

**REGULATION No.... /R/NS-NRP/RURA/2023 OF
...../...../2023 ON PHYSICAL PROTECTION OF
NUCLEAR MATERIALS AND INSTALLATIONS**

The Regulatory Board of Rwanda Utilities Regulatory Authority;

Pursuant to Law n°09/2013 of 01/03/2013 establishing Rwanda Utilities Regulatory Authority (RURA) and determining its mission, powers, organisation and functioning;

Pursuant to Law N°59/2017 of 24/1/2018 Governing Radiation Protection in Rwanda;

Considering deliberations from the consultative meeting held on, 2023 with stakeholders on security of radioactive materials in Rwanda;

Upon due consideration and deliberation in its meeting of .../.../2023.

HEREBY issues the following:

**REGULATION ON PHYSICAL PROTECTION OF NUCLEAR
MATERIALS AND INSTALLATIONS**

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CHAPTER I: GENERAL PROVISION

Article 1: Purpose

- 1) This regulation establishes the requirements for the design, implementation, maintenance and assessment of the physical protection of nuclear materials, devices, equipment, information and installations in order to reduce the risk of malicious acts involving such materials, devices, equipment, information and installations.
- 2) The fulfilment of the provisions of this Regulation represent a prerequisite for authorization of siting, design, construction, operation and decommissioning of nuclear installations, as well as the possession, production, processing, use, handling, storage, disposal or transport of nuclear materials, for peaceful purposes.

Article 2: Scope

- 1) This Regulation shall apply to the nuclear installations and nuclear materials, including nuclear fuel, as well as to the nuclear-related dual use items listed in Annex 1 to this Regulation.
- 2) When establishing the physical protection measures, the provisions of the specific requirements on nuclear material accounting and control, nuclear safety, radiation protection, transport of radioactive material, cyber security, waste management, emergency preparedness and response, import and export control, as well as of all other applicable laws shall be considered.
- 3) The fulfilment of the requirements of this Regulation does not exonerate the authorisation applicant / holder for obtaining all other authorisations, approvals or permits required by the current legislation.

Article 3: Definitions

- 1) For the purposes of this Regulation, the following terms and expressions shall be defined as follows:
 - a) **adversary**: any individual performing or attempting to perform a malicious act;
 - b) **Central Alarm Station**: an installation which provides for the complete and continuous alarm monitoring, assessment and communication with guards, facility management and response forces;
 - c) **configuration management**: the process of identifying and documenting the characteristics of a facility's physical protection system, including computer systems and software, and of ensuring that changes to these characteristics are properly developed, assessed, approved, issued, implemented, verified, recorded and incorporated into the facility documentation;
 - d) **contingency plan**: predefined set of actions for responses to unauthorized acts indicative of attempted unauthorized removal or sabotage, including threats thereof, designed to effectively counter such acts;
 - e) **conveyance**: any vehicle used for carriage of nuclear material cargo by road or rail; any seagoing vessel or inland waterway craft, or any hold, compartment, or defined deck area of a seagoing vessel or inland waterway craft used for carriage of nuclear material cargo by water; any aircraft used for carriage of nuclear material cargo by air;

- f) **defence in depth:** the combination of multiple layers of systems and measures that have to be overcome or circumvented before physical protection is compromised;
- g) **(access)delay:** the element of a physical protection system designed to increase adversary penetration time for entry into and exit from the nuclear installation or transport of nuclear material;
- h) **Design Basis Threat ('DBT'):** the attributes and characteristics of potential insider and external adversaries, who might attempt unauthorized removal of nuclear material or sabotage, against which a physical protection system is designed and evaluated;
- i) **detection:** a process in a physical protection system that begins with sensing a potentially malicious or otherwise unauthorized act and that is completed with the assessment of the cause of the alarm;
- j) **depleted uranium:** uranium containing a lesser mass percentage of U-235 than is present in natural uranium;
- k) **enriched uranium:** uranium containing a higher mass percentage of U-235 than 0.72%;
- l) **graded approach:** the application of physical protection measures proportional to the potential consequences of a malicious act;
- m) **guard:** a person who is entrusted with responsibility for patrolling, monitoring, assessing, escorting individuals or transport, controlling access and/or providing initial response;
- n) **inner area:** an area with additional protection measures inside a protected area, where Category I nuclear material is used and stored;
- o) **insider:** one or more individuals with authorized access to nuclear installations or nuclear material in transport who could attempt unauthorized removal or sabotage, or who could aid an external adversary to do so;
- p) **limited access area:** designated area containing a nuclear installation and nuclear material to which access is limited and controlled for physical protection purposes;
- q) **malicious act:** an act or attempt of unauthorized removal of nuclear material or sabotage;
- r) **natural uranium:** uranium (which may be chemically separated) containing the naturally occurring distribution of uranium isotopes (approximately 99.28% U-238 and 0.72% U-235 by mass);
- s) **nuclear facility:** a facility (including associated buildings and equipment) in which nuclear material is produced, processed, used, handled, stored or disposed of;
- t) **nuclear installation:** any nuclear facility, except facilities for the mining or processing of uranium ores or thorium ores and disposal facilities for radioactive waste
- u) **nuclear fuel:** fissionable nuclear material in the form of fabricated elements for loading into the reactor core of a civil nuclear power plant or research reactor;
- v) **nuclear fuel cycle:** all operations associated with the production of nuclear energy, such as mining and processing of uranium ores or thorium ores, enrichment of uranium, manufacture of nuclear fuel, operation of nuclear reactors (including research reactors), reprocessing of spent fuel, all waste management activities (including decommissioning) relating to operations associated with the production of nuclear energy, any related research and development activities.
- w) **nuclear material:** plutonium except that with isotopic concentration exceeding 80% in Pu-238; U-233; uranium enriched in the isotope 235 or 233; uranium containing the mixture of isotopes as occurring in nature other than in the form of ore or ore residue; any material containing one or more of the foregoing;
- x) **performance testing:** testing of the physical protection measures and physical protection system to determine whether or not they are implemented as designed, adequate for the proposed natural, industrial and threat environments and in compliance with established performance requirements;
- y) **physical barrier:** a fence, wall or similar impediment that provides access delay and complements access control;

- z) **physical protection:** measures (including structural, technical and administrative protective measures) taken to prevent an adversary from achieving undesirable consequences (such as sabotage, or the unauthorized removal of nuclear material in use, storage or transport) and to mitigate or minimize the consequences if the adversary initiates such a malicious act; in the context of this Regulation, physical protection is synonymous with nuclear security;
- aa) **physical protection event:** an event that has potential or actual implications for physical protection of a nuclear installation or material;
- bb) **physical protection incident:** a malicious act with potential or actual radiological consequences
- cc) **physical protection measures:** the personnel, procedures, and equipment that constitute a physical protection system;
- dd) **Physical Protection Plan** - the document prepared by the authorisation holder establishing the characteristics of the installation to be protected in the respective area, the number of posts and their location, the necessary number of guards, the arrangements, installations and technical means of physical protection and alarming, the encoding of the posts, the mode of action and the mechanisms of cooperation in different situations;
- ee) **Physical Protection Program** - a document prepared by the authorisation holder describing the design, implementation, evaluation and maintenance of the physical protection system;
- ff) **physical protection system:** an integrated set of physical protection measures intended to prevent the completion of a malicious act;
- gg) **protected area:** an area inside a limited access area containing Category I or II nuclear material and sabotage targets surrounded by a physical barrier with additional physical protection measures;
- hh) **Prudent management practice:** implementation of minimum physical protection measures in order to prevent unauthorized removal of nuclear materials and nuclear-related dual-use items
- ii) **radiological consequences:** radiological impact of an event affecting a nuclear installation/transport of nuclear material on the population and/or the environment, due to releases of radioactive material in the environment and/or direct exposure of members of the public to increased levels of radiation in comparison with the normal operation levels
- jj) **response forces:** persons, on-site or off-site, who are armed and appropriately equipped and trained to counter an attempted unauthorized removal of nuclear material or an act of sabotage;
- kk) **sabotage:** any deliberate act directed against a nuclear installation or nuclear material in use, storage or transport which could directly or indirectly endanger the health and safety of personnel, the public or the environment by exposure to radiation or release of radioactive substances;
- ll) **(nuclear) security:** the prevention of, detection of, and response to, criminal or intentional unauthorized acts involving or directed at nuclear material, other radioactive material, associated facilities, or associated activities;
- mm) **(nuclear) security culture:** the assembly of characteristics, attitudes and behaviours of individuals, organizations and institutions that serves as sustainable means to support, enhance and sustain nuclear security;
- nn) **shipper:** any person, organization or government that prepares or offers a consignment of nuclear material for transport, i.e. the consignor;
- oo) **standoff attack:** an attack, executed at a distance from the target facility or transport, which does not require adversary hands-on access to the target, or require the adversary to overcome the physical protection system;

- pp) **threat:** a person or group of persons with motivation, intention and capability to commit a malicious act;
 - qq) **threat assessment:** an evaluation of the threats based on available intelligence, law enforcement, and open source information that describes the motivations, intentions, and capabilities of these threats;
 - rr) **transport:** international or domestic carriage of nuclear material by any means of transportation, beginning with the departure from a facility of the shipper and ending with the arrival at a facility of the receiver;
 - ss) **Transport Control Centre:** a facility that provides for the continuous monitoring of a transport conveyance location and security status for communication with the transport conveyance, shipper, receiver, carrier, and when appropriate, its guards and the response forces;
 - tt) **two-person rule:** procedure that requires at least two authorized and knowledgeable persons to be present to verify that activities involving nuclear material and nuclear installations are authorized in order to detect access or actions that are unauthorized;
 - uu) **unauthorized removal:** theft or other unlawful taking of nuclear material;
 - vv) **vital area:** an area inside a protected area containing equipment, systems or devices, or nuclear material, the sabotage of which could directly or indirectly lead to high radiological consequences.
- 2) All other technical terms shall have the same meaning as defined in the *Nuclear Law*.

