

THE NUCLEAR REGULATORY ACT No. 29 of 2019

IN EXERCISE of the powers conferred by Section 98 of the Nuclear Regulatory Act No.29 of 2019, the Cabinet Secretary, makes the following Regulations–

**NUCLEAR REGULATORY (RADIOACTIVE CONSUMER PRODUCTS)
REGULATIONS, 2022**

ARRANGEMENT OF THE REGULATIONS

Regulation

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	PART I: PRELIMINARY
Citation	1. These regulations may be cited as the Radioactive Consumer Products Regulations, 2021
Interpretation.	<p>2. In these Regulations, unless the context otherwise requires:-</p> <p>"Act" means the Nuclear Regulatory Act No. 29 of 2019 Laws of Kenya.</p> <p>"Authority "means the Kenya Nuclear Regulatory Authority established under Section 5 of the Act.</p> <p>"Certificate" means a written authorization issued by the Authority or any other recognized institution, after a radioactivity analysis has been conducted on any commodity listed in the first schedule.</p> <p>"Consumer Product" has the meaning assigned to it in the Act.</p> <p>"Exporter" means any person undertaking a trade or business by which any commodity listed in the first schedule is taken out of the country.</p> <p>"Importer" means any person undertaking trade or business by which any commodity listed in the first schedule is brought into the country. The term</p> <p>"Providers of consumer products" means the designers, manufacturers, producers, constructors, installers, distributors, sellers, and importers and exporters of consumer products</p> <p>"Radioactive Consumer Product" means "Consumer Product" as defined in the Act.</p>
Objective	3. The object of these Regulations is to bring into effect provisions of the Act relating to the safety of radioactive consumer products
Scope	<p>4. These regulations apply to:</p> <ol style="list-style-type: none"> 1) radioactive consumer products imported into the country 2) activities of providers of radioactive consumer products
	PART II: RADIOACTIVE CONSUMER PRODUCTS

<p>Justification for radioactive consumer product</p>	<p>5. The following practices are deemed to be not justified:</p> <ul style="list-style-type: none"> (a) Practices, except for justified practices involving medical exposure, that result in an increase in activity by the deliberate addition of radioactive substances or by activation in food, feed, beverages, cosmetics or any other commodity or product intended for ingestion, inhalation or percutaneous intake by, or application to, a person; (b) Practices involving the frivolous use of radiation or radioactive substances in commodities or in consumer products such as toys and personal jewellery or adornments, which result in an increase in activity, by the deliberate addition of radioactive substances or by activation
<p>Notification to the Authority</p>	<p>6 (1) Any person or organization intending to carry out manufacture, maintenance, import, export, provision, distribution and, disposal where necessary of consumer products shall submit a notification to the Authority of such an intention.</p> <p>(2) Such notification alone shall be sufficient as an authorization, provided that the exposures expected to be associated with the practice or action are unlikely to exceed a small fraction of the relevant limits, and that the likelihood and magnitude of potential exposures and any other potential detrimental consequences are negligible.</p>
<p>Authorization</p>	<p>7. The Authority shall upon receipt of a request for authorization to provide consumer products to the public:</p> <ul style="list-style-type: none"> (a) Require the provider of the consumer product to provide requisite documents to demonstrate compliance with the requirements in these Regulations. (b) Verify the assessments and the selection of parameters presented in the request for authorization; (c) Determine whether the end use of the consumer product can be exempted; (d) Authorize the provision to the public of the consumer product, where appropriate, subject to specific conditions of authorization.
<p>Requirements for Providers of Radioactive Consumer Products</p>	<p>8 (1) Providers of consumer products shall ensure that radioactive consumer products are not made available to the public unless:</p> <ul style="list-style-type: none"> (i) the justification of their use by members of the public has been approved by the Authority (ii) their use has been exempted on the basis of the criteria specified in Schedule II or (iii) their provision to the public has been authorized. <p>(2) Providers of consumer products shall:</p> <ul style="list-style-type: none"> (a) Comply with the conditions of the authorization to provide consumer products to the public;

