



National Report on the measures taken  
By KUWAIT to fulfill the obligations  
Laid down in the:

**“CONVENTION ON NUCLEAR SAFETY”**

To the  
Eight review meeting of the contracting  
Parties in 2020

Radiation Protection Department (RPD) on behalf of the KUWAIT Government  
produced this report



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# Glossary

- MOH: Ministry of Health
- RPD: Radiation Protection Department
- MOU: Memorandum of Understanding
- NPP: Nuclear Power Plant
- IAEA: International Atomic Energy Agency
- BSS: Basic Safety Standards
- GSR: General Safety Requirements
- SSR: Specific Safety Requirements
- NORM: Naturally Occurring Radioactive Materials
- KOC: Kuwait oil Company

## Introduction

Taking account of the developments regarding the deployment of nuclear power in the region at large and in neighboring countries in particular, the Government of Kuwait attaches the highest importance to the Convention on Nuclear Safety (CNS) as an important mechanism supporting the international efforts towards fostering a global nuclear safety culture.

Kuwait has no operating nuclear power plants or research reactors in its territory and there are no plans at present to implement any nuclear power program in the foreseeable future. However, the country is very supportive of an effective implementation of the Convention focusing primarily its attention on all aspects related to the safety of nuclear installations and the environmental impact and health consequences of possible nuclear accidents that may occur from the operation of nuclear power plants in Kuwait's neighborhood.

The national radiation emergency plan does take into account nuclear accidents that might occur in any of the neighboring states. As such, emergency procedures are in place and national authorities trained to respond according to the plan in case an accident happens.

## Summary

Kuwait does not have a law or regulation specific only to nuclear materials or installations. However, the current regulatory system covers all aspects of radiation sources, which by nature will include all nuclear materials.

Any user of a radiation source must obtain a license before import, export, use, disposal or storage of such sources. Every licensee will have a license document, which includes an inventory of all the radiation sources. Any import or export of radiation sources also require a separate approval to perform that activity and there is a MOU between the regulatory body and Kuwait Customs Department regarding this subject. The conditions for obtaining these licenses are in the national law and ministerial decrees, which take into account the safety and security of these sources during use, transport, and disposal. These conditions are compatible with the IAEA general and specific safety standards. Kuwait does not have or operate a national waste facility. By regulatory requirements, all radiation sources must be sent back to the manufacturer or a waste facility outside the country.

### **Further notes:**

- It should be noted that the main national law 131/1977 is old and currently a new revision of the law is in process to update the regulatory structure to the latest international standards.
- Kuwait is installing nine Radiation Portal monitoring gates on five of the border (2 with Saudi border and 3 seaports) further tighten the security and deter any intentions of smuggling. In the near future, they will add other Radiation Portal monitors to the north border and the airport.

At the end of this document:

1. A list of all the international conventions Kuwait has signed and the laws that adhere to those conventions.
2. List of all Laws and regulations regard controlling radioactive Sources and protection from there hazards
3. National law 131/1977
4. Ministerial Decree 552 of 2003, On adopting the regulation of use of ionizing radiation, and procedures and precautions to prevent the risks of ionizing radiation
5. National Emergency plan

## CNS Requirements Articles 6-19

### Article 6: Existing Nuclear Installations

Each Contracting Party shall take the appropriate steps to ensure that the safety of nuclear installations existing at the time the Convention enters into force for that Contracting Party is reviewed as soon as possible. When necessary in the context of this Convention, the Contracting Party shall ensure that all reasonably practicable improvements are made as a matter of urgency to upgrade the safety of the nuclear installation. If such upgrading cannot be achieved, plans should be implemented to shut down the nuclear installation as soon as practically possible. The timing of the shut-down may take into account the whole energy context and possible alternatives as well as the social, environmental and economic impact.

Kuwait has not had in the past or has at the current time any kind of nuclear installation. As such, the requirement for article 6 is therefore considered accomplished.

- No national laws to address this article in specific.
- With regards to any radioactive material or ionizing radiation sources (including nuclear), they all fall under the jurisdiction of the main national law (Under Amiri law 131/1977 – article 2 and any or all ministerial decrees that follow from that law).

Presently there are no plans for Kuwait to embark on the implementation of a nuclear program. If there will be a plan to make a nuclear installation, then of course Kuwait will create a new specific nuclear law before embarking on such endeavor.

### Article 7: Legislative and Regulatory Framework

1. Each Contracting Party shall establish and maintain a legislative and regulatory framework to govern the safety of nuclear installations.
2. The legislative and regulatory framework shall provide for:
  - i. the establishment of applicable national safety requirements and regulations;
  - ii. a system of licensing with regard to nuclear installations and the prohibition of the operation of a nuclear installation without a licence;
  - iii. a system of regulatory inspection and assessment of nuclear installations to ascertain compliance with applicable regulations and the terms of licences;
  - iv. the enforcement of applicable regulations and of the terms of licences, including suspension, modification or revocation.

- 1- Kuwait does not have a law specific to nuclear installations. However, Kuwait has a regulatory system in place for regulating the import, export, use, and storage of ALL radiation sources (which includes nuclear materials) in place. The safety and security of such sources is governed by current laws which follow the IAEA BSS.

**Details:**

Under Amiri law no. 131/1977 - article 6, it is required that a radiation protection committee (Regulatory Body) be established and responsible for all matters pertaining to licensing, regulating, proposing, and implementing the regulations that deal with ionizing radiation. Furthermore, the committee can delegate some or all of its duties to a competent authority, which in the current implementation is Radiation Protection Department (RPD).

- 2- The legislative and regulatory framework:
  - i. Amiri law 131/1977 - articles 2,3 and Ministerial Decrees that apply these articles (552/2003, 225/2005, 553/2003, 399/2016)

In summary, these articles and decrees state that it is prohibited to possess, use, import, export, store, buy, or sell any radiation sources without acquiring a proper license for said activities.

ii. Amiri law 131/1977 – articles 2,3

Article 3 states that it is prohibited to possess, use, import, export, store, buy, or sell any radiation sources without acquiring a proper license for said activities.

iii. Amiri law 131/1977 - articles 7, 14

The competent authority (Radiation Protection Department) shall manage the licensing, regulatory monitoring, and inspections on radiation sources, storage locations, and workers who deal with or use radiation sources.

iv. Amiri law 131/1977 - article 4, 9, 10, 14

Regulatory body has the right to revoke a license if the licensee did not adhere to the licensing requirements, which include the safety requirements for both workers and the environment. They have the right to issue an official violation and the right of repossession of any or all radiation sources if the need arises under any violations.

**Notes:**

The implementation details for licensing requirements and distribution of responsibilities between the regulatory body, competent authority, and licensees are mentioned in detail in ministerial decrees.

In summary.

- All licensees shall have an official emergency plan in place and proper written procedures for use and storage of radiation sources as a requirement to hold a license. The regulatory body reviews these plans before issuance of licenses.
- Ministerial decree 552/2003
  - Chapter 2 deals with registration and licensing requirements
  - Chapter 3 deals with safety requirements.
  - Chapter 7 deals with security and accident preparedness requirements.

## Article 8: Regulatory Body

1. Each Contracting Party shall establish or designate a regulatory body entrusted with the implementation of the legislative and regulatory framework referred to in Article 7, and provided with adequate authority, competence and financial and human resources to fulfil its assigned responsibilities.
2. Each Contracting Party shall take the appropriate steps to ensure an effective separation between the functions of the regulatory body and those of any other body or organization concerned with the promotion or utilization of nuclear energy.

The regulatory body in Kuwait is comprised of two entities.

- Radiation Protection Committee (Members from different sectors and ministries in the country). The committee's responsibilities are outlined in law 131/1977 – article 6)
- Radiation Protection Department (RPD). Responsible for the implementation of national radiation law (131/1977) and all decrees that follow that law. According to law 131/1977 – article 7 and ministerial decree 598/2015.

## Article 9: Responsibility of the License Holder

Each Contracting Party shall ensure that prime responsibility for the safety of a nuclear installation rests with the holder of the relevant licence and shall take the appropriate steps to ensure that each such licence holder meets its responsibility.

The responsibility for the safety of any radiation source, (including nuclear), rests with the licensee. RPD periodically inspects safety and security procedures in place for licensees to check if they adhere to the requirements stated in regulations. The requirements are stated in Amiri law 131/1977 – articles 4,5. The implementation details are specified in chapter 3 of ministerial decree 552/2003 and are enforced by the regulatory body through regular and surprise inspections.

- Ministerial decree 552/2003 - chapter 3:
  - Article 15: Availability of safety and security requirements is a condition to the issuance and continued use of a license.
  - Articles 16-23: details the safety and security requirements that the licensee shall adhere to.

## Article 10: Priority to Safety

Each Contracting Party shall take the appropriate steps to ensure that all organizations engaged in activities directly related to nuclear installations shall establish policies that give due priority to nuclear safety.

The safety and security requirements are stated in article 4 of Amiri law 131/1977 and detailed in chapters 3 to 7 from ministerial decree 552/2003, which covers medical, industrial, and research radiation sources.

- Chapter 3 deals with general safety and security requirements.
- Chapter 4: deals with protection from occupational exposure.
- Chapter 5: deals with medical exposure.
- Chapter 6: deals with the protection of the public.
- Chapter 7: deals with security of radiation sources.

## Article 11: Financial and Human Resources

1. Each Contracting Party shall take the appropriate steps to ensure that adequate financial resources are available to support the safety of each nuclear installation throughout its life.
2. Each Contracting Party shall take the appropriate steps to ensure that sufficient numbers of qualified staff with appropriate education, training and retraining are available for all safety-related activities in or for each nuclear installation, throughout its life.

No additional financial requirements are required to implement this article. For other ionizing radiation practices and installations, the licensing requirements force this responsibility on the licensee.

1. According to decree 552/2003, every licensee shall ensure that adequate number of workers is available to perform their tasks without being subjected to unnecessary exposures.
2. By Amiri law 131/1977 – article 3, any worker handling or working with radiation sources is required to obtain a personal license or approval from RPD. The details of the required qualifications for radiation workers are specified in detail in ministerial decree 399/2016.

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## Article 12: Human Factors

Each Contracting Party shall take the appropriate steps to ensure that the capabilities and limitations of human performance are taken into account throughout the life of a nuclear installation.

Any radiation worker is required to obtain a personal license from the Radiation Protection Department in order to perform his duties involving radiation sources. One of the requirements for obtaining such license is proper training on radiation safety from an accredited training provider. Furthermore, surprise inspections help ensure that licensees adhere to the safety and security plans when working with radiation sources.

## Article 13: Quality Assurance

Each Contracting Party shall take the appropriate steps to ensure that quality assurance programs are established and implemented with a view to providing confidence that specified requirements for all activities important to nuclear safety are satisfied throughout the life of a nuclear installation.

