

REPUBLIC OF SUDAN
SUDANESE NUCLEAR AND RADIOLOGICAL REGULATORY AUTHORITY



THE NUCLEAR AND RADIOLOGICAL (REGULATORY CONTROL) ACT,
2017

In the Name of Allah, the Gracious, the Merciful,
The Nuclear and Radiological (Regulatory Control) Act, 2017

Be it hereby passed, by the National Assembly, and assented to, by the President of the Republic, in accordance with the provisions of the Interim National Constitution of the Sudan, 2005, the following Act:-

Chapter I

Preliminary Provisions

Title and Commencement

1. This Act may be cited as the, “Nuclear and Radiological (Regulatory Control) Act, 2017”, and shall come into force, as of the date of signature.

Repeal

2. The Ionizing Radiations (Organization of Use) Act, 1971, shall be repealed.

Application, exclusion and provisions of this Act to prevail

- 3.(1) The provisions of this Act shall apply to:-
 - (a) safety, security and safeguards for all facilities, nuclear material, radiation sources, and all activities of peaceful uses of nuclear energy and radiological technology in the Sudan;
 - (b) civil liability for nuclear injuries.
- (2) There shall be excluded from the provisions of Sub-section (1), such activities or practices involving exposure to ionizing radiation, which have been excluded from regulatory control under regulations made, in accordance with the provisions of this Act.

- (3) The provisions of this Act, in case of inconsistency, with the provisions of any other law, shall prevail, to the extent of removing such inconsistency.

Interpretation

4. In this Act, unless the context otherwise requires:–

"Accident ", means any unintended event, including operation errors, equipment break downs and otherwise events, that has or may have consequences that cannot be ignored, as to the protection and safety;

"Activities", means designing or manufacturing, constructing, importing, exporting, distributing, selling, borrowing, authorizing, using, applying, maintenance, repairing, transferring, commissioning or Decommissioning radiation or nuclear facilities, or possessing radiation sources for industrial, educational, agricultural or medical purposes, or transporting Radioactive Materials or mining and possessing radioactive raw materials or closing the related facilities, or cleaning the sites affected by residuals of previous activities or radioactive waste management activities;

"Agency", means the International Atomic Energy Agency.

"Authority", means the Sudanese Nuclear and Radiological Regulatory Authority established under the provisions of Section 5(1);

"Authorization",	means granting the Operator a written permission by the Authority to perform specified activities, and it includes licensing, registration, permit, approval or certification;
"Authorized person",	means the person bearing the comprehensive administrative responsibilities, including the responsibility of regulatory control, in the installation or during transportation and preservation of the materials registered in his name, and which were subject to regulatory control, and he has the power on the personnel thereof;
"Board",	means the Board of the Authority, established under the provisions of Section 7(1);
"Chairman",	means the Chairman of the Board provided for in Section 7(1);
"Clearance",	means removal of Radioactive Materials or objects listed under the authorized practices, from any further regulatory control by the Authority;
"Commissioning",	means the process by which, the systems and components of facilities and activities, after been constructed, are made operational and verified to be in accordance with the design and to have met the required performance criteria.
"Competent Minister",	means the Competent Minister, assigned by the President of the Republic to supervise the Authority, other than from the ministers

supervising the bodies using or promoting nuclear or radiological technology;

"Damage", means the harm resulting from nuclear or radiation properties, mixture of the same with toxic or explosive properties or other hazardous properties of a radiation source, incurred by a person and causing him or his descendants permanent or temporary disability, leading to loss of life, or causing him direct or indirect physical or economical damage, or causing environmental damage or destruction to the properties, including the costs of restitution to the original state and the costs of damage avoidance measures;

"Decommissioning", means the administrative and technical proceedings, as may be taken to remove all or part of the regulatory control imposed on a facility;

"Discharge", means a planned release of Radioactive Materials to the environment;

"Disposal", means placing the radioactive waste in an appropriate facility without the intention of retrieving thereof;

"Emergency", means a non-routine situation that necessitates prompt action, aiming at mitigating any hazard or adverse consequences to human health, safety, quality of life, property or the environment;

"Emergency plan", means a description of objectives, policy and the concept of operations pertaining to response to a state of emergency and to the chart, the powers and responsibilities necessary to responding to the same in a systematic, coordinated and effective way;

"Emergency Response", means taking actions to mitigate the consequences of an emergency on human health and safety, quality of life, property and the environment;

