

## RADIATION SAFETY DECREE

(Unofficial Translation)

### PART ONE

#### General Provisions

#### SECTION ONE

#### Scope, Terms and Abbreviations

##### Scope

**Article 1** - The provisions that should be observed by official or private organization or real entities that keep, use, produce, import and export, acquire, sell, transport and store the ionizing radiation sources are given in this Decree.

The radioactive materials which have a specific activity of less than 0.002 micro curies per grams (74 kilo Becquerel per kilogram) are out of the scope of this Decree.

##### Terms and Abbreviations

**Article 2** - The meaning of the terms and abbreviations mentioned in this Decree are given below:

**A-** Ionizing radiation; electromagnetic rays that can produce ion pairs during passage through material by interacting with it, like X and gamma rays, and corpuscular radiations like free neutrons, heavy ions and charged particles having kinetic energy.

Sound waves, ultraviolet rays and the regions having larger wave lengths of the electromagnetic spectra are out of the scope of this definition.

In this Decree, the term "radiation" is used instead of the term "Ionizing radiation".

**B** - Curie (Ci) and Becquerel (Bq); the units of the radioactivity.

1- 1 Curie is radioactivity which gives  $3.7 \times 10^{10}$  disintegrations per second,

2- 1 Becquerel is the number of disintegrations in one second.

1 Becquerel corresponds to  $2.7 \times 10^{-11}$  Curies.

**C** - Rem (rem); the unit of biological equivalent dose used in the radiation protection; is equal to the multiplication of absorbed dose and quality factor.

Rad (rad); the unit of absorbed dose and it means any radiation dose cause absorption of 100 ergs of imparted energy into 1gr of material.

**D** - Radiation source; the radioactive materials which emit ionizing radiation and equipments which produce or emit ionizing radiation.

**E** - Radioactive materials; materials containing an isotope, the nucleus of which has been disintegrated spontaneously by emitting one or more ionizing radiation, as alloy mixture, solvent or composite.

**F** - Radiation emitting equipments; equipments containing radioactive materials and manufactured in order to emit one or more ionizing radiation within certain safety measures and under control.

**G** - Radiation producing equipments; the equipments, like X ray machines, betatron, linear accelerator, cyclotron and neutron generators, that are designated as to produce radiation through acceleration of the charged particles or heavy ions within certain safety measures and under control by use of any of electronically, magnetic or electro mechanic methods.

**H** - Specific activity; is the amount of activity expressed as Curie for one gram

of radioactive material and Becquerel for one kilogram of material.

**I** - Controlled areas; areas where the entries or exits are subject to special supervision and interior studies are depend on specific rules in terms of radiation safety.

**J** - Radiation areas; areas where the workers are exposed to ionizing radiation. According to the level of exposure, these areas are classified into two as follows;

1- Working condition A; where the annual exposure might exceed three-tenths of the equivalent dose limits.

2- Working condition B; where exceeding of the three-tenths of the annual equivalent dose limits is not expected.

**K** - Radiation worker; persons who continuously work in the controlled area or work with the radioactive sources. Those workers who temporarily or occasionally work in the controlled areas or work with the radioactive sources are not considered as radiation worker.

**L** - Radiation accident is the event of receiving dose exceeding the limits, too much, specified in radiation protection standards and occurrence of radioactive contamination as a result of unexpected.

**M** – Radioactive fallout; is the fall of radioactive materials, that are spreaded in to the atmosphere due to nuclear explosion, to the earth surface in a various ways.

**N** - Authority means Turkish Atomic Energy Authority.

The meanings of the other terms mentioned in this Decree are given in the Nuclear Term Regulation.

## **SECTION TWO**

### **Functions and competencies**

#### **Execution of services**

**Article 3-** Services related to radiation safety carried out by Radiation Health and Safety Department.

#### **Functions and competencies**

**Article 4** - The functions of the Radiation Health and Safety Department are as follows:

**A-** To carry out the studies in order to specify the principles, regulations, standard and measures related to radiation safety and to ensure their implementation.

**B** - To issue license for the ionizing radiation sources and for the official or private organization and enterprises and real entities who keep, use, produce, transport, and store, such sources, Additionally, to cancel the license temporally or continuously in case of non compliance with the license stipulations. To give decision of complete close down of the equipment and facility and to inform the legal authorities in order to carry on prosecution in case it is necessary.

**C** - To issue permission for the radiation sources for their entrance into the country, exit, transportation and transit passage.

**D** - To classify and inspect the activities and radiation areas within the scope of this Decree with respect to radiation safety.