All licensees shall have a quality assurance program in place as part of the licensing requirements. The quality assurance program should take into account how to minimize occupational exposure if possible. The details of this requirement are in ministerial decree 552/2003 chapter 5 article 45.

## Article 14: Assessment and Verification of Safety

Each Contracting Party shall take the appropriate steps to ensure that:

- i. comprehensive and systematic safety assessments are carried out before the construction and commissioning of a nuclear installation and throughout its life. Such assessments shall be well documented, subsequently updated in the light of operating experience and significant new safety information, and reviewed under the authority of the regulatory body;
- II. verification by analysis, surveillance, testing and inspection is carried out to ensure that the physical state and the operation of a nuclear installation continue to be in accordance with its design, applicable national safety requirements, and operational limits and conditions.

Not relevant to Kuwait. However, according to ministerial decree 552/2003, the regulatory body performs safety and security assessments on all new and existing facilities that work with ionizing radiation. Construction plans are assessed before providing a storage or workplace license. In addition, periodic inspections are performed on workplaces to make sure the safety and security procedures are still in place.

## Article 15: Radiation Protection

Each Contracting Party shall take the appropriate steps to ensure that in all operational states the radiation exposure to the workers and the public caused by a nuclear installation shall be kept as low as reasonably achievable and that no individual shall be exposed to radiation doses which exceed prescribed national dose limits.

According to Amiri law 131/1977 – article 4 and ministerial decree 552/2003 chapter 1 articles 4, 9, all licensees shall follow the ALARA principle in their daily work practices. Furthermore, article 10 of decree 552/2003 forces licensees to adhere to the national dose limits.

## Article 16: Emergency Preparedness

1. Each Contracting Party shall take the appropriate steps to ensure that there are on-site and off-site emergency plans that are routinely tested for nuclear installations and cover the activities to be carried out in the event of an emergency.  
For any new nuclear installation, such plans shall be prepared and tested before it commences operation above a low power level agreed by the regulatory body.
2. Each Contracting Party shall take the appropriate steps to ensure that, insofar as they are likely to be affected by a radiological emergency, its own population and the competent authorities of the States in the vicinity of the nuclear installation are provided with appropriate information for emergency planning and response.
3. Contracting Parties which do not have a nuclear installation on their territory, insofar as they are likely to be affected in the event of a radiological emergency at a nuclear installation in the vicinity, shall take the appropriate steps for the preparation and testing of emergency plans for their territory that cover the activities to be carried out in the event of such an emergency.

Kuwait has a national radiation emergency plan in place that covers a wide range of radiation emergencies except local facilities since they do not exist in the country. The laws governing the national emergency plan and its establishment are Amiri law 131/1977 – article 8, ministerial decree 552/2003 chapter 7, and civil defense law 21/1979.

The national emergency plan document includes the emergency plan itself and the procedures and responsibilities of each authority for preparedness and response. Different emergency categories are detailed in the plan which includes NPP accidents from neighboring countries and terrorist activities.

## Article 17: Siting

Each Contracting Party shall take the appropriate steps to ensure that appropriate procedures are established and implemented:

- I. for evaluating all relevant site-related factors likely to affect the safety of a nuclear installation for its projected lifetime;
- II. for evaluating the likely safety impact of a proposed nuclear installation on individuals, society and the environment;
- III. for re-evaluating as necessary all relevant factors referred to in sub-paragraphs (i) and (ii) so as to ensure the continued safety acceptability of the nuclear installation;
- IV. for consulting Contracting Parties in the vicinity of a proposed nuclear installation, insofar as they are likely to be affected by that installation and, upon request providing the necessary information to such Contracting Parties, in order to enable them to evaluate and make their own assessment of the likely safety impact on their own territory of the nuclear installation.

Not relevant to the country at the current time.

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## Article 18: Design and Construction

Each Contracting Party shall take the appropriate steps to ensure that:

- I. the design and construction of a nuclear installation provides for several reliable levels and methods of protection (defense in depth) against the release of radioactive materials, with a view to preventing the occurrence of accidents and to mitigating their radiological consequences should they occur;
- II. the technologies incorporated in the design and construction of a nuclear installation are proven by experience or qualified by testing or analysis;
- III. the design of a nuclear installation allows for reliable, stable and easily manageable operation, with specific consideration of human factors and the man-machine interface.

Not relevant to the country at the current time.

## Article 19: Design and Construction

Each Contracting Party shall take the appropriate steps to ensure that:

- I. the initial authorization to operate a nuclear installation is based upon an appropriate safety analysis and a commissioning programme demonstrating that the installation, as constructed, is consistent with design and safety requirements;
- II. operational limits and conditions derived from the safety analysis, tests and operational experience are defined and revised as necessary for identifying safe boundaries for operation;
- III. operation, maintenance, inspection and testing of a nuclear installation are conducted in accordance with approved procedures;
- IV. procedures are established for responding to anticipated operational occurrences and to accidents;
- V. necessary engineering and technical support in all safety-related fields is available throughout the lifetime of a nuclear installation;
- VI. incidents significant to safety are reported in a timely manner by the holder of the relevant license to the regulatory body;
- VII. programmes to collect and analyse operating experience are established, the results obtained and the conclusions drawn are acted upon and that existing mechanisms are used to share important experience with international bodies and with other operating organizations and regulatory bodies;
- VIII. the generation of radioactive waste resulting from the operation of a nuclear installation is kept to the minimum practicable for the process concerned, both in activity and in volume, and any necessary treatment and storage of spent fuel and waste directly related to the operation and on the same site as that of the nuclear installation take into consideration conditioning and disposal.

Not relevant to the country at the current time.

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## Appendix I: List of International agreements

1. Law No. 16 of 1965 approving the prohibition of nuclear weapons tests in the air, in outer space and under water
2. Law 51 of 1989 approving the Treaty on the Non-Proliferation of Nuclear Weapons
3. Law 15 of 2002 approving an agreement between the State of Kuwait and the International Atomic Energy Agency for the application of safeguards under the Treaty on the Non-Proliferation of Nuclear Weapons
4. Law No. 14 of 2003 approving the Additional Protocol to the Agreement between the State of Kuwait and the International Atomic Energy Agency for the Application of Safeguards under the Treaty on the Non-Proliferation of Nuclear Weapons
5. Memorandum on the approval of the draft agreement on Arab cooperation in the use of atomic energy for peaceful purposes
6. Law No. 7 of 2003 of 18 February 2003 approving the Comprehensive Nuclear-Test-Ban Treaty Agreement.
7. Law No. 8 of 2003 dated 18/2/2003 approving Kuwait's accession to the Convention.
8. Law No. 9 of 2003 dated 18/2/2003 approving Kuwait's accession to the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency
9. Law No. 9 of 2006 approving Kuwait's accession to the Nuclear Safety Convention
10. Law 34 of 2013 approving the Government of the State of Kuwait and the International Atomic Energy Agency amending the Additional Protocol annexed to the Agreement for the Application of Safeguards under the Treaty on the Non-Proliferation of Nuclear Weapons
11. Law No. 67 of 2013 approving a Cooperation Agreement between the Government of the State of Kuwait and the Government of the French Republic for the Peaceful Uses of Nuclear Energy and its Annex
12. Law No. 133 of 18 February 2003, approving the agreement between the Government of the State of Kuwait and the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization on carrying out activities related to the international monitoring agreement of the Comprehensive Nuclear-Test-Ban Treaty, including subsequent activities. Treaty on 24/9/1996
13. Convention on the Physical Protection of Nuclear Material and Nuclear Facilities

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## Appendix II: List of Laws and regulations

### LAWs

1. Amiri Decree No. 131 of 1977 The Control of the Use of Ionizing Radiation and Protection from the Hazards Thereof (is the basic law that gives authority to the Ministry of Health, which in turn authorized the Radiation Protection Committee to issue licenses and the Radiation Protection Department to perform the related technical duties).
2. Amiri Decree 21/1979 assigned the Civil Defense (Ministry of Interior) as the legal responsible authority during all kinds of emergency in Kuwait, including radiological emergencies.

### Ministry of Health decrees

1. Ministerial Decree 552/2003 - Organization of the use of ionizing radiation procedures and safety aspects from the hazards thereof
2. Ministerial Decree 553/2003 - Regulations, conditions and safety procedures to be followed for radioactive waste disposal and storage
3. Ministerial Decree 225/2005 - The Transportation of Radioactive Materials
4. Ministerial Decree 194/2011 regarding limitations of concentration of radioactive isotopes in foodstuff, drinking water and animals foods during emergency.
5. Ministerial Decree 144/2014 on the security of radioactive sources
6. Ministerial Decree No 598/2003 The Reorganization of the Department of Radiation Protection And set its Terms of Reference
7. Ministerial Decree 399/2016 Regarding qualification and experience needed by the licensees in the field of Radiation
8. Ministerial Decree 305/2015 Regarding Restructure the committee on Radiation Committee
9. Ministerial Decree 54/2017 Regarding The power of supervision and inspection and the prescription of judicial officers to Radiation Protection Department worker
10. Ministerial Decree 39/2019 Regarding guides level for the patient dose of x ray equipment

### Ministry of Interior's Decrees

1. Pursuant to the Council of Ministers Decision 897/1997, the Emergency Committee of the Civil Defense is the highest authority during emergency and has the power to activate the emergency response plan to any accident on the nationwide level. The Emergency Committee of the Civil Defense assigned the Radiation Emergency Committee to direct the response during radiation related emergencies.
2. Ministry of Interior's Decree 235/2013 updates and expands the membership of the Radiation Emergency Committee to include sixteen organizations
3. Ministry of Interior's Decree 1094/2014 establishes the first responders team
4. National Emergency Plan To respond to nuclear and radiological accidents 2017
5. General procedures For assessment and response in radiological and nuclear emergencies 2017

### Memorandum of Understanding

1. between the regulatory body and Kuwait Customs Department
2. between the regulatory body and KOC mutually cooperate towards the execution and implementation of NORM, Ionizing and Non-Ionizing Radiation Management from Oil and Gas Production in KOC, to ensure that workforce and common public are not exposed to above permissible radiation and to prevent environment pollution with radioactive materials

## Appendix III DECREE LAW 131 OF 1977

### ON THE CONTROL OF THE USE OF IONIZING RADIATION AND PROTECTION FROM THE HAZARDS THEREOF

We, Sabah al-Salem al-Sabah, Amir of Kuwait,

Taking into account the State order issued on 29 August 1976 (4 Ramadan 1396) Relating to revision of the constitution.

On the basis of the proposal submitted by the Minister of Public Health and

With the agreement of the Council of Ministers

Have issued the following law:

#### **Article 1 Definitions**

For the purposes of this Law and of executive decrees issued under it, Radiation work means any work requiring the use of radioactive substances or radiation services or other devices intended for production of ionizing radiation and also any technical work in which sources of nuclear energy are used.

Ionizing radiation means electromagnetic or corpuscular radiation, which causes ionization in its passage through a substance.