Article 4: Objectives of physical protection

- a) The physical protection systems shall be designed to fulfil the following objectives:
 - a. to establish and adopt the necessary measures to minimize the risks of attempted unauthorized removal or theft of nuclear materials and sabotage of nuclear installations or transport of nuclear materials;
 - b. to locate and recover missing nuclear material by ensuring the implementation of rapid and comprehensive measures to locate and where appropriate, recover missing or stolen nuclear material;
 - c. to protect against sabotage by protecting nuclear material and nuclear facilities against sabotage
 - d. to mitigate or minimize effects of radiological consequences of sabotage

CHAPTER II: GENERAL PROVISIONS

Section 1: General requirements for physical protection

Article 5: General responsibilities of authorisation holders

The authorisation holders shall:

- a) ensure the physical protection of the nuclear installations and/or nuclear material under their responsibility;
- b) cooperate and coordinate with all organizations having physical protection responsibilities;

- c) design, evaluate and maintain physical protection system in accordance with the requirements of this Regulation;
- d) ensure that the physical protection system is integrated and effective against both sabotage and unauthorized removal;
- e) ensure that the capabilities to detect, delay and respond to neutralize the threats are maintained at all times;
- f) implement any additional physical protection measures required by the Regulatory Authority.

Article 6: Management system

- 1) The authorisation holder shall establish, implement, document, maintain and continuously improve an integrated management system that shall be based on a systematic approach.
- 2) The integrated management system shall include the following:
 - a) physical protection provisions;
 - b) radiation protection and nuclear safety provisions;
 - c) the international standards' provisions for the technical components with a role in physical protection and nuclear safety;
 - d) control mechanisms and procedures for the implementation, evaluation, improvement and correction of physical protection measures.
- 3) The integrated management system shall be approved by the Regulatory Authority during the authorisation process.
- 4) The integrated management system documentation shall include provisions for:
 - a) the periodic verification of the physical protection system;
 - b) the periodic verification of the effectiveness of the security plan and contingency plan;
 - c) the periodic testing of technical and physical training of personnel with responsibilities for physical protection, as well as of the personnel of the internal response force;
 - d) regular health check, including emotional stability, of the personnel with responsibilities for physical protection, as well as of the personnel of the internal response force;
 - e) exercises to test the reaction time and the capability to respond to physical protection events of the personnel with responsibilities for physical protection, as well as the response force.
- 5) If the response force is provided by an external organisation, the testing of the physical training and the health checks of the personnel within the response force shall be carried out by that organisation.

Article 7: Person responsible for physical protection

- 1) The authorisation holder shall appoint, by internal decision, a person in charge with physical protection.
- 2) The person designated as responsible for physical protection shall be approved by the Regulatory Authority, during the authorisation process.
- 3) The person in charge with physical protection shall be directly subordinated to the manager of the installation and shall have the following duties:
 - a) To coordinate the physical protection activities at the installation;
 - b) To cooperate with the competent authorities for development of the Physical Protection Plan of the installation;
 - c) To prepare and ensure the proper implementation of the Physical Protection Program of the protected installation;

- d) To ensure, in cooperation with other departments within the installation, the proper functioning of the physical protection system;
- e) To ensure, in cooperation with other departments within the installation, the periodic assessment of interfaces between physical protection and nuclear safety, nuclear materials accountancy and control and radiation protection, and to inform the installation manager of any identified discrepancy;
- f) to elaborate and implement the annual plan for the periodic verification of the physical protection system;
- g) to elaborate and implement the annual training programme for the personnel with specific tasks for physical protection;
- h) to elaborate and apply the procedures regarding the control of access of personnel, materials and vehicles inside the installation;
- i) notify any physical protection event or incident to the manager of the installation.

Article 8: Implementation of physical protection measures by external companies

- 1) The authorisation holder may contract external companies for implementation of the physical protection measures, but it shall retain the overall responsibility over the physical protection of the nuclear installation/material.
- 2) The external companies providing services for physical protection of nuclear installations shall be authorised by the Regulatory Authority.
- 3) In order to obtain the authorisation referred to in paragraph 2), the external company shall submit to the Regulatory Authority an application, with a content as prescribed in Annex 3 to this Regulation.
- 4) The period of validity of the authorization for provision of physical protection services shall be established by the Regulatory Authority during the authorisation process but shall not be higher than 5 years.
- 5) The companies contracted for provision of physical protection services for nuclear installations shall designate on site only professionally certified guards, periodically tested from a psychological and psychiatric point of view, medically fit and periodically tested from the point of view of physical training.
- 6) The authorisation holder shall ensure the training and periodic knowledge verification of the staff with physical protection duties and responsibilities, including by demonstrations of the contracted personnel's capacities to fulfil their responsibilities under the Physical Protection Program.
- 7) The companies contracted for provision of physical protection services for nuclear installations shall obtain all security certificates and approvals issued by the competent authorities in accordance with the national legislation on protection of classified information.
- 8) The companies contracted for provision of physical protection services shall establish, document and maintain a quality management system.
- 9) The contracted personnel shall comply with the authorisation holder's procedures.
- 10) The contracted company shall make available to the authorisation holder and the Regulatory Authority all reports and documents specified in the applicable regulations, authorization conditions, or regulatory provisions.
- 11) The authorisation holder shall ensure an integrated security system for the nuclear installation.

- 12) The authorisation holder shall ensure the conditions for storage and use of the armament according to the national legislation in force.
- 13) Any change in the organizational structure of the authorisation holder or the contracted company, which may affect the capability to discharge their physical protection responsibilities shall be made only after the approval by the Regulatory Authority.

Article 9: Designing, execution, installation, commissioning or maintenance of physical protection systems by external companies

- 1) The authorisation holder may contract external companies for designing, execution, installation, commissioning or maintenance of physical protection systems, but it shall retain the overall responsibility over the physical protection of the nuclear installation/material.
- 2) The external companies providing services for physical protection of nuclear installations shall be authorised by the Regulatory Authority.
- 3) In order to obtain the authorisation referred to in paragraph 2), the external company shall submit to the Regulatory Authority an application, with a content as prescribed in Annexes 4 or 5 to this Regulation, as appropriate.
- 4) The period of validity of the authorizations for provision of services regarding the physical protection systems shall be established by the Regulatory Authority during the authorisation process but shall not be higher than 5 years.
- 5) The companies contracted for provision of services regarding the physical protection systems for nuclear installations shall use in this respect only professionally certified personnel, periodically tested from a psychological point of view and medically fit.
- 6) The companies contracted for provision of services regarding the physical protection systems for nuclear installations shall obtain all security certificates and approvals issued by the competent authorities in accordance with the national legislation on protection of classified information.
- 7) The companies contracted for provision of services for physical protection systems shall establish, document and maintain a quality management system.
- 8) The contracted personnel shall comply with the authorisation holder's procedures.
- 9) The contracted company shall make available to the authorisation holder and the Regulatory Authority all reports and documents specified in the applicable regulations, authorization conditions, or regulatory provisions.

Article 10: Protection of sensitive information

- 1) The authorisation holder shall take appropriate measures to protect the design of the physical protection system, the Physical Protection Plan, the Physical Protection Program, the Contingency Plan and the Cyber Security Plan by placing them under a strict confidentiality regime, according to the relevant legislation in force.
- 2) The authorisation holder shall take all necessary measures to ensure that the specific and detailed information regarding the physical protection of the nuclear materials and installations is adequately protected.

- 3) The authorisation holder shall restrict the access to all such information the disclosure of which could jeopardize the physical protection of nuclear materials and installations.
- 4) Information regarding the possible vulnerabilities of the physical protection system and the associated documents shall be placed under a strict confidentiality regime, and shall be protected in accordance with the relevant legislation in force.

Article 11: Protection of communication systems and networks

The authorisation holder shall/licensee protect the communication systems and networks associated with functions important to physical protection of nuclear material/installations from cyber-attacks, in accordance with relevant laws and regulations.

Article 12: Notification and reporting of physical protection events

- 1) The authorisation holder/licensee shall investigate all physical protection events listed in Annex 8 to this Regulation, and shall take all necessary corrective measures to avoid the recurrence of such events and/or to mitigate the consequences of physical protection incidents.
- 2) Physical protection incidents, listed in point 1-6 in Annex 8, shall be immediately notified, by phone, to the Regulatory Authority.
- 3) Physical protection events listed in points 1-11 in Annex 8 shall be notified in written, within 24 hours, to the Regulatory Authority.
- 4) The authorisation holder shall/licensee submit to the Regulatory Authority a preliminary investigation report of any physical protection incident, with 10 working days after the event.
- 5) The authorisation holder/licensee shall submit to the Regulatory Authority a detailed investigation report on the causes of any physical protection event as listed in points 1-11 in Annex 8, its circumstances and consequences, and on the compensatory measures or corrective actions taken, with 14 working days after the event.

Article 13: System for Nuclear Material Accountancy and Control

- 1) The authorisation holder shall maintain a permanent control over the nuclear materials under his/her responsibility that enables him/her to account for all nuclear material at all times
- 2) Information from the authorisation holder' system for nuclear material accountancy and control that indicates a possible unauthorized removal of nuclear material shall be communicated immediately to the Regulatory Authority.

Section 2: Implementation of fundamental principles of physical protection

Article 15: Graded approach

- 1) Physical protection measures shall be based on a graded approach, considering the current assessment of the threat, the relative attractiveness, the nature of the material and potential

consequences associated with the unauthorized removal of nuclear material and with the sabotage against nuclear material or nuclear installations.

