of this Regulation and results of medical examinations performed in cases seemed necessary by the Authority and if available other medical exposures' results.

b) Records relating to radiation sources:

1) Date, no and using purposes of the granted licenses and type and radioactivity of the radiation sources determined on the license document,

2) Date and procedures relating to entrance into the country, purchase, set up and calibration of the radiation source and names of the persons relating to subject.

3) Dates of the processes such as maintenance, repair, leakage test, change of tube and source of the radiation source and scope of the works performed and names of the persons relating to subject.

c) Records relating to radioactive wastes:

1) Type, quantity, radioactivity and dates of the radioactive wastes.

2) Quantities of the radioactive wastes discharged to the environment or sent to the Authority in order to store and process.

d) Records relating to accident:

1) Location and date of the accident.

2) Occurrence of the accident

3) Type and radioactivity of the radiation source caused accident,

4) Radioactive materials those taken into body and reasons of taking.

5) Time exposed and radiation doses.

6) Medical examination results of the persons affected from the accident and medical applications performed.

7) Report relating to accident

Inspection of the records

Article 70 – (Amended: OG-3/6/2010-27600)

Records indicated in Article 69 of this Regulation can be inspected during the inspections or in cases the Authority sees it necessary.

SECTION FIVE

Duty and Responsibilities

Responsibilities of the license holder

Article 71 – Responsibilities of the license holder are given below.

a) (Amended: OG-29/9/2004-25598) To prepare local instructions with radiation protection responsible in order to perform standards and law relevant with the security of radiation sources and radiation safety, inform workers in accordance with the instructions, to prepare and provide performance of the "Dangerous Situation Plan" for danger or accident, to perform exercises relevant with the subjects determined in the plan and to provide performance when necessary.

b) To provide health report indicating compliance with the work for the radiation workers who will be engaged and to make medical examinations according to Article 23 of this Regulation during the period they work.

c) (Annulled: OG-3/6/2010-27600)

d) To take every kind of measures in order to protect persons who will be exposed to irradiation relevant with the applications of Article 11 of this Regulation and to give information on the possible dangers of this application and measures.

e) If it seemed necessary by physician as a result of the examination, to provide follow up or treatment of the situations those might arise with the radiation effects in case discharge of radiation workers with reasons such as resignation, retirement or health.

f) To inform the Authority and take the measures suggested by the Authority if dose limits or reference levels indicated by the Authority are exceeded or there is a suspect to be exceeded.

g) (Amended: OG-29/9/2004-25598) To inform the Authority and to take permission by completing the information and documents determined in the Article 34 of this Regulation and in the other relevant Regulations in cases where radioactive materials are to be discharged to the environment is under consideration.

h) (Annulled: OG-3/6/2010-27600)

ı) (Amended: OG-3/6/2010-27600) To assign radiation worker with adequate qualification and quantity and radiation safety officer and radiation safety adviser, in case it is required, regarding to the number and type of the radiation sources used.

i) To provide trainings relating to Radiation protection of the radiation workers.

j) To provide maintenance, repair and source exchange processes of the radiation sources found in the facility to be executed by the persons and organizations who took license/permission from the Authority.

k) To provide keeping the records determined in Article 69 of this Regulation.

l) To have Decree and Regulations issued by the Authority relating to radiation safety found in the facility.

m) (Added: OG-29/9/2004-25598) To ensure the preparation of quality control and quality assurance programs and to apply the quality control and quality assurance programs

n) (Added: OG-29/9/2004-25598) To in form the Authority about any activity involving the commissioning of equipment containing radioactive sources, decommissioning, change of source and activity that requires intervention to the source.

Responsibilities of the administration

Article 72 - (**Amended with heading: OG-29/9/2004-25598)** He is obliged to assure work power and technical and financial infrastructure needed to provide execution and continuity of the licensed activities in accordance with the laws and to perform issues determined in Article 71 of this Regulation if the administration is different.

(Amended expression: OG-3/6/2010-27600) Duties of the radiation protection responsible

Article 73 – (Amended expression: OG-3/6/2010-27600) Duties of the radiation protection responsible are given below:

a) (Amended: OG-29/9/2004-25598) To have appropriate equipments available and in use for radiation measurements of the facility, systems, workers and patients and to provide calibrations of the current equipments.

b) To prepare and perform measurement programs relating to radiation protection in the facility.

c) (Amended: OG-29/9/2004-25598) To prepare local instructions with the license holder to perform standard and law relating to radiation safety and security of the radiation sources, to inform workers in accordance with the plans, to provide performance of the plans and to prepare "Dangerous Situation Plan" for a dangerous or accident situation, to perform exercises relevant with the subjects determined in the plan and to provide performance when necessary.

d) To hang up warning labels suitable for radiation areas, working instructions and accident situation intervention plan on suitable places.

e) To provide performance of the radiation safety criterion in planning radiation areas and in selection of the equipment and/or new radiation sources.

f) (Amended: OG-29/9/2004-25598) To ensure safety and security of the radiation sources, to perform leakage test, storage and following.

g) (Amended: OG-29/9/2004-25598) To execute works necessary for the management of the radioactive wastes, to ensure security and safety of the sealed radioactive sources those must be stored temporarily due to compulsory reasons.

h) To take measures relevant with the radiation safety for radiation workers and visitors.

ı) To take part in the trainings of the radiation workers on radiation protection.

i) To keep the records determined in the Article 69 of this Regulation.

(Amended heading: OG-3/6/2010-27600) Duties of the radiation protection advisor

Article 74 – (Amended first sentence: OG-3/6/2010-27600) Duties of the radiation protection advisor are determined below.

a) To take measures necessary for the safety of radiation sources and for **(Amended expression: OG-3/6/2010-27600)** radiation protection of the radiation workers, public and environment,

b) To perform planning and shielding calculations and projects of facilities in which radiation sources are used and to control them,

c) To monitor radiation level regularly in facilities in which radiation sources are used,

d) To take measures to prevent radioactive contamination in facilities which are working with radiation sources and to ensure measures to be taken,

e) To take measures relevant with the management of the radioactive wastes from the facilities which are working with radioactive sources and to ensure measures to be taken,

f) To take necessary measures in order to provide safe transfer of the radioactive material and to ensure measures to be taken,

g) To ensure records determined in Article 69 of this Regulation to be kept,

h) To perform personal dose and risk assessments of the radiation workers,

ı) (Amended: OG-3/6/2010-27600) To take necessary measures in order to minimize radiation and radioactive contamination effects on persons, public and environment, to ensure measures to be taken, to determine activities to be performed in case of danger,

i) (Amended: OG-3/6/2010-27600) To prepare training programs and to participate in trainings for the workers working with radiations sources.

PART FIVE

Contrary Behaviors, Insurance and Final Provisions

Contrary Behaviors

Article 75 – (Amended: OG-3/6/2010-27600)

Any legal person that has been determined as working without license, or not completed the license procedure, or not completed the items determined during the inspections, the Authority would apply to the civilian administration in order to cease the radiation application and to take necessary provisions and notify the relevant authorities or attorney generalship to start legal and administrative investigation.

Insurance

Article 76 – (Annulled: OG-3/6/2010-27600)

Legislation annulled

Article 77 – Radiation Safety Regulation issued in the Official Gazette dd. 6/9/1991 and with no. 20983 annuls with the enforcement of this Regulation.

Enforcement

Article 78 - This Regulation shall be enforced as of issue date.

Execution

Article 79 - The provisions of this Regulation shall be executed by the Prime Minister.