Radiation devices mean the devices used for the production of X-rays or gamma rays or for acceleration or atomic particles or for generation of any radiation having a similar biological effect.

Radioactive substance means any substance simultaneously emitting ionizing radiation exceeding two-thousandths of a micro-curie program of the substance or equivalent thereof.

Competent authority means the authority designated by the Minister of Public Health for the purpose of exercising authority based on this law.

**Article 2** No radiation device or radioactive substance may be imported, exported, manufactured, possessed, bought, sold, transported or disposed of without a license obtained for the purpose from the Ministry of Public Health. The licensing conditions and procedures and the period of validity of the license shall be laid by an executive decree of the Minister of Public Health.

**Article 3** Ionizing radiation may not be used or handed in any manner without a license obtained for the purpose from the Ministry of Public Health.

The licensing conditions and procedures and the period of validity of the license shall be laid down by an executive decree of the Minister of Health.

**Article 4** The licensee may not go beyond the limits of the license granted to him nor make any modifications to the licensed devices or substances without the Ministry's approval. He shall take the necessary precautionary measures to ensure the safety of public and radiation workers and to protect the environment, in which matter he and those carrying out work involving these devices and substances shall strictly comply with the requirements to be laid down by an executive decree of the Minister of Public Health

**Article 5** The premises where radiation devices or radioactive substances are used or kept must satisfy the conditions to be specified by an executive decree of the Minister of Public Health, and the licensee may not shift the devices or substances from the licensed premises to other premises nor, make any modifications to the premises or the buildings where these devices or substances are located without obtaining prior approval from the Commission referred to in the next section.

**Article 6** A commission to be called the Radiation Protection Commission shall be established in the Ministry of Public Health. It shall be constituted by an executive decree of the Minister of Public Health and shall have the following functions:

1. To consider matters relating to radiation protection and to formulate the policy for its implementation.
2. To approve the licenses stipulated under this law and to cancel, modify and suspend those licenses.

3. To draft the regulations and decrees referred to in Sections 2,3,4 and 11 of this law.
4. To make recommendations and proposals concerning legislation relating to radiation protection.

The Commission may delegate all or part of these functions to the competent Authority.

**Article 7** The Competent Authority shall be responsible for matters relating to the licensing, control and inspection of radiation devices and radioactive substances and the premises where they are located and of persons using them in accordance with the provision of this Law.

**Article 8** Any one licensed to use or keep radiation devices or radioactive substances must notify the Competent Authority:

1. In case of loss of any radioactive substance or radiation device, within 24 hours of the loss;
2. In case of any accident which may result in the exposure of any person to an ionizing radiation dose above the permissible limit stipulated in the requirements to be laid down by an executive decree of the Minister of Public Health, within 24 hours of the accident with a detailed report on the accident and its causes.

The competent Authority shall co-operate with the authorities concerned in taking the necessary measures to prevent the hazards of accidents and emergency situations which might lead to radiation exposure and to avoid their repetition. The licenses shall implement the measures decided upon by the Competent Authority in this matter.

**Article 9** The Radiation Protection Commission may cancel the license referred to in Sections 2 and 3 of this law in the following cases:

1. If it is found that the licenses submitted incorrect statements or resorted to illegal means as a result of which the license was issued.
2. If the licensee has violated on the conditions or requirements stipulated in this Law or in executive decrees issued under it.
3. If the licensee has violated the conditions stipulated in the license.
4. If the licensee dies or is affected by a disease rendering him incapable of work with ionizing radiation.
5. If it is found that there are exposure hazards for the licensee or his employees or third parties.
6. If public interest so demands.

The Commission may with immediate effect suspend a license for a period specified by it. It may also grant the licensee time to comply with the stipulated conditions and requirements or to take the appropriate measures before canceling his license.

The Commission's decision about cancellation or suspension of a license shall be implemented by administrative action and the licensee may appeal to the Minister of Health against the Commission's decision on cancellation or suspension within a month of being notified thereof. The Minister shall give his decision on the appeal after obtaining the opinion of the Radiation Protection Commission, and his decision in this matter shall be final.

**Article 10** In case of import, possession, purchase or sale of radiation devices or radioactive substances without a license, the Competent Authority shall sequester by administrative action those devices or substances and deposit them in the stores of the Ministry of Public Health or in any location that it considers suitable, applying the appropriate protection measures at the expense of the offender, and referring him to the competent authorities in accordance with the criminal procedure code.

If the licensee has not taken the necessary precautionary measures to ensure radiation protection, the above Authority may also, if needed, take those measures at the expense of the licensee.

**Article 11** The holder of a license to use or keep radiation devices or radioactive substances shall not allow any person to work with ionizing radiation or to perform any other work which may expose him to the hazards of ionizing radiation except after medical examination and special conditions and procedures to be laid down by an executive decree of the Minister of Public Health.

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Medical examinations shall be carried out periodically at intervals to be specified by the Competent Authority.

**Article 12** No person under the age of 18 years shall be employed in any work in which he may be exposed to ionizing radiation.

**Article 13** If it is found that there are hazards to the health of a worker during the performance of his work or because of his work at a place where he may be exposed during his presence, the licensee shall not allow him to continue his work and he may not resume work in the radiation area without the approval of the Competent Authority.

**Article 14** Employees delegated by the Minister shall undertake the supervision and inspection work according to the provisions of this law. The employees have the right to enter establishments and locations where radiation instruments and radioactive materials, records, or documents, are present. They also have the right to review records, and take needed measures to verify the implementation of the provision of this law and its executive decisions. Employees have the right to file reports pertaining to crimes in violation of the provisions of this law, and refer them to the authorities. They may also ask for the aid of the police according to the situation.

**Article 15** Persons using, working in the field of or in position of radiation instruments or radioactive materials at the time the law enters into effect, must apply to the Committee on Radiation Protection to acquire licenses stipulated in article 2, and 3 within 90 days of the date of the law in force. In cases where an application is not filed or filed and rejected within this period, the possession of these instruments or materials is considered without a license, and the applicable provisions shall be implemented.

**Article 16** The Minister of Public Health shall issue a decision specifying the fixed fees on licenses, and on procedures stipulated in this law.

**Article 17** Without violation of tougher punishment stipulated by another law, violation of the provisions of articles 2,3,4, and 8 of this law is punishable by an imprisonment period not exceeding 3 years and a fine of not less than 100KD, and not exceeding 225 KD or by one of these two sentences.

The same sentence is applicable to any one preventing specialized employees from performing their duties stipulated in this law.

Violation of articles 5,11,12, and 13 of this law, and its executive decisions is punishable by an imprisonment period of 3 months, and a fine not exceeding 200KD or one of these two sentences.

**Article 18** The Minister of Public Health shall issue the executive decisions of this law.

**Article 19** The Ministers in their respective areas of competence shall implement this law, and it shall enter into force on the date of its publication in the official Gazette.

**Sabah al-Salem al-Sabah**  
**Amir of Kuwait**

**Issued at Saif Palace on 12 November 1977.**

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## Appendix IV Ministerial Decree 552 of 2003.

On adopting the regulation of use of ionizing radiation, and procedures and precautions to prevent the risks of ionizing radiation.

### Minister of Health

- After perusal of Act No. 131 of 1977 on the use of ionizing radiation and the prevention of risks.
- From the Ministry's keenness to maintain the health of the community and public health risk of ionizing radiation exposure and prevention of risks to man and the environment
- Taking preventive actions and scientific and professional internationally recognized in the field of radiation protection to ensure safety from risk.
- Based on the approval of the Committee on radiation protection Committee No. 3/2003, dated 10/5/2003.
- Depending on the requirements of the employment administration and the public interest.

- Decided -

**Article 1:** the regulation of the use of ionizing radiation and the safe procedures and precautions for the prevention of risks associated with this resolution and the accompanying seven annexes to this regulation are an integral part thereof and apply what applies to these regulations

**Article 2:** all licensees in the areas of the use of ionizing radiation the implementation of this regulation and on the management of radiation protection in the Ministry to take the necessary measures to verify the application of the provisions of this regulation

**Article 3:** repeal ministerial decrees No 5/1989, (304)/1993 and every provision contrary to the provisions of this regulation

**Article 4:** publish this regulation and annexes accompanying them in the Official Gazette and six months after the date of publication.

Minister of health

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**Organize the use of ionizing radiation, procedures  
and precautions to prevent the risks  
Approved by Ministerial decision No. (552) of 2003**

### **Introduction**

Human age depends on ionizing radiation in various walks of life, industrial, scientific, medical, and military and others, and these rays of industrial progress and technology era, despite some adverse risks.

The need for ionizing radiation to meet the needs of human and society, States had to monitor the different uses of these radiation procedures and to take the necessary steps for prevention of radiation risks arising from radioactive sources used.

As expanded areas of need for ionizing radiation because of scientific advances in various spheres of life, the increased interest of the international community in the prevention of the risk of radiation on man and society, international and regional organizations responsible for monitoring radioactive sources In the world of use, circulation, storage and disposal, and so many ways to control the movements of such sources and ways to prevent risks.

In recognition of the State of Kuwait for the use of ionizing radiation in accordance with the procedures and preventive systems enacted special legislation using these rays and prevention and by Decree-Law No. 131 of 1977, which gave the Health Ministry the task of preventing the risk of ionizing radiation, And control of radioactive sources issued licenses and use and place of use and disposal pursuant to the provisions of this Act the radiation protection Committee was established and is responsible for the development of regulations and legislation on prevention , The Ministry also established under this law the Department of radiation protection shall implement the provisions of this law as the competent authority referred to there in.

Since the promulgation of Act No. 131 of 1977 and after six years in which won protection from ionizing radiation in use and interest for foreign countries and organizations to protect against the risks, the State of Kuwait has coincided with this development and realized their duty towards the prevention of these rays.

Based on close cooperation with the International Atomic Energy Agency and other organizations concerned Ministry decided the preventive regulations include preventive methods for using and storing radioactive sources, methods of disposal and security inspection on those sources, Thereby ensuring adequate protection against the risk of radiation exposure, these included the systems, procedures and safe prevention agreed scientifically and professionally and internationally accredited according to international basic safety standards for protection against ionizing radiation and for the safety of radiation sources, safety series No. 115, issued by the International Atomic Energy Agency.

The Ministry has started preparing these regulations, regulation of the use of ionizing radiation and the prevention of risks and issued to the application and the actual implementation.

This regulation has addressed all the necessary prevention methods in terms of public and prevention methods of prevention in occupational and medical areas and incidents as well as the necessary licenses and regulating the procedures provided for in this regulation complements the law supplements annexed seven standards and secure borders, prevention of radiation hazard.

The licensee is responsible for the application of the provisions of this regulation and the legal liability in case of breach of any of the provisions of the protection provided for in that regulation With the need to take care and control and precision in the application. The Ministry will issue the preventive regulations respectively, starting with the employment regulation, followed by the list of radioactive waste storage and disposal, and then list the inspection and regulation of the transport of radioactive materials across the country.