- 2) Physical protection measures must be sufficiently flexible to ensure a gradual response to any malicious act, depending on the circumstances and taking into account the following conditions:
 - a) physical protection measures shall not negatively impact the radiation protection and nuclear safety measures;
 - b) physical protection measures shall not negatively impact the nuclear material accountancy and control system;
 - c) physical protection systems shall be designed in such a way that passive prevention and delay measures are used to the extent possible;
 - d) in the design of physical protection systems, the technical means and operational procedures shall complement each other;
 - e) physical protection measures shall remain operational, including in case of emergency situations generated by extreme external events / natural disasters or human activities;
 - f) the operating procedures for the physical protection system shall be designed in such a way as to support the normal conduct of the activities in the nuclear installation.

Article 16: Defence in depth

The establishment and implementation of physical protection measures and the Physical Protection Program shall consider the concept of defence-in-depth, by designing the measures in several successive layers of protection, including structural or other technical, personnel and organizational measures that would have to be overcome or circumvented by an adversary in order to achieve his/her objectives.

Article 17: Security culture

The authorisation holder shall give due priority to the security culture, its development and maintenance necessary to ensure its effective implementation in the entire organization.

Section 3: Establishment of physical protection levels

Article 18: Levels of physical protection

- 1) In the establishment of the levels of physical protection the licensee shall take into consideration the following:
 - a) the type and the characteristics of the nuclear installation;
 - b) the type, characteristics and quantity of the nuclear material, its accessibility, as well as the radiation doses in the absence of biological protection;
 - c) the possibility of inducing accidents with severe radiological consequences in a nuclear installation, as a result of actions directed against the nuclear installation/materials;
 - d) the existence of nuclear materials that can initiate or maintain, under normal conditions, a self-sustaining nuclear chain reaction without the existence of special moderating materials;

- e) the possibility of using the nuclear material for construction of an explosive nuclear device.

The main factor for establishing the necessary physical protection measures against theft, unauthorized movement and sabotage shall be the category of the nuclear material, which is prescribed in Annex 2 to this Regulation.

Article 18: Implementation of physical protection levels

For the implementation of the physical protection levels, the following conditions shall be respected:

- a) The physical protection system shall be designed for each nuclear installation considering the characteristics of the installation and its location;
- b) The authorisation holder shall identify the systems and components considered to be vital for the nuclear installation, with the assistance of nuclear safety, radiation protection and physical protections specialists;
- c) The physical protection systems adopted for each nuclear installation shall be compatible with the nuclear accountancy and control system, the radiation protection and safety system, including the nuclear and radiological emergency response plan, as appropriate;
- d) Whenever possible, the location on the site of vital areas shall be arranged in such a way that they are separated from the rest of the nuclear installation;
- e) In determining the level of physical protection at those installations where accidents with severe radiological consequences may occur, account shall be taken of the dose that a representative person may receive;

Article 19: Physical protection of complex nuclear installations

When establishing the level of physical protection for a complex nuclear installation, consisting in several facilities, the Regulatory Authority may assign to a certain facility, containing materials from a different category, a different level of physical protection than for the rest of the installation.

Section 4. Approval of physical protection measures, programs and plans

Article 24: Authorisation

- 1) The applicant shall submit to the Regulatory Authority, together with the authorisation application, all the necessary documentation for the evaluation of the physical protection measures.
- 2) The physical protection documentation shall include the characterization of the installation and the physical protection measures or Physical Protection Program, as appropriate.

Article 25: Characterisation of nuclear installation

For the characterization of the nuclear installation, the following data and information shall be considered:

- a) a description of the installation;

- b) the plans and location of the protected installation;
- c) description of the technological flow, as applicable;
- d) the installations and categories of materials that need to be protected;
- e) a description of the physical protection elements and equipment;
- f) the structures providing for physical protection, monitoring or response / intervention, as appropriate;
- g) the procedures regarding the organization and responsibilities of the physical protection personnel, the access control, the accountancy and control of nuclear materials, the reporting of the physical protection events / incidents.

Article 26: Physical Protection Program

- 1) The authorisation holders/licensee for nuclear installations and for transport of category I nuclear material shall develop a Physical Protection Program.
- 2) The Physical Protection Program shall include at least the elements mentioned in Annex 6 and respectively 7, to this Regulation.
- 3) The Physical Protection Program shall be approved by the Regulatory Authority during the authorisation process.
- 4) The authorisation holder shall periodically review the Physical Protection Program in order to ensure that it reflects the current operating conditions of the nuclear installation and the physical protection system.
- 5) The authorisation holder shall submit to the Regulatory Authority for approval any amendment to the Physical Protection Program, before making any significant modifications, including temporary changes, to the arrangements detailed in the approved Physical Protection Program.

Article 27: Review of Physical Protection Program

- 1) The authorisation holder/licensee shall review the Physical Protection Program at least once in 5 years.
- 2) The review of the Physical Protection Program shall be conducted by independent staff, who was not involved in the development of the program and is not involved in the implementation of the program.
- 3) The review of the Physical Protection Program shall include the following:
 - a) an audit of the effectiveness of the Physical Protection Program;
 - b) all component plans;
 - c) the implementing procedures;
 - d) all safety – security interfaces;
 - e) the equipment testing and maintenance procedures;
 - f) the equipment calibration program.
- 4) The licensee shall ensure that the outcome of the Physical Protection Program review, and any actions taken as a result of prior reviews, are documented and review reports shall be maintained in an auditable form.

Article 28: Sustainability Plan

- 1) The authorisation holder/licensee shall establish a Sustainability Plan for the physical protection system of the nuclear installation under its responsibility.
- 2) The Sustainability Plan shall include the following:
 - a) Operating procedures and instructions;
 - b) Training and management of all human resources ensuring the physical protection;
 - c) Equipment updating, maintenance, repair and calibration;
 - d) Performance testing and functional testing;
 - e) Physical protection system configuration management;
 - f) Analysis of financial resources and operational costs.
- 3) The authorisation holder shall periodically review and revise as needed, the Sustainability Plan.
- 4) The Sustainability Plan for the physical protection system of nuclear installations shall be approved by the Regulatory Authority, during the authorisation process.

Article 29: Contingency Plan

- 1) The authorisation holder/licensee shall develop, implement and maintain updated a Contingency Plan to respond to unauthorized removal of nuclear material or sabotage of nuclear installations/material, or attempts thereof.
- 2) The Contingency Plan shall be tested, through a full-scale exercise to be organised annually and partial exercises to be organised at least twice per year.
- 3) The frequency of exercises may be reviewed and agreed with the Regulatory Authority, depending on the following factors:
 - g) Change in the regulations;
 - h) Change in the target assets;
 - i) Change in the DBT;
 - j) Need to change major portions of the contingency plan or other plans;
 - k) Turnover rate of key personnel;
 - l) Degree of normal contact between the major response organizations;
 - m) Type and frequency of drills/partial exercises;
 - n) Validation and performance evaluation, as part of the approval process for a change in protective strategy or implementation of new equipment or barriers;
 - o) Need to maintain training;
 - p) Degree of success observed in previous exercises;
 - q) Any other factor that may be deemed necessary.
- 4) The Contingency Plan shall be periodically reviewed, at least every 5 years, and revised as necessary, as well as any time an improvement appears as needed.

Article 30: Physical Protection Plan

- 1) The authorisation holder/licensee shall develop the Physical Protection Plan for the nuclear installations/materials under its responsibility.

- 2) The Physical Protection Plan shall include at least the elements mentioned in point 6 of Annex 6 and respectively point 5 of Annex 7 to this Regulation.
- 3) The Physical Protection Plan shall be endorsed by the competent authorities for security and physical protection and shall be approved by the Regulatory Authority during the authorisation process.

Article 31: Physical protection system

- 1) The licensee shall ensure that physical protection system shall be designed together with the nuclear installation.
- 2) The design of the physical protection system shall contain at least the following elements:
 - a) its objectives, including the description of the types of threats to which the installation may be exposed and the identification of possible targets to be affected by deliberate actions;
 - b) a description of the installation and its localization, with the access roads and physical barriers and an identification of the areas to be protected;
 - c) the measures envisaged for detection of unauthorized access, including assessment of alarms, means of audible and visual alarms, checkpoints, organizational structures, procedures and staff training, as appropriate;
 - d) the measures envisaged for the detention of intruders by the response force and / or physical barriers and the response to acts directed against the nuclear materials / installations, including response structures, procedures and physical training, means of communication and response time until alarm signals are activated;
 - e) description and localization of physical protection equipment, as well as the procedures envisaged for their periodic control;
 - f) the procedures envisaged for controlling the access of persons, including employees, contractors and visitors, respectively for controlling the access of vehicles and materials / equipment;
 - g) the procedures envisaged for routine surveillance and emergency surveillance;
 - h) the procedures and means to be used for protection of confidential information related to the physical protection system;
 - i) the organizational structure of the department / external company that will ensure the physical protection;
 - j) the process of selection, qualification, technical training and physical training of the personnel that will ensure the physical protection;
 - k) the methods to be used for the evaluation of the physical protection system;
 - l) the response force and the means of communication with it;
 - m) technical drawings of the physical protection system.

Article 32: Maintenance and testing of the physical protection system

- 1) The authorisation holder/licensee shall develop, implement and maintain the necessary means and procedures for maintenance and testing of the physical protection system.
- 2) The authorisation holder/licensee shall conduct evaluations, including performance testing, of the physical protection system, which shall take into account the systems for nuclear material accounting and control, information security and computer security.

- 3) The licensee shall ensure that maintenance of physical protection equipment is performed according to approved procedures, vendor's recommendations, experience feedback, and system performance, in order to ensure that design requirements are not compromised.
- 4) In all cases of modifications and replacement of physical protection equipment, the authorisation holder/licensee shall ensure that the intended function of the system is not compromised.