"Exemption", means the decision issued by the Authority, that the source or a practice shall not be subject to part or all aspects of regulatory control, on the basis that, exposure including likely exposure to such source or such practice is too small to a degree that does not necessitate application of the regulatory control aspects, or because that, this is the optimum option irrespective of the actual level of the doses or the risks;

"Extended closure", mean the administrative and technical proceedings taken at a radioactive waste repository at the end of its operational lifetime, as covering the waste, backfilling, or sealing, and the terminating and completing the activities in any buildings having connection;

"Facility", means any of the nuclear, irradiation, mining and raw materials processing facilities and radioactive waste

management facilities; and any other places wherein Radioactive Materials are produced, processed, used, handled, stored or disposed of, or wherein radiation generators are or will be installed, where the activity of such facilities or places are of such scope where consideration to protection and safety are required;

"General Secretariat ", means General Secretariat of the Authority, provided for in Section 14;

"Inspection", means examination, observation, measurement or test undertaken to assess the structures, systems, components and materials, as well as the procedure and operational activities, the technical and organizational process, and personnel competence;

"Inspector", means any of the inspectors referred to in Section 17(1);

"Intervention", means any action targeting limitation of or avoidance of exposure or limitation of the likelihood of exposure to sources not constituting part of a controlled practice or sources that are out of control as a result of an accident.

"Management system", means a set of interrelated or interacting elements for establishing policies and objectives and enabling the objectives to be achieved in an efficient and effective manner;

"Minister", means the Minister of Finance and Economic Planning;

- "Notification",** means any document submitted by a person to notify the Authority of his intention to carry out a practice or any other use of a source;
- "Nuclear accident",** means any accident connected with facilities or activities from which a release of Radioactive Materials may occur or is likely to occur; and which has resulted or may result in an international trans-boundary radiological release, that could be of radiological safety significance for another State;
- "Nuclear damage",** means any injury or loss of life, any loss or damage to property as may arise out of the nuclear and radioactive properties or the mixture of radioactive properties with the toxic, explosive or other hazardous properties of the nuclear fuel or the radioactive waste, or of the nuclear materials resulting from or out of nuclear installation, or sent thereto;
- "Nuclear fuel",** means a fissionable nuclear material in the form of fabricated elements for loading into the reactor core of a civil nuclear power plant or a civil research reactor;
- "Nuclear fuel cycle",** means all the operations associated with production of the nuclear energy;
- "Nuclear material",** means the Plutonium, save for that with isotopic concentration exceeding 80% in plutonium-238; uranium-233; uranium enriched in the isotope 235 or 233; uranium containing the mixture of

isotopes as occurring in the natural environment; save for that in the form of ore or ore residues; and any material containing one or more of the aforementioned contents ;

"Nuclear installation", means a nuclear fuel fabrication plant, research reactor, nuclear power plant, spent fuel storage facility, enrichment plants or reprocessing facilities;

"Operational limits and conditions", means a set of rules setting the parameter limits, the functional capability and performance levels of equipment and personnel, as the Authority may approve for the safe operation of the Authorized facility;

"Operator", means any person applying for Authorization, or authorized or responsible for nuclear, radiation, radioactive waste or transport safety; when undertaking activities in relation to any facility or radiation source; including mediators, individuals, governmental bodies, carriers, hospitals, and self-employed persons,

"Orphan source", means a radioactive source which is not subject to regulatory control, either because it has never been subjected regulatory control, or because it has been abandoned, lost, stolen, misplaced or otherwise transferred without Authorization;

- "Package",** means the packaging, with its contents of radioactive, nuclear materials or radioactive waste, as prepared for transportation;
- "Packaging",** means the packaging designed to completely enclose the Radioactive Materials;
- "Physical protection",** means measures for the protection of nuclear materials and the Authorized facilities, as to prevent unauthorized access or transportation thereof, or sabotaging the same;
- "Practice",** means any human activity, that introduces additional sources of radiation exposure or additional pathways thereof, or extends the range thereof, to include additional persons, or modifies the network of exposure pathways which are resulting from the existing sources, in a way that increases exposure, or increases the probability of human exposure or the number of persons exposed;
- "Preparedness",** means the capability of taking actions, as may effectively mitigate the consequences of an emergency on human health and safety, and on the quality of life, property and the environment;
- "Protection",** means protecting the individuals from the effects of exposure to ionizing radiation, and the means to achieve such protection;