**E** - To take the necessary measures and ensure them be taken in order to protect the public and workers working with radiation sources from the dangers of the radiation

**F** - To take the necessary measures and ensure them be taken in order to prevent the contamination of the environment by the radioactive residues and fall out.

**G** - To define the necessary measures to be taken in case of radiation accident and to ensure their implementation.

**H** - To cooperate with the ministries and organizations concerned for the radiation safety.

**I** - To make researches, trainings and publications regarding with radiation safety and coordinate these work with the other organizations concerned.

## **PART TWO**

### **Basic Standards, License, Permission, Inspection**

#### **SECTION ONE**

##### **Basic Standards**

###### **Basic Standards for the radiation safety**

**Article 5** - The principles and measures related with radiation safety are regulated as to the basic standards of the radiation protection given below.

**A** – The whole body dose due to internal and external sources of the persons occupationally working with radiation sources and exposed to radiation should not exceed 5 rem per annum.

**B** – The total dose due to internal and external sources of the member of the public and persons not considered as radiation worker, for whole body, should not exceed 0.5 rem per annum.

###### **Age limitation:**

**Article 6** - Persons who is under the age of 18 can not be worked at the activities within the scope of this Decree.

#### **SECTION TWO**

##### **License**

###### **Activities related with license**

**Article 7** - The keeping, using, producing, import and export, acquiring, selling, transporting, storing of the radiation sources and working with sources within the scope of this Decree are dependent on the license issued by the Authority, If these activities need any other permission, license or documentation taken from the other ministries and organizations, the issuance of such documents is dependent on the issuance of license by the Authority as pre condition.

###### **Types of license:**

**Article 8** - The types of license are given below:

**A** - Licenses issued to the persons who keep, use, produce, import and export, acquire, sell, transport and store the radiation sources.

**B** - Licenses issued for the radiation sources,

1- Licenses issued for the radiation sources used for medical purposes.

2- Licenses issued for the radiation sources used for industrial or other purposes.

**C** - Licenses issued for the places where the radiation sources are used, stored, manufactured and places where the radioactive wastes are disposed and other similar places.

###### **License application;**

**Article 9** - Organizations and persons, who need to have a license in accordance with the provisions of this Decree, have to apply to Authority by petition with the information and documentations given below;

**A** - An official document indicating that they have enough knowledge for the activities performed.

**B** - The license application form which is given by the Authority and filled by

the applicant. Depending on the type of license, other special conditions wanted and documents required are given in the regulation.

#### **Evaluation of the application**

**Article 10** – If documentation attached to the petition is found sufficient; a report is prepared by the experts assigned by Authority by means of control carried out on-site. This report is evaluated by Radiation Health and Safety Department. If it is evaluated that the stipulations are ensured, the license approved by President of Authority is issued for applicant. If there are deficiencies, these are informed to the applicant. Issuing license depend on the condition of the correction of these deficiencies.

#### **Validity period and stipulations for license**

**Article 11-** Besides the special measures needed for license types, license is issued on the general stipulations given below;

**A** - The license is valid for 5 years periods and can be renewed at the end of this time period according to provisions of the Article 12.

**B** - Changes can be done on the special stipulations of the license by the written permission of the Authority.

**C** - The license can not be transferred.

**D** - The holder of the licenses, which are issued in accordance with the provisions of Article 8, sub clauses of B and C and not used any more, is obliged to apply to the Authority for cancellation of the license.

Those who quit from operate the radiation sources and substituted employees should be notified to the Authority by employers.

#### **Renewal of licenses:**

**Article 12** - For the renewal of the license, it is necessary to apply to Authority by petition 6 months before the end of validity period. The documents to be attached to the petition are given in the regulation.

#### **Cancellation of the license**

**Article 13-** During the inspections carried out by the expert of the Authority, if it is determined that the stipulations of the license have been violated or the requirements of the radiation safety have not been met; a report is prepared. This report is evaluated by the Radiation Health and Safety Department. If points set forth in the report are accepted, the license is temporarily canceled by giving a defined period of time for the correction of deficiencies and shortcomings. The decision approved by the President of the Authority is notified to the applicant. In case of correction of these deficiencies within the time the period given, the cancellation is abolished.

### **SECTION THREE**

#### **Permission**

#### **Activities related with permission**

**Article 14** - Transportation, transit passage, entry and exit in or from the country of the radioactive sources depends on the written permission of the Authority. License acquisition in accordance with the provisions of this Decree does not remove the obligation for taking written permission.