Article 33: Performance testing of the physical protection system

- 1) The authorisation holder/licensee shall initiate a program for the periodic testing of the performance of the physical protection system, including the devices, equipment and software components of the system.
- 2) The authorisation holder/ licensee shall initiate a joint program with the external response force for periodic testing of the reaction time and capability to respond to physical protection events.

Article 34: Compensatory measures

- 1) The authorisation holder/ licensee shall identify and immediately implement measures to compensate for degraded or inoperable equipment, systems and components in case the physical protection equipment is taken out of service.
- 2) The authorisation holder/ licensee shall provide a level of protection that is equivalent to the protection that was provided by the equipment, system or component before degradation or inoperability.
- 3) The authorisation holder/ licensee shall ensure the provision of standby power to all types of physical protection equipment used in the Physical Protection Programme.
- 4) Compensatory measures shall be implemented as identified in Physical Protection Program.
- 5) The licensee shall ensure that the design change in the physical protection system that affects the system performance is approved by the Regulatory Authority before implementation.

CHAPTER III: PHYSICAL PROTECTION OF NUCLEAR MATERIAL AND INSTALLATIONS AGAINST THEFT OR UNAUTHORIZED REMOVAL DURING USE AND STORAGE

SECTION I: GENERAL CONSIDERATIONS FOR PHYSICAL PROTECTION AGAINST THEFT OR UNAUTHORIZED REMOVAL OF NUCLEAR MATERIALS

Article 35: Integrated physical protection system

The licensee shall ensure an integrated physical protection system is in place for a nuclear installation and effective against theft and unauthorized removal, as well as sabotage.

From design stage of the installation the licensee shall assess the equipment, systems or devices whose malfunction may directly or indirectly endanger the public health or safety by exposure to radiation.

The licensee shall identify equipment, systems or devices that must be protected by designating vital areas within the nuclear installation.

The licensee shall ensure that the physical protection system for a nuclear installation and considers the measures envisaged to ensure nuclear safety, radiation protection and the nuclear material accountancy and control, since the design stage of the installation.

Article 36: General requirements

- 1) In order to fulfil the objectives of the physical protection system, the licensee shall take into account the following measures:
 - a) Limiting the number of people who have access to nuclear materials or installations;
 - b) Requesting the competent authority, the prior verification, as well as the periodic verification, by specific methods, of the integrity of those persons who have regular access to the nuclear materials and installations;
 - c) Psychological verification and testing at least once every 12 months of the persons who have access to nuclear materials and facilities.
- 2) The licensee shall ensure that the computer systems used for physical protection, nuclear safety and nuclear material accountancy and control are protected so as not to be compromised.

SECTION II: REQUIREMENTS FOR CATEGORIES I AND II MATERIALS

Article 37: Use and storage

The licensee shall ensure that nuclear materials of category I and II are stored and used vital areas inside the protected area.

Article 38: Access control

The licensee shall ensure that passes or badges are always issued and visually displayed.

Article 39: Surveillance

- 1) The licensee shall ensure that all vehicles, persons, baggage and packages entering the protected area shall be inspected by specific means in order to prevent the introduction of tools, explosive materials, weapons or devices that could be used for sabotage or unauthorized removal of nuclear materials.
- 2) The licensee shall ensure that access of private vehicles to the controlled area is kept to a minimum and shall be limited to authorized parking zones.
- 3) The licensee shall ensure that the access of private vehicles to the protected area and to vital areas is prohibited.
- 4) The licensee shall ensure that persons that are inside the protected area, the area shall be subject to direct and continuous surveillance, which may also be performed by mutual observation when two or more persons are inside the area.

Article 40: Training

The licensee shall ensure that all personnel of the nuclear installation are regularly trained in the local rules on physical protection that they shall observe inside the installation, as well as in situations of attempted theft of nuclear materials or attempted sabotage.

For this purpose, the licensee shall ensure that notices on the local rules for physical protection are visibly displayed inside the installation.

Article 41: Transfer of responsibilities

- 1) The licensee shall ensure that the personnel carrying out activities involving nuclear materials strictly follow the procedures for transfer of responsibilities to the next shift.
- 2) The licensee shall ensure that the personnel referred to in paragraph 1) specified in the report of handing over / taking over the shift if there have been incidents or thefts of nuclear materials and reports directly to their supervisor all the irregularities found in what regards the physical protection of these materials.

Article 42: Records of persons

- 1) The authorisation holder/licensee shall keep records of all the persons holding keys and/or cards or who are authorized to obtain keys and/or cards to access the areas of storage or use of nuclear materials.
- 2) The authorisation holder/licensee shall implement measures for:
 - a) control and secure the keys and cards referred to in paragraph (1) in order to reduce the risk of duplicates;
 - b) changing the combinations of the locks at regular intervals. If a lock is compromised for any reason, it shall be immediately replaced immediately.

Article 43: Movement of nuclear material

- 1) The licensee shall ensure that the movement of nuclear material inside the protected area and vital areas is under his/her responsibility and shall ensure the implementation of all necessary physical protection measures.
- 2) The licensee shall ensure that the transfer of nuclear material outside the protected area takes place in accordance with the requirements of physical protection during transport.

Article 44. Delineation of the guarded precinct

- 1) The licensee shall ensure that the perimeter of the guarded precinct is delineated by placing a physical barrier around the building.
- 2) The licensee shall ensure that the walls of the building are sufficiently resistant to be considered as the perimeter of the guarded precinct, are provided with additional technical surveillance systems and alarms, installed outside them.
- 3) The licensee shall ensure that in the vicinity of the perimeter of the protected area, a controlled, clear area is provided, with good visibility and sufficient lighting to allow observation.
- 4) The licensee shall also ensure that intrusion detection and assessment shall be ensured throughout the entire perimeter of the protected area.

Article 45: Detection, evaluation, delay and response

In regard to the detection, evaluation, delay and response, the licensee shall ensure that:

- 1) Measures of detection, evaluation, delay and response are provided on a permanent basis, 24 hours per day.
- 2) Outside daytime working hours, the guards/physical protection personnel periodically report in accordance with existing procedures.
- 3) Guards / physical protection personnel are equipped with firearms, according to the legal provisions.
- 4) Response force is ensured at all times.

- 5) The response force is to be set up taking into consideration the DBT document issued by the Regulatory Authority, properly armed and able to respond in a timely manner to an armed attack in order to prevent the theft of nuclear material or the sabotage of the nuclear installation.
- 6) The Central Alarm Station personnel communicate with the response force at regular intervals.
- 7) The guards / physical protection personnel and the response force are adequately trained and equipped in accordance with the provisions of the applicable legislation.
- 8) The response force is well acquainted with the location of the nuclear installation and of the nuclear materials, and shall have adequate knowledge to enable it to carry out intervention actions considering the impact they may have on the nuclear safety and security of the installation.

Article 46: Patrolling

- 1) The authorisation holder/licensee shall ensure the patrolling of the protected area.
- 2) The licensee shall ensure that the main functions of the patrol(s) include:
 - a) visual inspection of the components of the physical protection system,
 - b) supplementing the existing physical protection measures, and
 - c) intrusion detection.

Article 47: Central Alarm Station

- 1) The licensee shall ensure that the access to the Central Alarm Station are controlled and restricted.
- 2) The information circulated inside the Central Alarm Station shall be securely managed and stored.
- 3) The licensee shall ensure that the Central Alarm is permanently monitored by suitably qualified and trained personnel, so that the evaluation of alarms, the initiation of the response and the communication with the guards / physical protection personnel and the response force is permanently ensured, 24 hours a day.
- 4) The licensee shall ensure that the Central Alarm Station are appropriately dimensioned construction in terms of mechanical strength, located in a protected area and which can continue to operate even in the presence of a threat.
- 5) The licensee shall ensure that Central Alarm Station are equipped with an additional uninterruptible power supply and shall be protected against unauthorized monitoring, tampering and counterfeiting.

Article 48: Communication

- 1) The licensee shall ensure that independent, redundant, two-way means of communication are used for detection, evaluation and response operations and allow communication between the guards / physical protection personnel, the Central Alarm Station and the response force.

- 2) The licensee shall ensure that the connection between the sensors of the detection system and the audio/video alarm display devices are ensured by two independent, redundant paths, equipped with an uninterruptible power supply.

Article 49: Exercises

- 1) The licensee shall ensure that exercises for testing the performance of the physical protection system, the training of the physical protection personnel, as well as the verification of the efficiency of the response in case of a threat, are performed at least twice a year, based on a plan approved by the Regulatory Authority.
- 2) The licensee shall ensure that the deficiencies found and the corrective measures taken as a result of these exercises are reported to the Regulatory Authority.

Article 50: Physical Protection Program

- 1) The authorisation holder/licensee shall develop and submit to the Regulatory Authority the Physical Protection Program for the nuclear materials and installations for approval.
- 2) The Physical Protection Program shall include at least the elements listed in Annex 6 to this Regulation.

Article 51: Reporting

The authorisation holder/licensee shall report to the Regulatory Authority as soon as possible and in maximum 24 hours in writing, any event / incident with implications on the physical protection of the nuclear materials and installations.

SECTION III: SPECIFIC REQUIREMENTS FOR CATEGORY I MATERIALS

Article 52: Design of vital areas

- 1) The licensee shall ensure that the vital areas are designed in such a way that the number of entrances and exits are kept to a minimum, preferably only one.
- 2) The licensee shall ensure that all emergency is equipped with alarm devices.
- 3) The licensee shall ensure that all exterior windows are permanently equipped with alarm devices and protected by metal bars firmly fixed to the wall.

Article 53: Secondary Central Alarm Station

The licensee shall ensure that ensure the continuous functioning of the Central Alarm Station during a physical protection event, redundancy measures are taken by building and commissioning a secondary alarm station.