- "Radiation",** means the electromagnetic radiation or particles capable of producing ion pairs in a material;
- "Radiation dose",** means a measure of the energy deposited by radiation in a target;
- "Radiation protection officer",** means the person technically competent in radiation protection matters, relevant to a specific type of practices, authorized by the Authority and designated by the licensee to supervise application of the requirements having connection, in accordance with the safety standards approved by the Authority;
- "Radiation source",** means anything as may cause radiation exposure, whether through emitting ionizing radiation or by releasing Radioactive Materials; and can be treated as a single entity for the purposes of protection and safety;
- "Radioactive material",** means the material designated in this Act, or by the Authority as being subject to regulatory control by reason of its radioactivity;
- "Radioactive source",** means a radioactive material which is permanently sealed in a capsule or tightly fastened, in a solid form, and is not exempted from regulatory control; this shall also include, any radioactive material leaked from the source, and does not include, the material placed in capsules for the purpose of disposing

thereof, or the nuclear materials within the nuclear fuel cycles of research reactors;

"Radioactive waste", means any material, whatever its physical form, remaining from practices or activities or interventions that contains or is contaminated with radioactive material, and has radioactivity or radioactivity concentration, that exceeds the clearance levels as the Authority may have specified;

"Research reactor", means any nuclear reactor used to generate neutron flux and ionizing radiation for the purposes of research or for other purposes; this shall include experimental facilities associated with the reactor and storage, handling and treatment facilities of Radioactive Materials, as may be located at the same site, and directly related to the safe operation of the Research reactor, it shall also include critical assemblies;

"Sabotage", means any deliberate act directed against a facility or nuclear materials in use or storage or transportation and may directly or indirectly endanger the health and security of personnel, the public or the environment as a result of exposure to radiation or release of Radioactive Materials;

"Safeguards", means measures taken to verify that, nuclear technology is utilized within the State, for peaceful use only;

"Safeguards agreement", means the Safeguards Agreement signed between the Sudan and the Agency for the application of the Safeguards in connection with the treaty on the non-proliferation of nuclear weapon, and any protocol connected therewith, where the Sudan is party therein;

"Safety", means providing the sound operating conditions, preventing emergencies or mitigating the consequences thereof, as may result in protection of workers, the public and the environment from radiation hazards;

"Safety assessment", means assessing all aspects of a practice having connection with protection and safety; and for a facility, this includes specifying the site, design and operation of the facility;

"Safety culture", means the collection of certain characteristics and attitudes in which establishes that the protection and safety issues receive the attention it deserves, as to the significance thereof, and that it have extreme priority;

"Secretary General", means the Secretary General of the Authority appointed under the provisions of Section 15(1);

"Security", means detection and prevention of theft of nuclear materials or Radioactive

Materials, unlawful storing, unauthorized access, unlawful transportation, or the other malicious acts towards such materials or the facilities associated therewith, and responding to such actions;

"Source", means radiation source, or radioactive source, or Orphan source;

"Spent fuel", means nuclear fuel removed from a reactor and is no longer usable in its present form because of depletion of the fissile material, poison build up or occurrence of a radiation damage;

"Threat assessment", means the process analyzing systematically the hazards associated with the facilities or the activities inside or outside the Sudan, in order to identify:-

(a) such events and the areas associated therewith, where the necessity may require protective actions to be taken in respect thereof, inside the Sudan;

(b) the actions that might be effective in mitigating the consequences of such emergencies;

Chapter II

The Authority, the Board and the General Secretariate Establishment, headquarters and composition of the Authority

5. (1) There shall be established, an Authority to be called, "The Sudanese Nuclear and Radiological Regulatory Authority", it shall be a regulatory control authority, which is effectively independent from the institutions or bodies specialized in the nuclear and radiological technology development, the peaceful use or promotion thereof; it shall have a corporate personality, a common seal, the right to litigate on its own behalf, and enjoy a financial and administrative independence in discharging the tasks thereof.
- (2) The headquarters of the Authority shall be at the National Capital, and it may establish branches or offices in other states;
- (3) The Authority shall be composed of a Board of Directors and a General Secretariate.
- (4) The Authority shall be the focal point authorized by the state regarding implementation of the international and regional conventions, treaties, and protocols having connection with security, safety and the safeguards agreement.