In addition, include the regulation of the use of ionizing radiation and preventing risks to the chapters and appendixes:-

- Chapter I: General provisions.
- Chapter II: licensing and registration.
- Chapter III: requirements for prevention and safety.
- Chapter IV: prevention of occupational exposures.
- Chapter V: medical exposures.
- Chapter VI: Protection of the public.
- Chapter VII: security sources.

- Appendix I: terms and definitions.
- Appendix II: exemptions.
- Appendix III: indicative limits and levels.
- Appendix IV: General obligations of reporting.
- Appendix V: radiation laboratories open specifications.
- Appendix VI: radioactive concentrations of nutrients.
- Appendix VII: levels of intervention.

## Chapter I

### 1- General provisions

article 1 the provisions of this regulation to all activities, devices and radioactive materials and persons who are or have been subjected to ionizing radiation, and in particular the following:

1. The production of radioactive sources and radioactive ores mining and processing and the use of ionizing radiation and radioactive materials in medical, industrial and agricultural training, scientific research and other.
2. Activities and practices related to the presence of natural radiation sources leads to the exposure of workers and others to increase the radiation limit set by the Ministry of health.
3. Activities and practices that lead to a radiological risk arising from:
  - Occupational exposures.
  - General public.
  - Medical exposures.
  - Chronic exposures.
  - Emergency exposures.
4. Intervention in the event of a radiological emergency and intervention in case of chronic exposure.
5. Any other activities or practices established by the Ministry of health.
6. Authorized persons in their activities or practices have been subjected to ionizing radiation.

article 2 The provisions of this Regulation shall not apply to the following cases:

1. Exposures resulting from a match (40) irradiated natural body.
2. Cosmic radiation on the Earth's surface.
3. Radiation from radioactive materials in the raw materials of natural focus.
4. Radioactive substances radioactive concentration of less than 0.002 micro curie (74 Becquerel/gram)
5. Practices and resources defined in annex II to this regulation.
6. Any other radioactive sources or radioactive materials or devices added by the Ministry of health.

### 2- Definitions of terms

Article 3: application of the provisions of this Regulation shall mean the terms and definitions contained in the first schedule annexed to this regulation corresponding meanings.

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### **3-Principles of prevention**

Article 4: prohibits the use of radioactive sources and practices which may lead to exposure to ionizing radiation, unless the Health Ministry decides that it will result in these sources and practices beneficial for people exposed to radiation by or for the society to compensate the damage caused by radiation, taking into account social and economic factors and other relevant factors.

Article 5: with the exception of medical practices prohibited practices that lead to increased radiation exposure through the deliberate addition of radioactive substances or commodities or products associated with these practices, for example:

1. Practices falling commodities or products for human use by mouth, inhalation or skin, or use spot-like practices within the food or beverage or cosmetics.
2. Practices that lead to poor use of radiation or radioactive material in certain commodities and products such as toys, ornaments, personal grooming tools.
3. Any other practice specified by the Ministry of health.

Article (6): prohibits the following practices:

1. Introduction or introduction or implementation or start or stop or exit any exercise associated directly or indirectly with the radiant source only in accordance with the requirements and conditions laid down in this regulation, and after obtaining the necessary permission from the Ministry of health.
2. Design, manufacture, construction, Assembly, possession, possession, import, export, purchase, rental, sale or delivery or receipt, lend or use, operation, maintenance, modification or transfer or discharge or disposal of radioactive sources of requirements and the terms and conditions contained in this regulation, and after obtaining a license from the Ministry of health.
3. Choose a location for practice or work related directly or indirectly to the radiant, or operation of the website or terminate or stop running only in accordance with the requirements and conditions laid down in this regulation, and after obtaining the necessary permission from the Ministry of health.
4. Transport of radioactive material by any means of transport within the country in accordance with the rules of the safe transport of radioactive materials lay down by the Ministry of health.

Article (7): the owner of the facility, the licensee informed the Ministry of health:

- 1- Start date on the initial tests before the operation of the business.
- 2- Start the operation of the business or the practice of using radioactive sources.
- 3- Renewal license whenever any change or modification in the conditions of work.
- 4- Stop working.

Article (8): every natural or legal person wishes to exercise or possess radioactive source radiant fall within the scope of any exercise set out in the regulations, notify the Ministry of health before a practice or possession according to the form provided for this purpose. If the practice falls within the scope of practice contained in the list of reporting practices and set out in annex IV to this regulation, is not permitted without the approval of the Ministry of health.

### **4 optimization**

Article (9): with the exception of medical exposures (therapeutic) are examples of prevention and security in order to minimize the possible and reasonable dose, taking into account economic and social factors.

### **5 - Radiation dose limits**

Article (10): determines the radiation exposure of persons not exceeding the total effective dose (Collective Effective Dose) or equivalent dose to organs or tissues (Committed Effective Dose) relevant outcome possible combined exposures of authorized practices any relevant dose limits set out in annex III to this regulation.

Also may not exceed the prescribed dose only in cases specified by the Ministry of health. The dose limits do not apply to medical exposures as a result of the practice.

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## Chapter II

### Licensing and registration

Article (11): each of the required licenses to allow any practice of radiation practices specified in this regulation must apply to the Ministry of health with the documentation and the following documents:

1. All data and information necessary to confirm its commitment to the rules relating to radiation protection.
2. Documents confirming compliance with the provisions of this regulation in particular help and guidance to ensure the provision of preventive measures and requirements for practice and the source user.
3. Assessment of the nature and extent of potential radiation exposures resulting from the practices in the source of the practice, together with the means of prevention to protect workers and the general public.
4. If the expected leak of radioactive substances into the environment, you should specify the procedures and the means adopted to protect the environment from radiation.
5. Safe procedures for radiation protection of emergency workers and others.
6. The receipt that identifies the payment of the prescribed fees.
7. Any documents or other documents required by the Ministry of health as it may deem necessary for radiation protection.

Article (12): for its use of radioactive sources requires a license of the Ministry of health in accordance with the conditions established by the Ministry of health.

Article 13: the licensee is prohibited from possession of the final disposal of radioactive sources, transferred or loaned to a third party only after approval from the Ministry of health.

Article (14): cancels the license issued in accordance with the provisions of law No. 131 of 1977 and the provisions of this regulation in the following cases:

1. If you do not adhere to authorized any of the conditions set out in this regulation.
2. If the licensee submitted incorrect data or resorted to illegal means resulting in the issuance of the license.
3. If a licensee violates the conditions or obligations laid down in this regulation.
4. If the licensee contravenes the conditions stipulated in the license
5. The death of the licensee or his illness makes him unable to work on ionizing radiation.
6. If a licensee or has or as a result of exposure to ionizing radiation.
7. If the public interest.

The decision of cancellation of the radiation protection Committee in accordance with article 9 of law No. 131 of 1977, the Commission may suspend with immediate effect the license for the duration that you specify-and may give notice to the licensee to implement the conditions and obligations, or take appropriate action before the cancellation, the Commission's decision to cancel or suspend the license of the administrative way.

## Chapter III

### Protection and safety

(Human factors prevention system of conservation measures-engineering accident prevention)

Article (15): the provision of prevention and safety requirements provided for in this section is a prerequisite for the validity of the license, and not a reason to cancel it or stop it.

Article (16): the licensee to develop a preventive system commensurate with the scale of the job and the type of practice as a licensee, which guarantees protection from radiation exposure, and this should include preventive system set of instructions and guidelines for the protection and safety of radiation and include, in particular:

1. Follow the steps of the decision-making for prevention and safety.

2. Rapid identification and treatment of problems affecting the prevention and safety as consistent with its importance.
3. The duties and responsibilities of each Member with respect to prevention and safety in a clear and easy, and training and rehabilitation in line with him.
4. Put the steps and procedures and organizational arrangements necessary to facilitate the connection, speed, speed up the transfer of information on prevention and security at all levels in the body that owns the licensee.

And the preventive system prepared by the licensee only after approval from the Ministry of health.

Article (17): the licensee must take into account human factors as follows:

- 1- Follow the principles appropriate to the capacity of the equipment design and operational systems to minimize human errors may lead to radioactive accidents or cases of non compliance with the instructions and steps for prevention.
- 2- Providing adequate equipment and safety systems and procedures that will minimize as far as possible from human errors, and provide the means to detect, and to facilitate the necessary mechanism for rapid intervention in the event of an accident

Article (18): on the licensee to licensee by radioactive sources safely to prevent use or move without authorization or of theft or damage, in accordance with the following:

- 1- Ensure ongoing supervision of sources, without prejudice to the requirements as specified in the license and must be reported immediately to the Ministry of health information within 24 hours to stop radioactive source control or it is lost or stolen or lost.
- 2- Not to convert any radiant source to another or others before to ensure that the assignee on the necessary license from the Ministry of health.
- 3- An inventory of radioactive sources at intervals as specified in the license to make sure its presence in its premises and locked.

Article 19: the licensee must apply a multiphase system measures the radiation sources the licensee to achieve prevention and security risks, commensurate with the size of possible and potential exposures, so you can eliminate any deficiencies in security procedures at various stages subsequent to:

- 1- Prevention of accidents may cause radiation exposure.
- 2- Reduce the adverse effects of any radiological accidents.
- 3- Return to their safe after the accident.

Article (20): should the licensee choose to radioactive sources places falling within the scope of practice, and the design and construction of assembled and prepared for operation, maintenance and decommissioning once and for all in accordance with sound engineering standards and conditions are safe:

1. Commitment to help engineering and technical, normative and other documents and requirements and precautions safe with administrative and regulatory requirements documented ensures prevention and safety requirements of radiation risk throughout the life of the authorized radioactive sources.
2. Provide adequate border security when the design and construction of radioactive sources and practices that ensures safe performance in normal operating conditions.
3. The obligation to respect the quality and inspection methods.
4. Work on the prevention of radiological accidents and mitigation of their effects and reduce any radiation exposures.
5. Obligation to keep abreast of scientific and technical developments and relevant research in the area of prevention and security of radiological risks and effectiveness.
6. Take advantage of the experiences in the prevention of radiation hazard.