Article 54: Continuous surveillance

The licensee shall ensure that the internal threats in vital areas that detects unauthorized actions, continuous surveillance are ensured and the two-person rule for access to nuclear materials is applied.

Article 55: Storage of nuclear material

- 1) The licensee shall ensure that nuclear material storage is constructed in properly dimensioned in terms of mechanical strength, which shall be located in an area inside the protected area and shall be provided with technical means for surveillance, alarming and robust locking devices.
- 2) The licensee shall ensure that the allocation and provisions of access keys or key cards to the nuclear material storage are strictly controlled.
- 3) The licensee shall ensure that access to the storage is allowed only to designated persons whose duties require such access.
- 4) The licensee shall ensure that access by other persons is allowed only with a companion.
- 5) The licensee shall ensure that in case the nuclear materials are stored during the night, or for a limited period of time, inside the controlled area or in a temporary storage place inside a vital area, additional physical protection measures shall be taken, in the form of technical means of surveillance and alarm and provision of guards / physical protection personnel.

Article 56: Vehicles' access

In order to prevent the penetration of the protected area, the licensee shall ensure that special barriers for vehicles are installed.

SECTION IV: REQUIREMENTS FOR CATEGORY III MATERIALS

Article 57: Use and storage of category III materials

- 1) The licensee shall ensure that Category III nuclear materials are stored and used inside a controlled area.
- 2) The authorisation holder/licensee shall develop a Physical Protection Plan.

Article 58: Instructions

- 1) The licensee shall ensure that all personnel of the nuclear installation are regularly instructed on the local rules on physical protection which they shall observe inside the installation, as well as in any situations of attempted theft of nuclear materials or attempted sabotage.
- 2) The licensee shall ensure that notices regarding the local rules on physical protection are visibly displayed inside the installation.

Article 59: Movement of nuclear material

The licensee shall ensure that the movement of nuclear material outside a controlled area or between two controlled areas are authorized only if the authorisation holder ensures the application of all necessary physical protection measures.

Article 60: Detection of unauthorised personnel

The licensee shall ensure that Measures are taken to detect the entry of unauthorized persons into the controlled area and to ensure the proper response of physical protection personnel and the response force.

Article 61: Record of authorised persons

- 1) The authorisation holder/licensee shall keep records of the persons who possess or are authorized to obtain keys / cards that allow them access to the areas of storage or use of nuclear materials.
- 2) The authorisation holder/licensee shall take measures for:
 - a) controlling and keeping the keys / cards safe, in order to minimize the risks of obtaining duplicates;
 - b) changing the combinations of locks at appropriate intervals. If a lock is compromised, for whatever reason, it shall be changed.

Article 62: Transfer of responsibilities

- 1) The licensee shall ensure that the personnel carrying out activities involving nuclear materials strictly follow the procedures for transfer of responsibilities to the next shift.
- 2) The licensee shall ensure that the personnel referred to in paragraph one (1) of this article are specified in the report of handing over / taking over the shift if there have been incidents or thefts of nuclear materials and to report directly to their supervisor all the irregularities found in what regards the physical protection of these materials.

Article 63: Response force

The licensee shall ensure that the response force is well acquainted with the location of the nuclear installation and the location of the nuclear materials, and shall have adequate knowledge of radiation protection to enable it to take action, taking into account the impact these may have on nuclear safety.

Article 64: Reporting

The authorisation holder/licensee shall report to the Regulatory Authority in writing, within maximum 24 hours, any event / incident with implications on the physical protection of the nuclear materials.

SECTION V: REQUIREMENTS FOR PROTECTION OF OTHER NUCLEAR MATERIALS AND OF NUCLEAR-RELATED DUAL USE ITEMS

Article 65: Storage of other nuclear materials and nuclear-related dual use items

The licensee shall ensure that the nuclear material not falling under any of the categories prescribed in Annex 2 to this Regulation and the nuclear-related dual use items listed in Annex 1 to this Regulation are stored in a space with controlled access.

Article 66: Physical protection of other nuclear material and of nuclear-related dual use items

- 1) The authorisation holder/licensee shall protect the materials and items referred to in article 65 against theft and unauthorized removal by applying the prudent management practice.
- 2) In regards to the minimum physical protection measures to be implemented the licensee shall ensure that:
 - a) the materials/devices/equipment are stored inside a building properly sized in terms of mechanical strength, equipped with technical means of surveillance and alarming, robust locking devices and lighting system;
 - b) the access to the storage building are allowed only for designated persons whose duties require such access;
 - c) access to the storage building by other persons are allowed only with a companion;
 - d) designation of a person responsible for the physical protection of materials/devices / equipment/information;
 - e) strict record of access keys/cards in the space where the materials devices equipment/information is located;
 - f) strict record of materials/device/equipment/information, including of their movements;
 - g) annual verification of the physical inventory of materials/devices/equipment/information;
 - h) password protection of information files or encryption of information transfer;
 - i) adequate protection of workstations (in case of information);
 - j) the Regulatory Authority is immediately notified in case of theft or loss of materials/devices/equipment / information.

Article 67: Authorisation condition

In order to obtain any authorization for carrying out activities involving other nuclear materials and/or nuclear-related dual use items, the applicant shall submit to the Regulatory Authority a description of the physical protection measures.

Article 68: Reporting

The authorisation holder/licensee shall report to Regulatory Authority in writing, within a maximum of 24 hours, any event / incident with implications on the physical protection of materials / devices / equipment / information.

SECTION VI: REQUIREMENTS FOR LOCALIZATION AND RECOVERY OF NUCLEAR MATERIAL IN CASE OF THEFT/LOSS/UNAUTHORIZED REMOVAL

Article 69: Immediate measures in case of theft/loss/unauthorised removal on nuclear materials

- 1) In case of any suspicion of a theft, loss, or unauthorised removal of nuclear material, the authorisation holder/licensee shall immediately verify the inventory of the material, and in case of a confirmation, notify the Regulatory Authority and the police.
- 2) The system of evidence and control of nuclear materials shall provide the authorisation holder with accurate information on the possible loss of nuclear materials.
- 3) The authorisation holder/licensee shall urgently take all necessary measures to locate and recover the missing material, as detailed in the Contingency Plan.
- 4) In regard for the location and recovery of missing nuclear materials, the licensee shall include the following steps:
 - a) Detection;
 - b) Confirmation;
 - c) Notification;
 - d) Location of the material;
 - e) Securing the material;
 - f) Recovery of the material.

Article 70: Detection of missing materials

The authorisation holder/licensee shall apply measures that allow the immediate detection of any theft / loss / unauthorized removal of nuclear materials, which shall include:

- a) Periodic inventory of nuclear materials;
- b) Ensuring measures for the detection of unauthorized persons entering areas where nuclear materials are used or stored;
- c) Periodic verification of the way in which the access control is ensured;
- d) Installation of ionising radiation detection equipment.

CHAPTER IV: PHYSICAL PROTECTION OF NUCLEAR INSTALLATIONS AND MATERIAL AGAINST SABOTAGE DURING USE AND STORAGE

Article 71: Physical protection measures against sabotage

- 1) The licensee shall ensure that physical protection measures against sabotage consider the DBT document, as well as the possible radiological consequences of such events.
- 2) The licensee shall ensure that measures against sabotage or sabotage attempts are detailed in the Contingency Plan developed by the authorization holder.
- 3) The licensee shall ensure that the efficiency of the Contingency Plan is periodically tested, through joint exercises with all competent authorities involved in the response to sabotage or sabotage attempts.

Article 72: Performance testing

- 1) The authorization holder/licensee shall periodically evaluate and test the performance of the physical protection system, including the timely response of the guards/physical protection personnel and the response force.
- 2) The licensee shall ensure that deficiencies found and the measures proposed to correct them are reported to the Regulatory Authority.

Article 73: Instructions

- 1) The licensee shall ensure that all personnel shall be regularly instructed on the physical protection rules that they shall observe inside the installation, as well as in situations of attempted sabotage.
- 2) Notices regarding the physical protection rules shall be visibly displayed inside the installation.
- 3) The authorisation holder shall instruct the personnel carrying out activities on the site of a nuclear installation or who have access to nuclear material, in order to understand and realize the risks and characteristics of insider threats, as well as to recognize and report suspicious activities.
- 4) The obligation to report suspicious activities with a potential impact on nuclear materials or installations shall be included in the authorisation holder's reporting procedures.

Article 74: Physical protection during outages

- 1) During the planned shutdown / technical overhaul / periodic maintenance of nuclear reactors, the physical protection shall be supplemented in order to enable the control of an increased flow of contractors and activities conducted inside vital areas.
- 2) The plan with the additional physical protection measures that will be taken during outages shall be submitted to the Regulatory Authority for approval, at least 60 days in advance.

- 3) In order to restart the reactor after the period of planned shutdown / technical overhaul / periodic maintenance, special measures shall be taken in order to detect any actions directed against the nuclear installation and/or materials.
- 4) The authorisation holder shall inform the Regulatory Authority about the implementation of all additional physical protection measures before requesting its approval for the reactor restart.

Article 75: Protection of vital areas

- 1) Vital areas shall not be located in the proximity of public roads.
- 2) The number of entrances and exits to/from vital areas and the protected area shall be minimized.
- 3) All emergency exits shall be equipped with sensors for intrusion detection.
- 4) In the vital areas, intrusion detection by proper sensors and by delayed intrusion through appropriate physical barriers shall be ensured.

Article 76: Communications

- 1) In order to ensure the continuous availability of the Central Alarm Station, redundancy measures shall be adopted by building and commissioning of a Secondary Alarm Station.
- 2) For detection, evaluation and response operations, independent, redundant, two-way means of communication between the guards / physical protection personnel, the Central Alarm Station and the response force shall be used.
- 3) The connection between the sensors of the detection system and the audio / video alarm display devices shall be ensured by two independent, redundant paths, including an uninterruptible power supply.
- 4) Video recordings related to physical protection shall be kept for at least 90 days in order to enable the evaluation of physical protection events / incidents.