	<ul style="list-style-type: none"> (b) Ensure that consumer products comply with the requirements of these Regulation; (c) Plan for appropriate arrangements for the servicing, maintenance, recycling or disposal of consumer products. <p>(3) Providers of consumer products shall provide clear and appropriate information and instructions with each consumer product on:</p> <ul style="list-style-type: none"> (a) Correct installation, use and maintenance of the consumer product; (b) Servicing and repair; (c) The radionuclides and their activities at a specified date; (d) Dose rates in normal operation and during servicing and repair; (e) Required or recommended options for recycling or disposal. <p>(4) Providers of consumer products shall provide the retailers of consumer products with appropriate information on safety and instructions on their transport and storage.</p>
<p>Optimization of Protection and Safety</p>	<p>9(1) Providers of consumer products shall,</p> <ul style="list-style-type: none"> (a) Apply the requirements of these Regulations in cooperation with providers of consumer products; (b) Verify and demonstrate to the Authority compliance with these Regulations in relation to any public exposure delivered by a source for which they have responsibility; (c) The design and manufacture of consumer products, with regard to features that could affect exposure during normal handling, transport and use, as well as in the event of mishandling, misuse, accident or disposal, shall be subject to optimization of protection and safety. <p>(2) Designers, manufacturers and other providers of consumer products shall, in optimizing protection and safety, take into account the following:</p> <ul style="list-style-type: none"> (a) The various radionuclides that could be used in consumer products and their radiation types, energies, activities and half-lives; (b) The chemical and physical forms of the radionuclides that could be used in consumer products and their significance for protection and safety in normal conditions and abnormal conditions; (c) The containment and shielding of radioactive substances in consumer products and access to these radioactive substances in normal conditions and abnormal conditions; (d) The need for servicing or repair of consumer products and ways in which this could be done; (e) Relevant experience with similar consumer products.

Labeling	<p>10. Providers of consumer products, who import consumer products, as exempt products, for subsequent sale and distribution shall:</p> <p>(1) Include in the application to the Authority for authorization to distribute a copy of the exporter's or other legal persons' authorization issued by the Authority in the country of manufacture or origin which authorizes distribution to members of the public in that country</p> <p>(2) Ensure that where practicable, a legible label is firmly affixed to a visible surface of each consumer product that:</p> <p>(i) States that the consumer product contains radioactive substances and identifies the radionuclides and their activities;</p> <p>(ii) States that the provision of the consumer product to the public has been authorized by the regulatory body;</p> <p>(iii) Provides information on required or recommended options for recycling or disposal.</p> <p>(3) Ensure that the information specified in (2) above is also printed legibly on the retail packaging of the consumer product.</p>
	<p>PART III: MISCELLENOUS</p>
Duty to comply with directions of the Authority.	<p>17. Every importer and exporter of any scheduled commodity shall comply with such directions as the Authority may give in order to facilitate the issuance of a certificate.</p>
Offences and Penalties.	<p>18. Any person who:</p> <p>a) Contravenes any standards issued under these Regulations or</p> <p>b) fails to comply with any written direction given by the Authority</p> <p>commits an offence and shall upon conviction be liable to the penalties stipulated in the Act</p>
Prohibition of Importing consumer products	<p>19(1) No consumer products specified in the First schedule shall be imported where the radiation levels exceed the limits indicated in the Second Schedule or as recommended by the IAEA.</p> <p>(2) Any imported consumer product found contaminated in excess of the levels referred to in (1) above:</p> <p>(i) Shall be denied entry into the Country</p> <p>(ii) Shall be sent back to the country of origin at the expense of the importer.</p> <p>(3) Notwithstanding the above the Authority reserves the right to dispose of such consumer product as per existing legal provisions.</p>

SCHEDULES

List of Schedules

1. First Schedule: List of Radioactive Consumer Products
2. Second Schedule: Radioactivity Limits for Consumer Products

FIRST SCHEDULE:

LIST OF RADIOACTIVE CONSUMER PRODUCTS

Three distinct categories of consumer product are:

- 1) Products to which small amounts of radionuclides have been added, either for functional reasons or because of their physical or chemical properties;
 - (a) Ionization chamber smoke detectors, in which the air between the electrodes is ionized by a radioactive source, commonly ^{241}Am radionuclide.
 - (b) Radioluminous products using luminous paint or containing gaseous tritium light sources. These include items such as timepieces, navigational instruments (e.g. compasses), torches, fishing floats and novelty items (e.g. key rings).
 - (c) Thorium, ^{85}Kr and tritium used by the lamp industry to improve the metallurgical properties of electrodes, to optimize the light spectrum or to provide a starter aid in high intensity lamps or in older fluorescent lamps.
 - (d) Gas mantles containing thorium, usually in the form of thorium nitrate.
 - (e) Thoriated tungsten welding electrodes used in tungsten inert gas welding techniques

- 2) Equipment capable of generating radiation;

Cathode ray tubes that were used in older televisions and computer monitors had the capability to produce X rays and were constructed in accordance with an international standard to ensure that external X ray emissions were negligible.