Article (21): licensee working to protect and shield them from radiation hazard, taking all measures for the prevention of radiological accidents, the following:

1. Effective monitoring and careful of the means used to prevent exposure to radiation.

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2. Providing the necessary preventive means to control established and common warning signal to ensure that the dose limits.
  3. The obligation to pursue registration in the records and documents provided for in this regulation.
  4. Define the boundaries of areas prone or likely exposure to radiation.
  5. Develop and abide by the following instructions and apply them properly making sure preventive efficacy.
    - A. Development of preventive protection and control instructions.
    - B. Set up instructions for maintenance and repair, inspection and operation.
    - C. Setting instructions for intervention in cases of accidents.
  6. Take measures concerning the carrying and use of means of protection, prevention and individual dose measurement with an explanation of use clearly and personally.
  7. Periodic inspection and calibration to make sure power to all devices and radiation survey used to protect individuals and the environment from ionizing radiation.
  8. Radiation protection official label and identified and adopted by the Ministry of health
- Article (22): the licensed radioactive sources inform the user that:
1. Inform the user risks of exposure to radiation source that uses it.
  2. Precautions needed to protect him and others of the radiation hazarded Ministry of health.
  3. Best ways to use that provide security guarantees.
  4. Safeguards provided by existing measures and instruments need to assessed medicals.
  5. That its commitment to safety instructions and radiation protection.
- Article (23): you must have the circulation and use of radioactive sources under the supervision of competent people technically and professionally and licensed by the Ministry of health in accordance with the prescribed conditions.

#### **Chapter IV**

Prevention of occupational exposures

(Generic preventive measures preventive dose limits for pregnant women classification places personal protection)

Article (24): the licensee of any of the sources of ionizing radiation that protects all employees whose work involves or may involve occupational exposure in radiation limits restraint approved for these workers.

Article (25) : The licensee before appointing anyone to work with licensed radioactive, expropriation being asked within the grounds of appointment record his previous occupational exposure, and other information for the purpose of obtaining a health history and provide ways and means of prevention and radiation safety during work.

Article (26): the radiological workers authorized the obligation as following:

1. Follow the rules, procedures and systems for the protection and security of radiological hazards, the employer from the Ministry of health.
2. The use of monitoring devices and equipment and proper use of protective clothing.
3. To refrain from any action incompatible with the rules, regulations and procedures radiation protection laid down in this regulation.

Article (27): the user to report to the employer or responsible for radiation protection in the works for anything that adversely affects the commitment to prevention and safety requirements of radiation risk.

Article (28): not be allowed under the age of eighteen years working in controlled areas of radiation only for training purposes and only under the direct supervision of the licensee or responsible for prevention.

Article (29): for every pregnant woman working in a place exposed to ionizing radiation to report them once their flag to the person responsible for the prevention or the licensee and who must simply inform the reorganization of its work if necessary to ensure that the fetus the same overall level of protection for the public.

And is not reporting the pregnancy justified exclusion of pregnant women from working.

Article (30): the licensee may not exceed occupational exposure to any worker have limits the dose prescribed in annex III to this regulation.

Article (31): the Ministry of health at the request of the licensee a temporary change in the procedures for radiation dose limits set out in annex III to this regulation, if the justification for it.

Article (32): a licensee of a request to change the normal radiation dose limits temporarily attached:

- 1- Description of special circumstances justifying the change request.
- 2- Evaluation of the prevention measures at the required level.
- 3- The benefit to take possible measures to improve the prevention of radiation dose limits to accommodate referred to in the preceding article.
- 4- The monitoring and recording of doses.

Article (33): required to allow temporary change of requirements of radiation dose limits:

1. To be change according to the dose limits in the specific circumstances set out in article 31 of this regulation.
2. Be the change for a period of time determined by the Ministry of health.
3. The change to annual audit.
4. The change are for specific work areas.

and may not renew the temporary change only by a new request sensitive article (31 and 32) of this regulation.

Article (34): classified as a preventive to premises:

1. Controlled Places: are places which must be identified and required precautions and specific preventive measures and means to secure arrangements of the radiation hazard.
2. Supervised Places: are non-specific and do not need to take preventive measures, security and occupational radiation exposure conditions, however it is under review.

Article 35 The controlled places

1. Must be controlled areas any area required or may require specific preventive measures or arrangements for security.
2. In areas under the control of the licensee should be:
  - briefing area means fixed, either in areas in which the source is used intermittently or transferring resources from one place to another, you must select the appropriate control area and enclosed by barriers and determine the times and periods of exposure through appropriate means.
  - Install warning signs and any other appropriate instructions at the point of approaching potential region and in different locations suitable for entering or approaching them.
  - Take all professional and safety protection measures including local rules and methods suited to the controlled area.
  - Control methods to approach the region controlled by administrative means, such as permits, work and install barriers, doors and locks, and severely control must be commensurate with the nature of the potential risk, particularly the provision of clothing and equipment when necessary.
  - Identify needs and requirements concerning the use of radioactive sources is closed and contained in annex v to this regulation.

Article (36): areas under supervision

1. Identify the licensed area under the supervision of the conditions of occupational exposure and remain under review.
2. The licensee shall, taking into account the nature and extent of radiological risks in the supervised area:

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- A. The delimitation of areas under supervision by using appropriate means.
  - B. Tagging supported when the appropriate entry points leading to them.

Licensee must be a periodic review of the circumstances in order to determine what was necessary from the prevention measures or security arrangements, including areas under the control and supervision.

Article (37): the licensee the following local rules of supervision:

1. Label responsible for radiation protection at the request of the Ministry of health.
2. Consultation with workers where appropriate the necessary domestic rules and procedures in writing and in a language understood by the workers and the general public, and to communicate the rules and procedures to apply to employees and other persons who may be affected.
3. The licensee must do as the following:
4. Provide all staff with adequate information about health risks from occupational exposure whether exposed or latent and provide them with adequate instructions and training in the areas of prevention and safety.
5. Educate female workers who need the nature of their work into areas controlled or supervised about fetal risks as a result of the exposure of pregnant women about the importance of working to inform the employer as soon as the doubts the existence of pregnancy and the risk of transmission of the radioactive substances through breast milk.
6. The licensee shall provide information, instruction and training as appropriate for the relevant contingency plan.
7. The licensee shall keep records of the training received by each worker.

Article (38): licensee must do the following to provide personal protection:

1. 1.To ensure that workers with personal protection equipment suitable and sufficient, including as appropriate protective clothing, equipment for monitoring user defined properties of prevention, coveralls, gloves and protective body part.
2. Reduce to a minimum the need to rely on personal protective equipment for prevention and safety during normal operations by providing well-designed controls and proper working conditions.

Article (39): to evaluate occupational exposure the licensee must do the following:

1. Make arrangements to evaluate occupational exposure to workers, and achieved appropriate arrangements with qualified and competent dosimeter under adequate quality control program.
2. for any worker who usually works in a controlled area, the monitoring of an individual.
3. For an employee usually works in an area under the supervision of, the assessment may be based on the results of the monitoring of the workplace or to monitor individuals.
4. Must be commensurate with the nature of the radiation monitoring & repetition with the assessment of exposure levels and potential changes to these values, as should be the measurements and quality assurance and calibration of radiation monitoring equipment used periodically.
5. For workers who may be exposed to internal contamination must be designated by the licensee, and to arrange for them to achieve the appropriate monitoring of effectiveness and the right dose exposure evaluation procedure.

Article (40): the licensee must prepare a program of health surveillance of employees is based on the General principles of occupational health and fitness calendar functions include personnel for their tasks both on appointment or during service periodically or as needed.

Article (41): licensee must prepare a program for the monitoring and implementation of the work and maintain its continuity; this program must achieve the following:

1. Evaluation of exposures in areas under the control and subject to supervision.
2. Evaluation of the radiological conditions in the working environment.

3. Review the classification of work areas..3
4. Keep records of the results of the monitoring of the workplace.
5. Should the nature of the monitoring program on radiological conditions and the contaminant levels and the expected variables taking into account the following factors:
  - A. Type of measurements such as the radiation dose rate, surface contamination and the concentration of radioactive substances in the air.
  - B. Methods of measurements used and the name of the person.
  - C. The reference levels approved by the Ministry of health and actions to take when it is override.
  - D. Evaluation procedure of measurements and review monitoring results.

Article (42): records of exposure of workers:

1. The licensee shall maintain records of each worker is subject to the evaluation of radiation doses, include records of workers information on doses and exposures and quantities that enter the body.
2. The licensee arrangements to enable workers to access information contained in the records of their exposure.
3. The doctor overseeing health surveillance to record the working dosage forms and the possibility of the Ministry of health.
4. 4.when working to another facility providing asked about the new version of the registry for this factor by the former operator working are entitled to provide the licensee with a copy of the record low doses when moving to another employer.
5. the licensee at the end of any period of functional sending records to the competent authority that you keep during the careers of working and after until the age of at least seventy-fifth, and a minimum period of thirty years after the work was professional.

## Chapter V

### Medical exposures

(General requirements for the adjust exposure control of diagnostic nuclear medicine therapeutic exposure control medical exposure incidents)

Article (43) General requirements:

The licensee must implement the following requirements for radiation protection of patients and staff on devices and radioactive sources:

1. It is prohibited to conduct a medical examination of the patient for diagnostic or therapeutic purposes only at the request of a physician licensed to practice medicine.
2. To entrust the treating physicians and practitioners with the task and the commitment of the major warranty protection and safety for patients when describing the patient's medical and exposure during the vote.
3. Provision of medical workers and medical professionals to assist licensed to practice the profession as needed to be qualified and trained to carry out their duties properly in diagnostic procedures or treatment prescribed by your physician.
4. For use in therapeutic areas including external irradiation therapy, internal radiation therapy are requirements for calibration and dosimeters and quality assurance assessments by qualified specialist in the field of the physics of radiation therapy or under his supervision.
5. Restrict the exposure of individuals while providing assistance voluntarily and not under their care or support their patients or recreation, as specified in annex III to this regulation.
6. Training of personnel in accordance with procedures approved by the Ministry of health.

Article (44): the justification of medical exposures:

1. Medical exposure must be justified by comparing the diagnostic or therapeutic benefits of radiation damage, which may have, taking into account the benefits and risks of available alternative techniques that do not involve radiation exposure.

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2. The following exposures are unjustified:
    - A. Radiological examination is for professional or legal purposes or purposes of health insurance without having a relationship or need a clinical diagnosis, expected to provide useful information about an individual's health recommended, unless justified by seeking this type of examination and consultation with stakeholders.
    - B. Screening of populations which had suffered medically, unless the expected benefits to individuals who are screened or the population as a whole is sufficient to compensate for the economic and social costs, including radiation damage that can occur.
    - C. Is exposing people to radiation in medical research is unjustified unless in accordance with the provisions in force in the State of Kuwait in the Helsinki Declaration 1992 and its amendments, and follow these guidelines for implementation, prepared by the Council for international organizations of medical sciences and the World Health Organization, unless it is subject to approval by the Commission on radiological protection.

Article (45): calibration and quality control:

1. The licensee calibration sources used in medical exposures in standard Dosimeters Laboratory accredited by the Ministry of health.
2. The licensee shall establish a program for quality control by a qualified specialist in the field of radiation or medical physics or under his supervision, quality control programs in the field of medical exposures that the following :
  - A. Physical measurements of radiation generators x-ray system and accessories constructors' irradiation setup time for operation and periodically thereafter.
  - B. Verification of physical factors and appropriate clinical use in the diagnosis or treatment of patients.
  - C. C-Written records of procedures and relevant results.
  - D. Verify calibration and operating conditions for dosimeters and monitoring equipment.
  - E. Where possible in regular, independent audits of the quality assurance program for radiotherapy procedures.