Article 77: Availability and capability

- 1) The personnel and the equipment necessary for the detection, evaluation, delay and neutralization of the adversary shall be permanently active, 24 hours per day.
- 2) The guards / physical protection personnel and the response force shall be properly trained and equipped in accordance with the applicable legislation in force.
- 3) The authorisation holder shall ensure the patrol in the protected area.
- 4) The main functions of the patrol(s) shall be:
 - a) visual inspection of the components of the physical protection system,
 - b) supplementation of the existing physical protection measures,
 - c) intrusion detection.

Article 78: Reporting

The authorisation holder shall report to the Regulatory Authority any act of sabotage or sabotage attempt as soon as possible by telephone, and in writing, within a maximum of 24 hours.

CHAPTER V: PHYSICAL PROTECTION OF NUCLEAR MATERIAL DURING TRANSPORT

SECTION I: GENERAL REQUIREMENTS

Article 79: Common measures

In order to ensure the physical protection of nuclear material during transport, the following measures shall be taken, in accordance with the graded approach:

- a) minimize the duration of transport;
- b) minimize the number and duration of reloading operations, such as: transfer from one conveyance to another, transfer to/from transit storage places, temporary storage while awaiting the arrival of the designated conveyance, etc.;
- c) when the conveyance makes a planned stop, protect nuclear material in designated storage facility incidental to transport in a manner consistent with the protection required for the applicable category of that nuclear material;
- d) if the conveyance makes an unplanned extended stop, apply the physical protection measures appropriate for that category of material in storage to the fullest extent possible;
- e) avoid the use of predictable movement schedules by varying times and routes;
- f) predetermine the trustworthiness of individuals involved in transport operations, as prescribed in points b) and c) of paragraph 1) of article 36;
- g) limit advance knowledge of transport information to the minimum number of persons;
- h) use a material transport system with passive and/or active physical protection measures appropriate for the threat assessment or DBT.

Article 80: Information protection

- 1) The authorisation holder/licensee shall protect sensitive information relating to transport operations, including detailed information on the schedule and route, and shall disseminate such information based on the need to know basis.
- 2) The authorisation holder/licensee shall not use unnecessary markings on conveyances.
- 3) The authorisation holder/licensee shall avoid the use of open channels for transmission of messages concerning shipments of nuclear material. When a security related message is transmitted, such information shall be protected in accordance with the applicable information protection regulations.

Article 81: International shipments and transiting through Rwanda

International shipments of nuclear materials shall be authorized by the Regulatory Authority if the transit states are parties to the Convention on the Physical Protection of Nuclear Material, or have concluded an agreement with Rwanda which ensures the application of the provisions regarding physical protection

Article 83: Physical Protection Program

In regards to physical protection during transport, the licensee shall:

- 1) develop a Physical Protection Program for each transport of nuclear materials.
- 2) ensure that the Physical Protection Program for transport of nuclear materials include at least the elements specified in Annex 7 to this Regulations, and is approved by Regulatory Authority.
- 3) ensure that the modification of the Physical Protection Program is made only after the prior approval of Regulatory Authority.
- 4) Ensure that the physical protection program is periodically tested in order to assess its efficiency in case of a physical protection event / incident and the training of the guards / physical protection personnel.

Article 84: Physical protection measures

- 1) The licensee shall ensure that, packages of nuclear material is transported in closed and locked vehicles, compartments or containers except in cases requiring special security measures
- 2) The licensee shall ensure that packages weighing more than 2000 kg each that are locked or sealed may also be transported in open conveyances.
- 3) The licensee shall ensure that packages are anchored or secured in the vehicle or transport container.
- 4) The licensee shall ensure that the conveyance is specially designed to withstand an attack and prevent the theft of nuclear materials and is fitted with a locking system so that no unauthorized person can start the vehicle.
- 5) The licensee shall ensure that each shipment of nuclear material is transported in one single conveyance, in accordance with the principle of full loading.
- 6) The licensee shall ensure that a second person in the conveyance, either as a companion of the driver or as a guard, who shall be in charge with the continuous monitoring of the materials and alerting the response force when necessary.

Article 85: Physical protection personnel

In regards to physical protection personnel, the licensee shall:

- 1) ensure that appropriately equipped and trained guards escort each shipment, including before and during loading and unloading operations.
- 2) Surveillance of the route is conducted for any threat indicators and necessary response shall be initiated.
- 3) Continuous, effective surveillance of the packages or locked cargo hold, or compartment holding the packages, shall be maintained at all times, especially when the conveyance is not on move.
- 4) All personnel with physical protection responsibilities shall be provided with detailed instructions regarding their own responsibilities during transport.
- 5) The authorisation holder shall decide for the availability of response forces proportional to the prevailing threat to deal with in case of any physical protection event during transport.

Article 87: Transport Control Centre

- 1) The authorisation holder shall establish a system for real-time monitoring of the shipment.
- 2) During the transport, the authorisation holder/licensee shall establish a Transport Control Centre for the purpose of monitoring the current position and the current status of physical protection of the shipment, alerting the response force in case of an attack and maintaining continuous, secure, two-way voice communication with the conveyance, the guards, the escorts and the response force.
- 3) The Transport Control Centre shall be protected so that its functioning can continue in the presence of a threat.
- 4) While the shipment is in process, the licensee shall ensure the Transport Control Centre is staffed by appropriate personnel, whose trustworthiness has been verified.

Article 88: Communication

- 1) The licensee shall ensure that Physical protection measures include provision of continuous, two-way, voice communication systems between the conveyance, any guards accompanying the shipment, the designated response forces, and where appropriate, the consignor and the consignee.
- 2) The licensee shall ensure that the communication systems are redundant, diverse and secure.
- 3) The licensee shall ensure that the guards and/or conveyance crew are reporting to the Transport Control Centre every hour.
- 4) The licensee shall ensure that in addition, the guards and/or conveyance crew report to the Transport Control Centre at each overnight stopping place, at the place of handover of the shipment, and upon arrival at the final destination.

Article 89: Actions following the arrival of the shipment

- 1) Immediately after the arrival of the consignment, the licensee/ shall check the integrity of the packages, locks and seals.
- 2) The licensee shall notify the consignor about the receipt of the consignment, as soon as this arrives.

- 3) If the consignment does not arrive within a reasonable time after the expected date, the consignee shall immediately inform the consignor.

Articles 90: Physical protection requirements for transport of nuclear material by road

- 1) The licensee shall ensure that the physical protection of nuclear materials during transport by road is ensured by the specialized staff of the competent authority in charge with physical protection and security.
- 2) The licensee shall ensure that in order to strengthen the physical protection measures, the transport vehicle shall be escorted, depending on the situation, by at least two crews from competent authority in charge with physical protection and security.

Article 91: Physical protection requirements for transport of nuclear material by rail

- 1) The licensee shall ensure that the transport of nuclear materials by rail are carried out by a freight train or in a wagon authorized by the Regulatory Authority.
- 2) The licensee shall ensure that the shipment is escorted by one or more escorts, as well as by a specialised team of the competent authority in charge with security and physical protection, who shall travel in the nearest compartment to the wagon in which the cargo is located.
- 3) The licensee shall ensure that during the stops, all locks and seals are monitored and controlled.
- 4) The licensee shall ensure that all escorts and guards are equipped with two-way radio communication devices and telephones.

Article 92: Physical protection requirements for transport of nuclear material by water

- 1) The licensee shall ensure that the transport of nuclear materials by river or sea shall be carried out with specially arranged vessels, authorized by the Regulatory Authority in accordance with applicable regulations.
- 2) The regulations in force regarding the transport of dangerous goods by water, as well as the provisions of all applicable international treaties, conventions and agreements to which Rwanda is a party shall be observed.
- 3) The nuclear materials shall be transported in a robust compartment or container that is locked and sealed.
- 4) The locks and seals shall be regularly checked during transport.

SECTION II: REQUIREMENTS FOR TRANSPORT OF OTHER NUCLEAR MATERIALS AND OF NUCLEAR-RELATED DUAL USE ITEMS

Article 93: Physical protection of other nuclear material and of nuclear-related dual use items during transport

The licensee shall ensure that the nuclear material not falling under any of the categories prescribed in Annex 2 to this Regulation and the nuclear-related dual use items listed in Annex 1 to this Regulation are protected during transport in accordance with the prudent management practice.

Article 94: Minimal requirements for implementation of physical protection measures during transport of other nuclear material and of nuclear-related dual use items

The licensee shall ensure that the minimum physical protection measures to be implemented consist in:

- a) designation of a person responsible for the transport;
- b) keeping a strict evidence of the conveyance keys;
- c) the conveyance shall be provided with alarms and a robust locking system;
- d) the compartment where the other nuclear material and the nuclear-related dual use items are kept shall be provided with a robust locking system, with padlock and latch;
- e) the compartment where the other nuclear material and nuclear-related dual use items are kept shall be locked during the transport;
- f) the compartment where the other nuclear material and nuclear-related dual use items are kept shall be provided with adequate grips/containers;
- g) immediate notification of the Regulatory Authority in case of theft or loss of the materials and items being transported.

SECTION III: ADDITIONAL REQUIREMENTS FOR INTERNATIONAL SHIPMENTS OF NUCLEAR MATERIAL

Article 95: Specific arrangements

The licensee shall ensure that contract or agreement between the consignor and the consignee clearly specify when or where the responsibility for physical protection of the nuclear material is transferred from the consignor to the consignee.

Article 96: Notification to the Regulatory Authority for international shipments

In the case of international shipments of nuclear material transiting Rwanda territory, the authorisation holder/licensee shall notify the Regulatory Authority about the date and place of entry and exit of the nuclear materials and the characteristics of the shipment.