Functions and powers of the Authority

6. The Authority shall establish the regulatory framework to regulate the facilities, activities and practices in the fields of peaceful use and application of nuclear energy, in a manner as to ensure protection of individuals, property and the environment, from the current and future hazards thereof; and in order to achieve the same, it shall have the following functions and powers, to:–
 - (a) take the necessary measures to implement the provisions of this Act, regulations, standards and technical guides

- issued thereunder, to ensure protection of the individuals and environment from the harmful effects of radiation;
- (b) monitor and regulatory control of the justified peaceful uses of nuclear energy, to ensure the safety and security of the radiation sources, nuclear materials and radioactive waste;**
 - (c) establish a regulatory control system on the facilities and activities;**
 - (d) issue, renew, amend, suspend and revoke the Authorization for the :-**
 - (i) facilities, activities and practices, except the Nuclear reactors, save with the permission of the President of the Republic;**
 - (ii) bodies that render the services of radiation protection, analysis, standardization, and evaluation of the environmental effects and training in the field of safety and security;**
 - (iii) workers in the field of radiation, officers and experts in radiation protection, safety and security, in accordance with the regulations made under this Act.**
 - (e) lay down the safety general policy, and submit the same to be passed by the Council of Ministers for approval;**
 - (f) issue a strategy for the control or the prompt regain control over the orphan sources;**
 - (g) lay down a national policy and long-term strategy of radioactive waste and spent nuclear fuel management, and submit the same to the Council of Ministers;**
 - (h) seek the help of experts and consultants to render consultancy or assistance in implementing the functions and powers thereof;**
 - (i) obtain information, documents and views from international and national organizations or bodies, as may be necessary and appropriate for the discharge of its tasks;**

- (j) lay down suitable mechanisms and procedure, for informing and consulting the public and all the stakeholders with regard to the regulatory process, and the safety, health and environment issues in the activities and practices subject to regulatory control, including the accidents and abnormal incidents;**
- (k) cooperate with the competent governmental and non-governmental bodies in the field of health, safety, environment protection, security and transportation of radioactive and nuclear materials;**
- (l) exchange information and cooperate with the regulatory bodies in other states and the international organizations having connection with the issues arising out of exercising the functions and powers thereof;**
- (m) determine the cases exempted from regulatory control;**
- (n) Conduct the necessary research to execute the functions and powers thereof, with regard to safety and security, and encourage scientific research in the field of safety and security for regulatory purposes;**
- (o) establish a national register for inventory and control the radiation sources and nuclear materials;**
- (p) establish a national register of the persons Authorized to conduct activities, or practices under this Act, and continuously update the same;**
- (q) own immovable and movable property;**
- (r) appointment at the General Secretariate, such workers as they may deem necessary;**
- (s) levy licence and Authorization fees, by approval of the Ministry of Finance and Economic Planning, in accordance with what the regulations may specify;**
- (t) impose administrative sanctions, resulting from non-compliance of the operators or Authorized persons, with the regulatory requirements;**

- (u) any other functions or powers, as may be necessary for the implementation of the provisions of this Act.

Establishment, composition and responsibilities of the Board

7.(1) There shall be established a Board of the Authority, to assume administration of the affairs thereof, the Board shall be composed by a decision of the Council of Ministers, upon recommendation of the Minister, of a Chairman, a Secretary General as a member and rapporteur, eight members of competency and expertise and know-how of the nuclear or radiological sciences and the applications thereof, and members representing the following bodies:—

- (a) Ministry of Finance and Economic Planning;
 - (b) Ministry of Justice;
 - (c) Ministry of Interior;
 - (d) Ministry of Foreign Affairs;
 - (e) Ministry of Defense;
 - (f) Ministry of Environment, Forestry and physical Development;
 - (g) The Ministry of Transport, Roads and Bridges;
 - (h) Ministry of Health;
 - (i) Ministry of Science, Communications and Information Technology;
 - (j) Ministry of Higher Education and Scientific Research;
 - (k) Ministry of Water Resources, Irrigation and Electricity;
 - (l) Ministry of Oil and Gas;
 - (m) Ministry of Minerals;
 - (n) Civil Defense General Directorate;
 - (o) The National Security Organ.
- (2) The term of the Board shall be four years; renewable for all or any of the members thereof.

- (3) The Council of Ministers, shall fix the remuneration of the Chairman and members of the Board.
- (4) The Board shall operate under supervision of the Competent Minister; and the same may issue general instructions thereto.

Terms of membership

8. There shall be required, of the Board member, the following: –
 - (a) that he shall be:-
 - (i) Sudanese;
 - (ii) of full capacity;
 - (iii) of good behavior and reputation.
 - (b) the personal interests thereof, shall not conflict with the powers and functions conferred on the Authority and the Board;
 - (c) not have been convicted of an offence affecting honor or honesty.