Article (46): adjust exposure in diagnosis:

1. Ensure that the licensee be medical exposures to patients at the lowest level reasonably achievable and consistent with obtaining the required diagnostic markers and should in particular consider the audits if doses higher than guidance in annex III to this regulation.
2. The licensee to verify that the calibration sources used in medical exposures derived from a standard laboratory.

Article (47): control in nuclear medicine

The licensee must ensure that:

1. Doctors who prescribe or conducting diagnostic applications using radioactive materials are the following:
  - A. patient's exposure is the minimum required to achieve the required diagnostic.
  - B. That put in mind relevant information from previous tests so you can avoid additional examinations.
  - C. Take into account the indicative levels set out in annex III to this regulation relating to medical exposure.
2. That the medical practitioner or other technical photography, as appropriate, in order to achieve the minimum exposure of patients as consistent with acceptable quality for photos.
3. Avoid using radioactive materials in diagnostic procedures or radiation therapy procedures during pregnancy and in pregnant women or likely to be in pregnancy unless there is strong clinical reasons.

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4. Recommendation for lactating mothers stop breastfeeding until it stops the secretion product medical radiation amount is not transferred to the infant's effective dose is unacceptable.

Article (48): therapeutic exposure control:

The practitioner must make sure of the following:

1. Maintain the healthy tissue during radiation treatment a minimum acceptable and in accordance with the transfer of the required dose to the body and the use of shielding member whenever practicable and appropriate.
2. Avoid radiation therapy procedures that cause the belly or pregnant women or likely to be in pregnancy unless there is strong clinical reasons.

Article (49): requirements for pregnant women:

The licensee must ensure that:

1. Avoid use of radioactive materials and remedial measures for pregnant women or likely to pregnancy unless there are strong clinical reasons.
3. Any remedial action planning for pregnant women so as to convey the lowest possible dose to the fetus.
4. Inform the patient of the potential risks.

Article (50): leave the patients to the hospital:

Do not allow patients to leave the hospital before remedial action to reduce the radioactivity of radioactive materials in the body to the proper level as specified in annex III to this regulation.

Article (51): incidents of medical exposure:

1. The licensee immediate investigation of any of the following incidents:
  - a. Treatment to a patient or for a tissue, or using a radioactive pharmaceutical for the error, or by units or parts of different dose values described by the medical practitioner.
  - b. Which displays diagnostic than exposure to, or resulted in doses exceeding the approved guidelines and standards set out in annex III to this regulation in large amounts.
  - c. Any breakdown in equipment, accident, or mistake, or other unusual events that may result in exposure to patients is far from the desired exposure.
2. The licensee shall, in respect of any of the above, the following:
  - a. Calculation or estimation of doses received and distributed in the patient's body.
  - b. Indicate the corrective measures required to prevent the recurrence of such incident.
  - c. Implementation of all corrective measures which fall within its area of responsibility.
  - d. Inform the Health Ministry within 24 hours of the incident and submit a written report within ten days after discovery of the incident, a written report indicating the cause of the accident and includes information on dosing and corrective measures, and any other information related to this matter.
  - e. Inform the patient and the physician regarding the incident

Article (52): medical records and documentation:

The licensee must keep records of the following:

1. in the field of diagnostic radiology: information necessary to allow recalibration of doses, including the number of exposures and exposure time for screening endoscopy.
  2. in the field of radiotherapy: a description of the portion size of target therapy, the dose to the center part to expose him, and the minimum and maximum doses to members of the other, and the total time and dose fractionation.
  3. In nuclear medicine: type examination or required actions and radioactive pharmaceuticals and radioactivity.
  4. The volunteers in medical research adopted taking into account the provisions of article 44 of this regulation.
  5. The results of calibration, as well as the results of the periodic examinations of physical and clinical variables during radiation therapy.
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## Chapter VI

### Protecting the public from radiation exposures

#### (Limits of dosage requirements prevent consumer products visitor's radiological areas)

##### Article (53): the responsibility of the licensee:

1. The licensee responsibility includes all matters associated with exposures the public and future generations and environmental pollution as a result of the use of radioactive sources in violation of the provisions of this regulation.

The licensee must ensure that:

A - Policy development and organizational arrangements that meet the requirements and rules for the general public.

B- Develop precautions and contingency plans and arrangements of the radiation monitoring commensurate with the nature and extent of radiological risks at the time of the accident.

C- Provide adequate manpower and personnel training, appropriate training.

D- Maintain sufficient records specified in regulations adopted by the Ministry of health.

3. The licensee must provide adequate information and instructions for visitors to ensure restriction of their exposure and other individuals.

##### Article (54): the dose limit for the general public:

Determine the dose to the public in accordance with annex III to this regulation.

Article (55): the dose limits do not apply to all people who visit patients or consolation, however, is restricted to the dose received by any person from the limits laid down in annex III to this regulation during diagnostic or therapeutic.

##### Article (56): the requirement to regulate protection of the public from the risk of radiation:

Rests with the licensee with respect to the sources under his responsibility develop, implement and maintain the following:

- 1-- Procedures and organizational arrangements for the protection and safety of the public.
- 2-- Examples of protection measures and reduce the exposure of the critical group.
- 3--security measures to control sources of potential public exposures and safety facilities, equipment and services are appropriate and adequate for the protection of the general public to their nature and extent, with the amount of exposure and the possible provision of monitoring equipment and appropriate control programs for the general public.
- 4-- Do adequate training for employees who carry out functions relating to the protection of the general public.
- 5--prepare adequate records of surveillance and monitoring.
- 6--monitoring the emergency plans and procedures.

##### Article (57): disposal of radioactive materials and environmental monitoring:

1. Prevent the release of radioactive substances resulting from authorized practices and sources in the environment only if it was absolutely within the limits approved and controlled manner, using methods approved by the Ministry of health.
2. The licensee must do during the operation of the sources under his responsibility:
  - A- Keep all radioactive releases to a minimum.
  - B- Control of releases in detail and precision required for the statement of commitment adopted by the border and assess the critical group displays.
  - C- Recording monitoring results and estimated exposures.
  - D- Submit reports to the Ministry of health as defined in the license.
  - E- Inform the Ministry of health immediately of any launch beyond the limits approved by it.

##### Article (55): consumer products:

1. May not exceed the level of radiation in food and drinking water and bottled liquids and feed that allows the circulation in the country levels and limits set out in annex VI to this regulation.
2. The Ministry of health is empowered to examine and evaluate the result of the sample in terms of suitability for consumption.
3. The Ministry of health determines the sampling methods and the preparation and testing carried out in cooperation with other stakeholders.
4. When the radiation levels exceeded the limits provided for in annex VI to this regulation is coordination with the Ministry of health to get rid of them either re-exported or destroyed at the expense of the owner.
5. For imported materials imported must submit to the Department of health radiation-free certificate issued and certified by the country of origin.

Article (59): visitors to the areas under the control and supervision of:

- 1- Must have visited areas controlled by somebody familiar with the measures of prevention and safety.
- 2- You must provide adequate information and instructions for the visitors before they enter any area subject to oversight to ensure appropriate prevention and other individuals.
- 3- You must follow the guestbook entry to areas under appropriate supervision, setting appropriate benchmarks in these areas.

## **Chapter VII**

### **Safety and accidents**

Article (60): design requirements:

You must include the conditions of the security requirements in the design of installations containing radioactive sources and radioactive waste management equipment designs that are consistent with the principle of precaution in order to put an end to the possibility of underlying exposures.

Article (61): the source site:

When choosing the location of any source must be taken into account:

1. Factors that may affect the safety of sources.
2. Factors that may affect workers and audience members internally or externally.
3. Take engineering design all other factors into account.

Article (62): location:

Make a calendar for any proposed facility site contain radioactive sources or processing radioactive waste management facility, and must take into account the characteristics of the site that may affect the security of sources such as floods and earthquakes, floods, earthquakes and other natural disasters, the extent of the ability of the proposed site to address these factors.

Article (63): maintenance, testing and monitoring:

The licensee must ensure that the implementation of the following:

1. Maintenance and surveillance and testing and all kinds of service whenever necessary to ensure that the source is still the condition meets the requirements of protection and safety design throughout the lifetime of the source.

Article (64): inventory of radioactive sources:

The licensee bears full responsibility for radioactive sources and materials controlled by him and must put the system inventory of the sources and materials containing record source or the article, name, description and the physical and chemical condition and serial number of the source websites and all other detailed data source or radioactive material, activities and events used.

Article (65): incident management:

1. The licensee must be prepared to take any actions or actions are required to address and respond to the incident and to correct errors.
2. For large and complex sources the licensee must:
  - A- Preset is a guide on incident management takes into account the effective response to the security requirements for the source of potential accidents.
  - B- Provide and furnish the equipment and tools and diagnostics that may be needed to control the course of the accident and the consequences.
  - C- The operating and emergency personnel are trained and retrained on the roads and the steps to be followed when the accident occurred.

Article (66): plans of emergency

- 1- The licensee shall prepare a contingency plan and approved by the Ministry of health for any practice that might require immediate intervention, and must involve all the bodies involved in the intervention plan, each according to its functions.
- 2-for major accidents should be separate contingency plans within and outside and beyond the borders of the region are interlinked with each other plans, and licensee shall bear full responsibility for the implementation of the plan within the site, whether outside the site or the area, implemented Contingency plans by existing bodies to intervene with the Ministry of health, Licensee shall cooperate with the Ministry of health in coordinating and facilitating the roles of all participants in the preparation of the plan and in its application in the circumstances of the incident.
- 3- Emergency plan must include the following:
  - A - Delineation of responsibilities in terms of communication of the relevant authorities and the start of the intervention.
  - B- Set the operational conditions of the source that may lead to the need for intervention.
  - C- The values of levels of intervention and implementing various safeguards depending on the duration of the incident.
  - D- Methods and steps to contact the concerned authorities for help.
  - E- Description of the methods and tools to evaluate the accident site and outside the sequence of these methods.
  - F- Describes the arrangements for communication and information.
  - G- Criteria for ending the intervention.
- 4- You should review and update emergency plans periodically and according to the rate established by the Ministry of health, must take all precautions for the training of all stakeholders in the implementation of these plans.
- 5-licensee must in coordination with the Ministry of health to provide information for the general public who may be affected by the incident to draw from when the incident and includes acts and actions to be taken to mitigate the effects of the accident on people and the amount of information and the adequacy of certification of the Ministry of health.
- 6-the licensee must ensure that the needs and the possibilities for providing information to the various authorities to predict the magnitude and extent of radiological releases to the rapid and continuous calendar position and to determine the need for preventive actions.