SECTION IV: REQUIREMENTS FOR PHYSICAL PROTECTION OF NUCLEAR MATERIAL AGAINST SABOTAGE DURING TRANSPORT

Article 97: Integration of safety and physical protection

The authorisation holder shall consider the safety features of the design of transport package, container and conveyance while deciding additional physical protection measures for protection of the material against sabotage.

Article 98: Additional measures for physical protection against sabotage

- 1) The authorisation holder licensee shall identify and implement additional physical protection measures to prevent sabotage of nuclear material during transport, based on the DBT document or, as the case may be, the threat assessment, as well as the potential radiological consequences of a sabotage.
- 2) The additional physical protection measures referred to in paragraph 1) shall be included in the Physical Protection Plan and the Contingency Plan.

Article 99: Instruction

- 1) The authorisation holder shall instruct the carrier in good time in order to ensure its participation in the application of the physical protection measures.
- 2) The carrier shall ensure that its personnel is trained and instructed to act in full coordination with the response force in the event of an act of sabotage or attempted sabotage on the transport of nuclear materials.

Article 100: Measures to mitigate or minimize the radiological consequences of sabotage during transport

- 1) The authorisation holder/licensee shall assess, on detection of a sabotage or sabotage attempt, whether this act could lead to radiological consequences, and shall take the appropriate response measures specified in the Contingency Plan.
- 2) The authorisation holder shall report to the Regulatory Authority any act of sabotage or sabotage attempt related to the transport of nuclear materials, as soon as possible by telephone, and in writing, within maximum of 24 hours.

CHAPTER VI: FINAL PROVISIONS

Article 101: Repealing provision

All other prior provisions contrary to this regulation are hereby repealed.

Article 102: Commencement

This regulation comes into force on the date of its signature by the Chairperson of Regulatory Board.

Kigali on,/..... /2023

DRAFT

ANNEX I: GENERIC LIST OF NUCLEAR-RELATED DUAL USE ITEMS

1. Nuclear reactors and specially designed or prepared equipment and components therefor;
2. Plants for the separation of isotopes of natural uranium, depleted uranium or special fissile materials, and specially designed or prepared equipment and components therefor;
3. Specially designed or prepared auxiliary systems, equipment and components for isotope separation plants, as above specified, made of or protected by materials resistant to corrosion by UF₆;
4. Plants for the conversion of uranium and equipment specially designed or prepared therefor;
5. Plants for the production or concentration of heavy water, deuterium and deuterium compounds and specially designed or prepared equipment and components therefor;
6. Plants specially designed for the fabrication of nuclear reactor fuel elements and specially designed or prepared equipment therefor;
7. Plants for the reprocessing of irradiated nuclear reactor fuel elements, and specially designed or prepared equipment and components therefor;
8. Plants for the conversion of plutonium and equipment specially designed or prepared therefor;
9. Natural uranium or depleted uranium or thorium in the form of metal, alloy, chemical compound or concentrate and any other material containing one or more of the foregoing;
10. Special fissile materials;
11. Deuterium, heavy water (deuterium oxide) and other compounds of deuterium, and mixtures and solutions containing deuterium, in which the isotopic ratio of deuterium to hydrogen exceeds 1:5 000;
12. Graphite having a purity level better than 5 parts per million boron equivalent and with a density greater than 1,50 g/cm³ for use in a nuclear reactor, in quantities exceeding 1 kg;
13. Specially prepared compounds or powders for the manufacture of gaseous diffusion barriers, resistant to corrosion by UF₆ (e.g. nickel or alloys containing 60% by weight or more nickel, aluminum oxide and fully fluorinated hydrocarbon polymers), having a purity of 99,9% by weight or more and a particle size less than 10 µm measured by ASTM B330 standard and a high degree of particle size uniformity;
14. Software specially designed or modified for the development, production or use of goods specified in this Annex;
15. Technology for the development, production or use of goods specified in this Annex;

Notes:

1. For the purposes of this Annex, the following definitions shall apply:
 - a. “nuclear reactor” means a complete reactor capable of operation so as to maintain a controlled self-sustaining fission chain reaction, including all the items within or attached directly to the reactor vessel, the equipment which controls the level of power in the core, and the components which normally contain, come into direct contact with or control the primary coolant of the reactor core;
 - b. “special fissile material” means plutonium-239, uranium-233, uranium enriched in the isotopes 235 or 233, and any material containing the foregoing;

- c. “material resistant to corrosion by UF₆ include copper, copper alloys, stainless steel, aluminium, aluminium oxide, aluminium alloys, nickel or alloys containing 60% or more nickel by weight and fluorinated hydrocarbon polymers;
 - d. “software” means a collection of one or more programs or microprograms fixed in any tangible medium of expression;
 - e. “development” is related to all phases prior to serial production, such as: design, design research, design analyses, design concepts, assembly and testing of prototypes, pilot production schemes, design data, process of transforming design data into a product, configuration design, integration design, layouts;
 - f. “production” means all production phases, such as:” construction, production engineering, manufacture, integration, assembly (mounting), inspection, testing, quality assurance;
 - g. “use” means operation, installation (including on-site installation), maintenance (checking), repair, overhaul and refurbishing;
 - h. “technology” means specific information necessary for the development, production or use of goods; the term includes technical data (blueprints, plans, diagrams, models, formulae, tables, engineering design and specifications, manuals and instruction written or recorded on other media or devices such as disk, tape, read-only memories) and technical assistance (instructions, skills, training, working knowledge and consulting services and may involve the transfer of technical data)
2. Goods specified in this Annex include both new and used goods.
3. The detailed list of nuclear-related dual use items shall be further developed by the Regulatory Authority.

ANNEX II: CATEGORISATION OF NUCLEAR MATERIALS

Material	Form	Category I	Category II	Category III^c
Plutonium	Unirradiated	2 kg or more	Less than 2 kg, but more than 500 g	500 g or less, but more than 15 g
Uranium-235	Unirradiated - Uranium enriched to 20% U-235 or more - Uranium enriched to 10% U-235 or more, but less than 20% - Uranium enriched above the natural concentration of U-235, but less than 10%	5 kg or more	Less than 5 kg but more than 1 kg 10 kg or more	1 kg or less, but more than 15 g Less than 10 kg, but more than 1 kg 10 kg or more
Uranium-233	Unirradiated	2 kg or more	Less than 2 kg, but more than 500 g	500 g or less, but more than 15 g
Irradiated fuel			Depleted or natural uranium, thorium or low enriched fuel (less than 10% fissile content)	

Notes:

- a. All plutonium except that with isotopic concentration exceeding 80% in Pu-238
- b. Material not irradiated in a reactor or material irradiated in a reactor but with a radiation level equal or less than 1 Gy/h at 1 m, unshielded
- c. Quantities not falling in category 3 and natural uranium, depleted uranium and thorium should be protected in accordance with prudent management practice
- d. Other fuel which by virtue of its original fissile material content is classified as Category I or II before irradiation may be reduced one category level while the radiation level from the fuel exceeds 1 Gy/h at 1 m, unshielded

**ANNEX III: CONTENT OF THE APPLICATION FOR AUTHORISATION TO
PROVIDE SERVICES FOR PHYSICAL PROTECTION OF NUCLEAR
INSTALLATIONS**

1. Details regarding the applicant:
 - a. Name of applicant:
 - b. Office address:
 - c. Phone:
 - d. Fax :
 - e. Unique registration code :
 - f. Fiscal number:
 - g. Serial number in the Trade Register:
2. Data about the working point(s): address, telephone, fax
3. A copy / model of the contract with the authorisation holder
4. The person responsible for physical protection at the contracting installation: name, surname, job/position/qualification, telephone / mobile, e-mail
5. Copy of the Certificate of Registration with the Trade Register
6. Copy of operating license
7. List of security personnel at the contracting installation, with: names, surnames, identity card numbers, home address, if armed or unarmed personnel
8. Copy of the Physical Protection Plan approved by the competent authority
9. Copy of the police approval regarding the equipment of the guards/physical protection personnel
10. Copy of the physical training plan of the security personnel
11. The technical training plan of the security personnel (in original, for approval by the Regulatory Authority), in accordance with the relevant provisions of the Regulations on the requirements for the qualification of the security personnel
12. Copies of the certificates issued by the competent authority for the security personnel
13. Copies of the permits issued by the competent authority for the security personnel equipped with firearms
14. Copies of the education certificates (studies' diplomas) of the security personnel
15. The medical records of the security personnel, which shall contain the following:
 - a. The aptitude file, signed and stamped by an occupational health doctor, stating that the security personnel are fit for the job;
 - b. The medical file, signed by an occupational health doctor and by specialised medical doctors, stating that the security personnel have normal sight and hearing, are psychologically and psychiatrically fit, there are no medical contraindications for participating in the physical training program and there is no history of alcohol or drugs abuse;
 - c. The medical certificate on emotional stability for the security personnel equipped with firearms, signed by a psychologist and a psychiatrist medical doctor;
16. A copy of the approval issued by the competent authority for personnel carrying out activities at vital working points in nuclear installations or who have access to classified information (if applicable)

**ANNEX IV: CONTENT OF THE APPLICATION FOR AUTHORIZATION TO DESIGN
PHYSICAL PROTECTION SYSTEMS FOR NUCLEAR INSTALLATIONS**