Secrecy of information

9. The Chairman and members of the Board, throughout the term of their membership, and thereafter, shall, refrain from disclosing or revealing, without approval of the Board, any information, classified secret by the Board, which they have perused by virtue of their offices.

Vacancy of office of the Board Member

- 10.(1) There shall fall vacant, the office of a member of the Board, for any of the following reasons:–
 - (a) loss of any of the of membership terms, provided for in Section 8;
 - (b) acceptance of the written resignation thereof;
 - (c) absence from attending three consecutive meetings, without permission or an acceptable excuse;
 - (d) contravention of the provisions of Section 12;

- (e) death.
- (2) In case of the office falling vacant, it shall be filled by another member, in the same manner as the appointment was made.

The Board meetings

- 11.(1) The Board shall periodically convene, once every month, and may hold emergent meetings, upon a call, by the Chairman thereof, or at the request of two-thirds of the members thereof, wherever the same is necessary.
- (2) The quorum, for meetings of the Board, shall be constituted the attendance of more than half the members.
- (3) Decisions of the Board shall be passed, by majority of votes of the members present, and upon equality of votes, the Chairman shall have a casting vote.
- (4) The Board may invite, to attend the meetings thereof, whoever they deem necessary, to make use of their expertise; without the same having the right to vote.

Disclosure of interest

- 12. Every member of the Board, who may have direct or indirect interest in any matter or proposal tabled before the Board for consideration, shall disclose thereto, the nature of the interest as may connect him with such matter or proposal, and he shall not participate in the deliberations or issuance of the decision in respect of such matter or proposal.

Functions and powers of the Board

- 13.(1) The Board shall have the following powers and functions, to:–
 - (a) lay down the general policies of the Authority, in the light of the public interest, and the general policies of the State;
 - (b) lay down the following:–

- (i) the necessary plans and programmes, for regulating the facilities and activities, and determine the necessary means to implement the same;**
 - (ii) framework for cooperation with the regulatory authorities of other states and the international organizations in order to strengthen co-operation and exchange of regulatory information;**
 - (iii) the suitable mechanisms for participation of the public and media in the regulatory process, and to raise awareness on the potential risks associate with the uses of radiation and the nuclear technology, and on the role of the Authority, users and the other concerned parties, with the aim of limiting such risks;**
- (c) issue the standards and technical guides, prepared by the General Secretariate, whenever the same is necessary, for the implementation of the provisions of this Act;**
- (d) cooperate with the national authorities to integrate the nuclear and radiological emergency plan, in the emergency preparedness and response national plan;**
- (e) approve the plans, programmes and the annual budget of the Authority;**
- (f) validate and evaluate the periodical reports on performance of the Authority, and submit the same to the Minister;**
- (g) determine the obligations, including the financial, for the individuals or bodies Authorized to conduct activities or practices;**

- (h) communicate directly with governmental bodies at their higher levels to achieve its objectives;**
- (i) endorse the levels and criteria of radiation doses, exemption and clearance for activities and practices, including the releases of Radioactive Materials from the facilities during operation;**
- (j) work with all the competent national and international bodies to implement the safeguards agreement;**
- (k) cooperate with all relevant bodies, in respect of safety, security, safeguards and radiation protection;**
- (l) disseminate, independently, the regulatory requirements and decisions of the Authority, and the basis on which the same were based, in a way, consistent with the public interest;**
- (m) render the necessary consultancy to assist the State in laying down a national policy to regulate any activity or practice provided for in this Act;**
- (n) establish and maintain a system of accounting for and controlling of nuclear and Radioactive Materials;**
- (o) constitute technical and administrative committees, to assist the Authority, in carrying out its tasks;**
- (p) seek the help of the national authorities having connection, in identifying local sources of threat, including the possible use of radiation sources in malicious actions;**
- (q) approve and promote the organizational chart and scale of posts of the Authority, to cope up with the expansion in nuclear and radiological technology applications; and submit them to the competent bodies for passing the same;**
- (r) recommend appointment in leadership posts of the General Secretariate, and submit the same to the competent bodies;**

- (s) propose the terms and conditions of service of the General Secretariate staff, and submit the same to the Council of Ministers, through the Minister, for approval;
 - (t) follow up the following:–
 - (i) the international activity in relation to safety, security and safeguards in a manner as may achieve protection of the public interests and coping up with the scientific development;
 - (ii) State obligations under the international and regional convention treaties, and protocols, in the fields of safety, security and safeguards, so as to include the same in the domestic regulations, rules and orders, whenever required;
 - (u) seek the help of whoever they may deem suitable from those possessed of competence and experience, in any subject presented before them.
- (2) The Board may, delegate any of their powers, to the Secretary General, any of the members thereof, or to any committee as they may constitute.
- (3) Make internal regulations, as may regulate the meetings thereof.