Article (67): emergency intervention:

- 1-the intervention in case of emergency on the basis of exposure levels of intervention or action levels and levels of intervention on the basis of the expected dose averted over time by preventive action associated with a specific intervention by the Ministry of health, the action levels are based on the concentration of radioactivity of radioactive material in the environment.
- 2-you must justify preventive action if the risk that the expected dose, not avoidable dose or dose rate for anyone to seriously injured in such circumstances should justify a decision not to take preventive action on an urgent basis, including annex VII annex to this regulation the doses can lead to such infection.

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3-decisions on urgent preventive action in the light of the circumstances prevailing at the time of the accident, and build on the launch of radioactive materials to the environment if possible, do not postpone taken subject to measurements that confirmed the departure and other appropriate preventive action by the Ministry of health in cooperation with other relevant bodies.

4- Specifies the levels of intervention required for urgent preventive action in annex VII to this regulation and taking into account the powers of the competent authority to determine any action.

Article (68): protection of workers engaged in intervention

1- Not be subject to any worker process intervention dose exceeding maximum dose in one year for occupational exposure, as specified in annex III to this regulation, except in the following cases:

A. for the purpose of saving life or prevent serious injury.

B. during procedures designed to avoid large aggregate dose.

C. During the action to prevent the development of tragic circumstances.

In carrying out intervention in these circumstances is making every possible effort to be less workers received doses twice the maximum dose in one year with the exception of the actions taken to save lives, make every possible effort to be less than 10 times the dose maximum dose in one year in order to avoid the effects of impact on health has been approaching the dose they receive ten times the maximum dose in one year, Or exceeding this limit in cases where the benefits to others clearly higher than danger.

2-workers who considered their dosage may exceed the maximum dose in one year as a volunteer, and be made aware in advance and clearly and comprehensively the potential health risks, and be trained adequately to actions that may be required.

3-take all reasonable steps to provide appropriate prevention during the emergency intervention order calendar and record doses received by workers performing emergency intervention after the intervention is to inform personnel engaged since received doses and the resulting health risks.

Article (69): Preview and information:

1. Any natural or legal person authorized to possess a radiation source is covered by rules that allows deputy and Ministry of Health officially mandated to carry out control and inspection of installations and facilities that are with these sources to obtain information on the person's commitment to the provisions of the rules and requirements of prevention and safety.

2. Any natural or legal person licensed to practice dealing with the source included in the rules that the Ministry of health provides the notification gives reasonable information and records relating to prevention and security, especially with regard to storage and use.

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# Appendix V: National Emergency Plan

## National Emergency Plan for Responding to Nuclear and Radiation Accidents Second Revised Periodical Copy 2012

### 1. Introduction

Due to the fact development (qualitative and quantitative) in using radiation sources in different medical, industrial, agricultural, and research fields daily as well as the production of energy using nuclear reactors on the international level, the Public Authority for Civil Defense as the party concerned to prepare and execute the plans for emergencies in the country and respond to incidents, including radioactive and nuclear incidents, saw the need to prepare an integral plan that includes all concerned parties and meets the needs of the State and its nature as well as the nature of possible accidents to coordinate between different parties for guaranteeing quick response and decrease of the resulting damage to the minimum.

Even though the security and safety procedures have been taken into consideration when designing and using and transporting the different sources of radiation, accidents resulting from radiation sources and using them are more numerous than accidents from nuclear reactors. Unlike accidents at nuclear reactors, these accidents affect a certain group of people, whether those working in the field or the public. The Ministry of Health in the State of Kuwait issued the following ministerial decisions to maintain the safety of citizens and organized the use of radiation sources:

1. Ministerial decision 552/2003 issued from the Ministry of Health for adopting the deed regulating the use of ionized radiation and preparing the procedures and safety precautions for prevention from its hazards which includes the limits and directions and levels of intervention and commitments to inform and to the safety of sources and response to accidents
2. Ministerial decision 553/2003 issued by the Ministry of Health for adopting the deeds of regulations and conditions and preventive procedures to be followed to get rid of radioactive wastes and storing the same and the environmental safety limitations for getting rid of them
3. Ministerial decision 225/2005 issued by the Ministry of Health for adopting the deeds for safe transportation of radioactive material

It is known worldwide that the main characteristics of radiation and nuclear emergencies department is, first and foremost, the capacity to take immediate decisions based on the available information and then review the procedures for responding to the accident regularly and continually based on the detailed information available to the radiation emergency department and the developments.

It was taken into consideration when this plan was prepared that it meets the standards and requirements of the International Atomic Energy Agency and the suggestions of the Arab Atomic Energy Agency in accordance with the possible radiation accidents and legislations and functions of the executive parties in the State of Kuwait.

A deed of the general procedures for evaluation and response was issued for the radiation and nuclear emergencies at the parties participating in the response and the deeds of the procedures are considered comprehensive to the plan.

#### 1.1. Goal

This plan aims at preparing a basic structure for responding to any radiation and nuclear emergencies which may affect the State of Kuwait – whether due in the State of Kuwait or abroad – and comprehensively with the structure adopted in the State for overcoming emergencies and catastrophes as well as integration on the level international level in accordance with the commitments of the State of Kuwait in this regard.

When preparing this plan it was taken into consideration that it meets the international standards and requirements and the possible radiation emergencies and legislations and functions of the executive parties in the State of Kuwait.

## 1.2. Definitions

The terms in the present plan shall have the meanings stated adjacent thereto in the first annex.

## 1.3. Participating national parties

1. Radiation and Nuclear Emergency Team	2. Public Authority for Agriculture and Fish Resources
3. Public Authority for Civil Defense	4. Municipality of Kuwait
5. Radiation Protection Department	6. Ministry of Electricity and Water
7. Medical Emergencies Department	8. Public Authority for Civil Aviation
9. Mubarak Al Kabir Hospital	10. Public Ports Authority
11. General Fire Department	12. Public Customs Authority
13. Ministry of Information	14. Border Department
15. Kuwait Institute for Scientific Research	16. Public Environment Authority
17. Coordination Leadership Directorate for Internal Security	

## 1.4. Scope

- 1) This plan shall cover the structural plan for responding to the radiation emergencies on the national level for coordinating between the response procedures of different parties and presenting the support to the delegated party when so required
- 2) This plan does not include the details for executing the response and the participating parties shall be required to prepare special plans and procedures that include these details based on the roles delegated to them in accordance with this national plan and the general procedures for evaluating and responding in nuclear and radiation emergencies. These plans and procedures shall be coordinated through the Radiation and Nuclear Emergencies Committee.

## 2. Planning Principals

### 2.1. Legal Principals

**The plan relies on a group of laws and decisions that are related to the emergencies and general catastrophes. These laws and regulations include:**

1. Law decree number 21 of 1979 pertaining to civil defense: which stipulates in article (3) that the Minister of Interior is the first party responsible for civil defense and the Public Authority for Civil Defense is the party concerned with preparing and executing the plans and projects for civil defense procedures in cooperation with the other ministries and bodies. This decree also stipulates in article (4) that the civil defense committee, which is specialized in coordinating plans and civil defense procedures with different bodies and it was established by a decision of the council of ministers and the same shall be presided over by the Minister of Interior.
2. Decision of the council of ministers number (897) of 1997 which stipulated the formation of the civil defense committee whose function is to prepare the general emergency plan on the level of the State to face any emergency and execute the same.
3. Law decree number 131/1977 pertaining to organizing the use of ionized radiation and prevention from risks which stipulates in article (6) that a Radiation Protection Committee shall be established by a decision from the Minister of Health whose responsibility shall be to look into the matters pertaining to protection from radiation and determination of the policy that shall achieve the same and issuance of the

recommendations and suggestion of legislations pertaining to protection from radiation. It was established in article (8) the conditions for the concerned party for informing of the radiation accidents. The Radiation Protection Department – in its capacity as the concerned party determined by the Ministry of Public Health – shall be required to cooperate with concerned parties to take the required procedures for avoiding the risks resulting from accidents and emergencies which lead to ionized radiation and to avoid their repetition.

4. Decision 598/2003 for appointing the Radiation Protection Department as the party indicated in decree 131/1977.
5. Ministerial decision number (97) of 2010 AD pertaining to reforming the Radiation Protection Committee which is specialized in preparing the radiation policy and preparing the principals and limits of radiation levels which aim at protecting the citizens and the State from radiation risks.
6. Ministerial decision number 552/2003 issued by the Ministry of Health for adopting the deeds for organizing the use of ionized radiation and preparing the procedures and precautions for prevention from the risks, and articles (66) and (67) of the same determine the responsibilities of the using parties in preparing the emergency plan for the sources under their responsibilities; this plan is subject to the approval of the Ministry of Health; article (68) stipulated the regulations for protecting the workers participating in the intervention in emergencies.
7. Law number 8 of 2003 for the approval of the State of Kuwait participating in the agreement with regard to early notification of a nuclear accident.
8. Law number 9 of 2003 pertaining to presenting help in case a nuclear or radiation emergency shall occur.
9. Letter issued by the Ministry of Foreign Affairs which delegated the Kuwait Institute for Scientific Research as the concerned national authority NCA(A) and NCA(D) in accordance with the said agreements.
10. Decision pertaining to forming the Emergency Committee for Radiation and Nuclear Accidents.
11. Ministerial decision 194/2011 pertaining to the limits of radiation concentration levels in foods and potable water and feed during emergencies whether in local or imported products.

## **2.2. Possible Emergencies**

Due to the absence of reactors or nuclear facilities of the first and second categories within a 100 km range from the Kuwaiti borders, all radiation or nuclear accidents which may occur and affect the State of Kuwait – whether from radiation activities or radiation sources within the borders of the State of Kuwait or from nuclear facilities or other radiation sources outside the State of Kuwait – shall be within the third, fourth or fifth categories as follows:

- 2.2.1. Third category emergencies are those occurring within the radiation facilities in the State of Kuwait of all kinds (fire including radioactive material, radiation leak, exposure of members...)
- 2.2.2. Fourth category emergencies are those resulting from the following:
  - Transportation accidents including radioactive material
  - Loss of theft of radioactive sources
  - Finding radioactive material (such as in hardware stores or border points...)
  - Fall of the satellite working with nuclear energy in the territory of the State of Kuwait
  - Explosion or sabotage of radioactive material within the State of Kuwait or at its borders
- 2.2.3. Fifth category emergencies are those resulting from radioactive pollution in the State of Kuwait whether by air or sea due to an accident outside its borders and in particular:

- Accidents in nuclear reactors or facilities in other countries
- Accidents in ships, airplane carriers or submarines working on nuclear energy
- Objects or persons contaminated with radioactive material (food material, merchandise, transportation means...)