1. Details regarding the applicant:
 - a. Name of applicant:
 - b. Office address:
 - c. Phone:
 - d. Fax :
 - e. Unique registration code :
 - f. Fiscal number:
 - g. Serial number in the Trade Register:
2. Data about the working point(s) – if available: address, telephone, fax
3. List of (types of) nuclear installations for which a design authorisation is required
4. The person responsible for the activity of designing physical protection systems for nuclear installations: name, surname, job/position/qualification, telephone / mobile, e-mail
5. Copy of the Certificate of Registration with the Trade Register
6. List of the personnel (to be) involved in the design activities: names, surnames, job/position/qualifications, identity card numbers, unique identification numbers
7. Copy of the approvals issued by the Police Inspectorate for the personnel carrying out security systems design activities
8. The annual technical training and development plan of the personnel
9. Copies of the studies' diplomas and certificates of graduation / qualification / specialisation proving the professional qualification of the personnel
10. A list of procedures used by the applicant in the design of physical protection systems for nuclear installation
11. Copies of the approvals issued by the competent authority for the personnel carrying out activities in vital working points within nuclear installations or who have access to classified information
12. Brief presentation of the system which ensures the adequate protection of the information related to the physical protection systems of the nuclear installations, to which the applicant has access, as well as of the information generated by the design activities

ANNEX V: CONTENT OF THE APPLICATION FOR AUTHORIZATION OF OTHER SERVICES FOR PHYSICAL PROTECTION SYSTEMS OF NUCLEAR INSTALLATIONS

1. Details regarding the applicant:
 - a. Name of applicant:
 - b. Office address:
 - c. Phone:
 - d. Fax :
 - e. Unique registration code :
 - f. Fiscal number:
 - g. Serial number in the Trade Register:
2. Data about the working point(s) – if available: address, telephone, fax
3. List of services for the physical protection systems of nuclear installations for which an authorisation is required
4. The person responsible for the intended service: name, surname, job/position/qualification, telephone / mobile, e-mail
5. Copy of the Certificate of Registration with the Trade Register
6. List of the personnel (to be) involved in the service activities: names, surnames, job/position/qualifications, identity card numbers, unique identification numbers
7. The annual technical training and development plan of the personnel
8. Copies of the studies' diplomas and certificates of graduation / qualification / specialisation proving the professional qualification of the personnel
9. A list of procedures used by the applicant in the intended services for the physical protection systems of nuclear installation
10. Copies of the approvals issued by the competent authority for the personnel carrying out activities in vital working points within nuclear installations or who have access to classified information
11. Brief presentation of the system which ensures the adequate protection of the information related to the physical protection systems of the nuclear installations, to which the applicant has access, as well as of the information generated by the design activities

ANNEX VI: CONTENT OF THE PHYSICAL PROTECTION PROGRAM FOR NUCLEAR MATERIALS AND INSTALLATIONS

1. Purpose
2. Objectives
3. Scope
4. General information:
 - a. General description of the nuclear installation
 - b. The layout of the installation
 - c. A map of the surrounding areas
 - d. Description of nuclear materials / installations
 - e. The organizations that will ensure the physical protection of the installation, specifying their responsibilities, organizational structure, qualification of the physical protection personnel, endowment of the physical protection personnel
 - f. Testing and evaluation of the Physical Protection Program
 - g. Sustainability Program for the physical protection system
 - h. Details on the promotion of the security culture
 - i. Details on the organizational measures and documents of the integrated management system implemented for the physical protection of nuclear materials and installations
 - j. Verification of the physical protection personnel, as appropriate
 - k. Physical protection personnel training plan
 - l. Periodic review and revision of the Physical Protection Program
 - m. The procedure for notification of the Regulatory Authority in case of a physical protection event
5. Physical protection system:
 - a. A description of the physical protection system, respectively of the technical and administrative measures
 - b. The equipment and devices that are part of the physical protection system
 - c. The design of the physical protection system
 - d. Testing and evaluation of the physical protection system
 - e. Maintenance of the physical protection system
 - f. Compensatory measures.
6. The Physical Protection Plan endorsed by the competent authority in charge with physical protection and security, which shall include the following:
 - a. Description of materials and installations to be protected
 - b. Access rules in the installation
 - c. Description of the technical means of physical protection and alarming, the required number of guards, the number of posts and their location, the code of the posts, the cooperation with other institutions, the mode of action in different situations
 - d. Notification of physical protection events / incidents
 - e. Means of communication of guards
 - f. Guards' equipment
 - g. The layout of the installation showing the exact location of the materials and installations to be guarded.

7. The Contingency Plan, which shall include the following:
 - a. The roles and responsibilities in case of a physical protection event / incident
 - b. Criteria for the implementation of the contingency plan
 - c. Response planning and description of how to respond to various physical protection events / incidents
 - d. Details of arrangements for response to physical protection events / incidents
 - e. Details of arrangements for minimizing and mitigating consequences in the event of physical protection events / incidents
 - f. Details of actions taken to recover the nuclear materials / installations
 - g. Details on how to ensure command, control and communication during a physical protection event / incident.
8. Cyber security plan – to be developed in accordance with the provisions of the [*Regulation on the protection of nuclear installations against cyber threats*]
9. Information management:
 - a. Information protection
 - b. Records
 - c. Confidentiality
10. Interface of physical protection with nuclear safety, radiation protection, nuclear material accountancy and control, preparedness and response to nuclear / radiological emergencies
11. List of applicable procedures, such as for the development, evaluation and testing of the Physical Protection Program, control of access to the protected facility, testing, evaluation and maintenance of the physical protection system, notification of physical protection events, training of physical protection personnel

ANNEX VII: CONTENT OF THE PHYSICAL PROTECTION PROGRAM FOR TRANSPORT OF NUCLEAR MATERIALS

1. Purpose
2. Objectives
3. Scope
4. General information:
 - a. Description of the nuclear materials to be transported
 - b. Details of the conveyance used for transport of nuclear materials
 - c. Description of the equipment and devices for physical protection of the conveyance, including for continuous monitoring of the conveyance and the communication means
 - d. Responsibilities of the organizations involved in the transport, with their organizational structure, qualification of the guards / physical protection personnel, the equipment available to such personnel, including the responsibilities of the consignor and the consignee
 - e. The results of trustworthiness checks of the personnel involved in the physical protection of transport, as appropriate
 - f. Training program for the personnel involved in the physical protection of transport
 - g. Details about the maintenance of the conveyance, the equipment and devices for physical protection and the communication means
 - h. Details on the organizational measures and documents of the management system applicable to the transport of nuclear materials
 - i. Regulatory Authority notification procedure in case of a physical protection event
 - j. Details on promotion of nuclear security culture
 - k. Testing and evaluation of the Physical Protection Program
 - l. Periodic review and revision of the Physical Protection Program
5. The Physical Protection Plan endorsed by the competent authority for physical protection and security, which shall include the following:
 - a. Description of materials to be protected during transport
 - b. General details of transport, including duration, mode of transport, consignor, consignee, carrier, escort (if applicable), conveyance, back-up conveyance (if applicable), route, alternative routes, planned stops (if applicable), points for transfer of responsibility, etc.
 - c. Equipment and devices for ensuring the physical protection of the conveyance, including for monitoring
 - d. Description of the technical means of physical protection and alarming, the required number of guards, the number of posts and their location, the code of the posts, the cooperation with other institutions, the mode of action in different situations
 - e. Additional measures for the physical protection of the transport, such as: communication at predetermined time intervals, checking the conveyance before loading, written instructions, etc.
 - f. Notification of physical protection events
 - g. The equipment of the guards
 - h. The equipment of the escort, if applicable
 - i. Communication means
 - j. A map with the main route and a map with the alternative routes

6. The Contingency Plan that shall include the following:
 - a. Description of roles and responsibilities in case of a physical protection event / incident
 - b. Criteria for the implementation of the contingency plan
 - c. Response planning and description of how to respond to various physical protection events / incidents
 - d. Details about the response arrangements
 - e. Details about the established arrangements for minimization and mitigation of physical protection events / incidents' consequences
 - f. Details about the actions to be taken in order to recover the nuclear materials
 - g. Details about the organisation of the response (establishing the command, control and communication during a physical protection event / incident)
7. Information management
 - a. Information protection
 - b. Records
 - c. Confidentiality
8. List of applicable procedures, such as for evaluation and testing the Physical Protection Program, testing and maintenance of the conveyances, testing and maintenance of communication means and of equipment and devices providing physical protection, transfer of responsibility, staff training, notification of physical protection events, etc.

ANNEX VIII: PHYSICAL PROTECTION EVENTS

1. Any attempt or actual unauthorized removal, loss or unauthorized movement of nuclear material, whether involving external adversaries or insiders;
 2. Any attempt or actual unauthorised use of nuclear materials;
 3. Any attempt or actual act of sabotage of nuclear installation or nuclear materials' transport, including tampering or interference with vital area equipment, systems or devices;
 4. Any attempt or actual cyber-attack of the nuclear installation;
 5. Discovery of a suspect device or an explosive device in the proximity of nuclear materials/installations;
 6. Any confirmed discrepancy in the nuclear material accounting records;
 7. Any event that may indicate planning a sabotage, theft or unauthorised removal of nuclear material;
 8. Actual or attempted intrusion into the facility or into a limited access area, protected area, or vital area;
 9. Any failure or malfunctioning of physical protection equipment or physical protection system component(s) leading to loss of physical protection system's function(s);
 10. Compromise or attempted compromise of digital computers, communication systems and networks used for physical protection and safety;
 11. Loss or unauthorized disclosure of sensitive information;
 12. Any other event with potential implications over the physical protection of nuclear materials/installations, such as:
 - a. strikes,
 - b. threats from an employee,
 - c. non-compliance with the approved physical protection procedures,
 - d. unapproved modification of physical protection measures / physical protection system,
 - e. loss of power supply of the components of the physical protection system,
 - f. intentional / unintentional compromise of the components of the physical protection system,
 - g. etc.
-
- A. The events listed in points 1-6 represents incidents that shall be immediately notified to the Regulatory Authority, investigated and reported
 - B. The events listed in points 1-11 shall be notified in written and reported to the Regulatory Authority
 - C. The events listed in point 12 shall be investigated