- 3) Products which, as a result of being intentionally exposed to radiation, contain activation products.

Gemstones with color intensified or altered by irradiation. [Activation products in the form of short half-life radionuclides within the gemstone structure.]

SECOND SCHEDULE:

RADIOACTIVITY LIMITS FOR RADIOACTIVE CONSUMER PRODUCTS

(1) Timepieces or hands or dials containing not more than the following specified quantities of byproduct material and not exceeding the following specified levels of radiation:

- (i) 25 millicuries of tritium per timepiece,
- (ii) 5 millicuries of tritium per hand,
- (iii) 15 millicuries of tritium per dial (bezels when used shall be considered as part of the dial),
- (iv) 100 microcuries of promethium 147 per watch or 200 microcuries of promethium 147 per any other timepiece,
- (v) 20 microcuries of promethium 147 per watch hand or 40 microcuries of promethium 147 per other timepiece hand,
- (vi) 60 microcuries of promethium 147 per watch dial or 120 microcuries of promethium 147 per other timepiece dial (bezels when used shall be considered as part of the dial),
- (vii) The levels of radiation from hands and dials containing promethium 147 will not exceed, when measured through 50 milligrams per square centimeter of absorber:
 - (A) For wrist watches, 0.1 millirad per hour at 10 centimeters from any surface,
 - (B) For pocket watches, 0.1 millirad per hour at 1 centimeter from any surface,
 - (C) For any other timepiece, 0.2 millirad per hour at 10 centimeters from any surface.
- (viii) 0.037 mega becquerel (1 microcurie) of radium-226 per time piece in intact timepieces.

- (2) (i) Static elimination devices which contain, as a sealed source or sources, byproduct material consisting of a total of not more than 18.5 MBq (500 μ Ci) of polonium-210 per device.
- (ii) Ion generating tubes designed for ionization of air that contain, as a sealed source or sources, byproduct material consisting of a total of not more than 18.5 MBq (500 μ Ci) of polonium-210 per device or of a total of not more than 1.85 GBq (50 mCi) of hydrogen-3 (tritium) per device.

(3) Balances of precision containing not more than 1 millicurie of tritium per balance or not more than 0.5 millicurie of tritium per balance part

(4) Marine compasses containing not more than 750 millicuries of tritium gas and other marine navigational instruments containing not more than 250 millicuries of tritium gas

(5) Ionization chamber smoke detectors containing not more than 1 microcurie (μ Ci) of americium-241 per detector in the form of a foil and designed to protect life and property from fires.

(6) Electron tubes*: *Provided*, that each tube does not contain more than one of the following specified quantities of byproduct material:

- (i) 150 millicuries of tritium per microwave receiver protector tube or 10 millicuries of tritium per any other electron tube;
- (ii) 1 microcurie of cobalt-60;
- (iii) 5 microcuries of nickel-63;
- (iv) 30 microcuries of krypton-85;
- (v) 5 microcuries of cesium-137;
- (vi) 30 microcuries of promethium-147;

And provided further, that the levels of radiation from each electron tube containing byproduct material do not exceed 1 millirad per hour at 1 centimeter from any surface when measured through 7 milligrams per square centimeter of absorber.1

*For purposes of this paragraph "electron tubes" include spark gap tubes, power tubes, gas tubes including glow lamps, receiving tubes, microwave tubes, indicator tubes, pickup tubes, radiation detection tubes, and any other completely sealed tube that is designed to conduct or control electrical currents.

(7) Ionizing radiation measuring instruments containing, for purposes of internal calibration or standardization, one or more sources of byproduct material: *Provided*, That;

- (i) Each source contains no more than one exempt quantities and
- (ii) Each instrument contains no more than 10 exempt quantities.

An instrument's source(s) may contain either one type or different types of radionuclides and an individual exempt quantity may be composed of fractional parts of one or more of the exempt quantities provided that the sum of such fractions shall not exceed unity.

(8) Under all reasonably foreseeable circumstances the effective dose expected to be incurred by any individual owing to the normal use of the radioactive consumer product shall be 10 μ Sv or less in a year. However, taking into account low probability scenarios (such as accident), the effective dose expected to be incurred by any individual owing to such situation from the radioactive consumer product shall not exceed 1 mSv in a year