#### **Entrance and exit permissions**

**Article 15** - Those who will import and export radiation sources are obliged to apply to the Authority by petition accompanied by the proforma invoice of these sources. The entrance and exit permissions are issued according to the results of the

control performed by Radiation Health and Safety Department. In case of any violation of the provisions of the radiation safety, issuing permission is depends on the correction of this.

#### **Transportation and transit passage permission**

**Article 16** - Those who wish to transport and transit passage of radiation sources are obliged to notify the Authority. If it is necessary, permission is given according to the result of control performed by the expert of Authority at place where transport will start or custom entry.

In case of any violation of the provisions of the radiation safety, issuing permission is depends on the correction of this.

#### **Stipulations of the transportation and transit passage**

**Article 17-** Besides the special stipulations specified in related regulation, transportation and transit passage permission are issued on the general stipulations given below:

**A** - If a specific route has been fixed by the experts of Authority, the transportation should be accomplished on this route.

**B** - Radiation warning signs should be placed to the transportation vehicle.

**C** - Accidents occurring during the transportation and transit passage should be notified to the Authority by the fastest communication means and the measures foreseen by the Authority experts should be fulfilled immediately.

### **SECTION FOUR**

#### **Inspection**

#### **Activities related with inspection**

**Article 18** – The official or private organizations and institutions and real entities within the scope of this Decree in terms of their activities are subject to the inspection of the Authority.

For this purpose, the expert of the Authority has the competency to enter related places, request and control documentation concerned. Related persons are obligated to facilitate for the expert during the inspection.

#### **Principles of Inspections**

**Article 19-** Inspection can be done at any time with or without prior notification. Inspection contains the physical control of the places where the radiation sources are kept, measurements of the radiation levels, the amount of the radioactive materials (concentrations) and the control of the compliance of the entrance, exit, transportation and transit passage of the radiation sources with the provisions set forth in the Decree and Regulation.

The details of the inspections and obligations related with the inspection are given in the Regulation.

### **PART THREE**

#### **Miscellaneous and Final Provisions**

#### **SECTION ONE**

#### **Miscellaneous Provisions**

#### **Obligation for keeping records**

**Article 20** - The official or private organization and enterprises and real entities within the scope of this Decree in terms of their activities are obliged to keep records properly as to provisions set forth in related regulation.

### **Theft and loss of the radiation sources**

**Article 21** - In case of the theft and loss of radiation sources within the scope of this Decree; the necessary measures should immediately be taken by the responsible staff and the situation should be notified to Authority by the fastest communication means.

The measures foreseen in terms of radiation safety by the expert of the Authority as a result of the inspection performed on-site should be immediately taken by the responsible staff. For these issues, if it is necessary, help and cooperation of the authorities concerned should be required.

### **Radiation Accidents**

**Article 22** - In case of radiation accident the measures which are necessary in terms of the license and permission stipulations should be taken immediately by the responsible staff and the Authority should be notified about the accident by the fastest communication means.

The measures foreseen in terms of radiation safety by the expert of the Authority as a result of the inspection performed on-site should be immediately taken by the responsible staff. For these issues, if it is necessary, help and cooperation of the authorities concerned should be required.

### **Radioactive fall out**

**Article 23** -In case the results of the measurements, records and evaluations related with radioactive fall out necessitate, the Authority ensure the necessary measures be taken in order to protect the public and environment by collaborate with the ministries and organizations concerned.

### **Control of the plan and projects of the radiation facilities**

**Article 24** - Those who intend to build the facilities for the utilization, production, storage, disposal of the radioactive waste and such goals; are obliged to apply to the Authority by petition with the plans and projects of the facility. If the plans and projects are considered suitable in terms of radiation safety, this is pointed out on them. If it is not, the changes needed to be done and measures needed to be taken are notified to the applicant by a report. In the course of issuing a building permission, the notification of the Authority that all the plans and projects are convenient in terms of radiation safety is sought. In the course of issuing license for the facility by the Authority, consistency of the facility with respect to the plan and project is controlled.

## **SECTION TWO**

### **Final Provisions**

#### **Regulations**

**Article 25** - The regulations foreseen to be issued in this Decree are enforced within a year time period beginning from the date of issue of this Decree.

**Provisional article:** The licenses issued before enforcement date of this Decree, are valid for a period of 5 years beginning from their date of issuance. For the renewal process of expired licenses, it is necessary to make an application to Authority within the period of two years beginning from the enforcement date of this Decree.

#### **Enforcement**

**Article 26** - The provisions of this Decree prepared on the basis of the Article 4 and 10 of Turkish Atomic Energy Authority Law no. 2690 and investigated by the State Council shall be enforced as of issue date.

**Execution**

**Article 27** - The provisions of the Decree shall be executed by the Council of Ministries.