### 2.3. Participating Parties

The following parties shall be considered as participating to the response for radioactive and nuclear emergencies as required by the emergency circumstances:

#### 2.3.1. Third category emergencies

- Using Party
- Radiation Protection Department at the Ministry of Health
- Public Authority for Civil Defense at the Ministry of Interior
- General Fire Department
- Medical Emergencies Department at the Ministry of Health
- Coordination Leadership Directorate at the Interior Defense

#### 2.3.2. Fourth category emergencies:

- Radiation Protection Department at the Ministry of Health
- Public Authority for Civil Defense at the Ministry of Interior
- General Fire Department
- Medical Emergencies Department at the Ministry of Health
- Using Party
- Coordination Leadership Directorate at the Interior Defense

#### 2.3.3. Fifth category emergencies:

- Emergency Committee for Radiation and Nuclear Accidents
- Radiation Protection Department
- Kuwait Institute for Scientific Research

When so required, the following parties can participate in the fifth category to follow up the development of the spread of contamination and evaluate the level of containment and suspend the use of contaminated food products and water when so required. The same shall be coordinated with the Radiation and Nuclear Emergency Committee:

- Public Authority for Civil Defense
- Boarder Department
- Public Customs Authority
- Medical Emergencies Department
- Mubarak Al Kabir Hospital
- General Fire Department
- Ministry of Information
- Public Authority for Agriculture and Fish Resources
- Municipality of Kuwait
- Ministry of Water and Electricity
- Public Authority for Civil Aviation
- Public Ports Authority
- Public Environment Authority
- Coordination Leadership Directorate at the Interior Defense

### 2.4. Funding

All the parties indicated above shall bear responsibility for the material required for covering the expenses for executing the functions delegated to them in accordance with the present plan.

## 3. Response to Emergencies

### 3.1. Responsibilities and Functions

All the parties participating in the response to the emergencies shall execute the functions indicated in the second annex.

### 3.2. Notification and means of effecting response

#### 3.2.1. Accidents that occur in the State of Kuwait

- 1) The general emergency hotline (112) and the operations room at the civil service (1804000) shall be adopted as a central communication point for notifying about radiation and nuclear emergencies within the State of Kuwait

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- 2) The Civil Defense shall coordinate with the Radiation Protection Department for making sure of the validity of the notification when required and it shall effect the response of the participating parties as required by the emergency circumstances
- 3.2.2. Notification of the incident or radiation contamination from outside the State of Kuwait
    - 1) The notification for the accidents outside the State of Kuwait or finding a radiation contamination from abroad which is a fifth category emergency shall be received in one of the following means:
      - a. Notification from the International Atomic Energy Agency of the nuclear or radiation incident at another country in accordance with the early notification agreement: the Kuwait Institute for Scientific Research shall receive the notification and send it immediately to the Radiation Protection Department
      - b. Direct notification from another country: the Ministry of Foreign Affairs shall receive a notification and directly refer it to the Radiation Protection Department
      - c. Establishment of a radiation contamination through the early notification network or other stations for measuring radioactive activity and then the Radiation Protection Department shall inspect the notification and evaluate the level of radioactive contamination and effect the response
    - 2) The Radiation Protection Department shall evaluate the information and effect the response.
- 3.3. Response Department and Structure
    - 3.3.1. Third and fourth category emergencies

The Civil Defense shall direct the response to the emergencies from the third and fourth categories. The following figure (1) shows the response structure in this case.
    - 3.3.2. Fifth Category Emergency:
      - 1) The Radiation and Nuclear Emergencies Committee shall preside over the Response Department for the emergencies of the fifth category and coordination between the participating parties
      - 2) The Radiation Protection Department shall evaluate the radiation condition and shall suggest the required recommendations for treating the same and it shall present them before the radiation and nuclear emergencies committee
      - 3) In case the situation shall require banning the import of food material and merchandise from the countries and regions affected by the accident, the committee shall contact the Ministry of Commerce and Industry to ban the import and a term for banning the renewal shall be determined when so required by virtue of a written letter
      - 4) The committee shall contact the Kuwait Municipality for taking the required procedures in case some kinds of food material and water shall be limited in the State of Kuwait due to the high levels of contamination above the limits adopted by the Ministry of Health
      - 5) In case a product shall be banned or confiscated from the markets, the concerned parties shall be informed directly by means of an official letter from the director of the radiation prevention committee
- 3.4. **Medical Support**
    - 1) Mubarak Al Kabir Hospital shall be the radiation injuries center and it shall prepare a plan for medical response in cooperation with the Ministry of Health. The center shall determine a special section that shall be isolated from the rest of the sections for the receipt of radiation injuries. A medical emergency team with experience in this kind of injuries shall be appointed and shall be adequately provided with equipment.
    - 2) In case persons shall be subject to or contaminated with radiation the user or civil defense or medical emergency department shall present first aid and conduct the
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complete radiation scan and transfer them to the radiation injuries center when so required and follow up their health condition.

- 3) The medical emergencies department shall appoint and qualify a medical team for the emergency plan whose functions shall include providing first aid to the injured before transferring them to the radiation injuries center
- 4) In any nuclear or radiation emergency, priority shall be given to save the life of the injured before taking any other procedures and before evaluating the dosage

### **3.5. Announcement to the Public and Awareness**

- 1) The director of the emergency department shall name a person in each of the emergency plans for spreading awareness between the public and coordinate the media affairs with the local authorities and official media bodies with regard to the emergency.
- 2) In case the emergency shall be of the fifth category:
  - a. The function of informing the public shall be limited to the official media and the remaining participating bodies shall coordinate with it and provide it with the clear information
  - b. Official medial bodies shall take all required procedures for controlling radiation and providing accurate information in a clear way to the public and respond to the inquiries through all possible media (hotline, website that is constantly updated, television, radio, press releases...)

### **3.6. Protection of Workers participating in radiation emergencies**

- 1) No worker completing an intervention operation may be subject to a dose exceeding the maximum dose in one year with regard to occupational exposure as indicated in the ministerial decision 552/2003 issued by the Ministry of Health for adopting the deeds for organizing the use of ionized radiation and preparing the procedures and safety precautions for the risks except in the following conditions:
  - a. For saving lives or preventing any dangerous injuries
  - b. While executing procedures that aim at avoiding a large collective dose
  - c. While executing the procedures for stopping the development of a crisis
- 2) When intervening in such conditions, all possible efforts shall be taken so that the doses received by the workers are less than half of the annual dose except for the procedures taken for saving lives, where all possible efforts should be taken so that the doses are less than tenfold the maximum annual dose to avoid health risks. The dose they receive can be close to tenfold of the maximum annual dose or exceed this limit where benefits to others is much higher than the risk to which the participating workers are exposed to during radiation emergencies.
- 3) Workers whose dose exceeded the maximum annual dose shall be considered as volunteers and they shall be informed beforehand clearly of the possible health risks and they shall be trained sufficiently of the procedures that may be required.
- 4) All acceptable procedures shall be taken for providing adequate prevention during emergency intervention for evaluating, assessing, and recording the doses received by the workers executing the intervention; and after the intervention, the participating workers are informed of the doses to be received and the health risks of the same.

### **3.7. Cooperation with neighboring countries and international organizations**

- 1) The Kuwait Institute for Scientific Research shall inform the International Atomic Energy Agency of the accidents that occur in the Kuwaiti territory if these accidents shall be included in the agreement for nuclear accident notification and the other commitments of the State of Kuwait pertaining to the notification of the accident.
- 2) In cases of emergency which may result in exposure or pollution that can spread outside the borders of Kuwait, the Ministry of Foreign Affairs shall inform the affected or likely-to-be affected countries. The Ministry of Electricity and Water

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shall inform the Arab Atomic Energy Agency of the conditions of the emergency in accordance with the agreements and treaties concluded in this regard.

- 3) When there is a need for international assistance for evaluating the accident or fighting its effects, the Kuwait Institute for Scientific Research shall request aid from the Agency in accordance with the aid agreement in accordance with law number 9 of 2003 pertaining to presenting aid in case of a nuclear emergency or radiation emergency and the decisions pertaining to the same.

#### 3.8. Ending the state of emergency

The Civil Defense or the Radiation or Nuclear Emergencies Committee, based on the situation, shall announce the end of the emergency and shall inform the parties who participated in the same to complete the emergency procedures after achieving the following conditions:

- 1) Regaining control over the radiation sources causing the accident
- 2) Removing the radiation pollution and decreasing the radiation levels resulting from the accident to levels adopted by the Radiation Protection Committee of the Ministry of Health
- 3) Completing the counting of those subject to radiation due to the accident and classifying them and taking the required procedures for treating them

#### 3.9. Follow up after the ending of the emergency situation and documentation

- 1) After ending the emergency situation the user and the Radiation Protection Committee and the other parties, in accordance with the authorities of each, shall analyze the reasons behind the incident and the contributing factors and the response procedures for benefiting from the same and taking the required procedures for decreasing the possibility of repetition of such incidents in the future and improving the level of response and avoiding any mistakes that may occur.
- 2) The incident and the response and the results of the analysis shall be documented.

### 4. Emergency Preparedness

#### 4.1. Responsible parties and their functions

- 1) The user and parties participating in the intervention shall be responsible for preparing trained teams on executing the functions delegated to them in accordance with the laws and regulations which control the functions of each party and they shall provide the said teams with equipment and devices required for performing their functions.
- 2) With regard to the user:
  - a. The user shall prepare an emergency plan indicating the possible accidents and preparedness and response procedures
  - b. The emergency plan of the user shall be subject to the Radiation Protection Department after the department shall make sure of the efficiency of the plan and shall compare it against the national emergency plan
- 3) With regard to the participating parties: the Radiation and Nuclear Emergencies Committee shall coordinate between these plans and guarantee their integration with each other and the national emergency plans
- 4) The Radiation Protection Department shall present the scientific, technical, and consulting support that is required for preparing the emergency plans and executing them and training for them to guarantee their integrality and comprehensiveness with the national emergency plan

#### 4.2. Revision and update of the national emergency plan

- 1) The Radiation Protection Department at the Ministry of Health and the Civil Defense at the Ministry of Interior shall review the national emergency plan within a maximum period of every three years and suggest the required updates in coordination with the other parties. The same shall be done while taking into consideration the experience gained from training, field exercises, and lessons learned

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from the effective emergencies and concerned regional and international developments.

- 2) The suggested amendments shall be presented to the director of the Radiation and Nuclear Emergencies Committee for approval and for presenting the same before the head of Civil Defense for adoption and issuance of the decisions pertaining to the amendments that had been approved of.
- 3) Each party shall review its emergency plan and update it periodically while benefiting from the lessons learned from training and the real emergencies.

#### 4.3. Training and Exercises

- 1) The participating workers shall be trained in any of the aforesaid emergency plans periodically and the training requirements shall be reviewed when necessary.
- 2) The Radiation Protection Department shall prepare the training program and exercises for the plan in cooperation with the other parties and shall present the same before the Radiation and Nuclear Emergencies Committee.
- 3) The Radiation and Nuclear Emergencies Committee is specialized in adopting the training program and exercises and coordinating the execution thereof between the different parties.