Functions and powers of the General Secretariate

14. The Authority shall have a General Secretariate, to assume practice of the following functions and powers:-
- (a) take the following:–
 - (i) the measures necessary to implement the provisions of this Act, and the regulations made thereunder;

- (ii) the measures appropriate to ensure review of the safety evaluation for the facilities, and those as may be under extended shut down.
- (b) propose the organizational chart and scale of posts of the Authority, and submit the same to the Board for approval, and recommend to the Minister to seek approval thereof, by the Council of Ministers;
- (c) issue such publications and periodicals related to the activities of the Authority;
- (d) co-ordinate with the relevant local, regional and international in implementing the emergency preparedness, response and early warning plans, at the domestic level, in anticipation to any potential radiological exposure as may arise from a source inside the State, trans-boundary, or from the orphan or smuggled sources, or from accidents;
- (e) prepare and propose the following:–
 - (i) such amendments and additional conditions, where the necessity so requires, on the authorizations as the Board may issue, in a way as may ensure a higher degree of safety and security;
 - (ii) such regulations, technical rules, directives and standards to regulate safety and security in all the facilities and activities, and submit the same to the Board for approval.
- (f) conduct the announced and unannounced inspection of such facilities and activities, wherein radiation sources or nuclear materials are used; or of such sites as the same are suspected to be used or stored, or radioactive waste is being disposed of therein; and

- review the records and documents as may be found therein, for the purpose of verifying the extent of their compliance with this Act and the regulations and conditions provided for in the Authorizations;
- (g)** assess the findings of the inspection for the purpose of verifying compliance of the Authorized persons with the provisions of this Act, and the regulations, rules and orders made thereunder, and the other requirements as may be specified in the Authorizations;
 - (h)** ascertain the proper keeping of the records pertaining to the safety and security of the facilities and activities;
 - (i)** keep a register of:–
 - (i)** the radiation sources and nuclear materials;
 - (ii)** the radiation doses and the radioactive releases to the environment during the normal operation of the facilities and activities which are subject to regulatory control.
 - (j)** review and analyze the safety and security evaluation reports submitted by the Authorized person, prior to issuance of the Authorizations; and periodically re-review such reports;
 - (k)** monitor and perform periodic review of the following:–
 - (i)** the levels of radiation around the facilities, for the purpose of verifying adequacy of the safety measures adopted by the Operator;
 - (ii)** the radiation exposure and follow-up thereof, and the medical check-up for the workers in the field of radiation, independently of the Operator; according to whatever the necessity may require .

- (l) approve the design of packages being prepared for transportation of radioactive or nuclear materials or radioactive wastes;**
- (m) lay down the following:-**
 - (i) the requirements and arrangements of facilities Decommissioning, closure, sites rehabilitation and the safe management of radioactive waste and spent fuel;**
 - (ii) a strategy regaining for control over orphan sources, and implement the same;**
 - (iii) a management system, to discharge its functions;**
 - (iv) the requirements of safety analysis and a periodical safety assessment, and notify the Authorized person with such requirements, and ascertain the same compliance therewith.**
- (n) specify the necessary criteria and processes, for removal of the regulatory control from the facilities and activities;**
- (o) remove regulatory control off the radiation sources, facilities and activities, in accordance with the conditions provided for in the regulations;**
- (p) issue authorizations for each stage of executing the Authorized practices and activities, in accordance with the Authorization conditions issued therefor by the Board;**
- (q) take the necessary measures, in case of non-compliance with the provisions of this Act, or the regulations made thereunder; with regard to the Authorizations, their conditions or additional conditions thereof;**
- (r) maintain secrecy and confidentiality of the information;**

- (s) possess such equipment, devices and any movable assets, as may be necessary, for the exercise of the functions and powers thereof;
- (t) raise awareness, inform and consult all the stakeholders, on the regulatory control process;
- (u) co-operate and co-ordinate with the relevant bodies, with regard to implementation of the provisions of this Act.

Appointment and powers of the Secretary General

- 15.(1) The Authority shall have, a Secretary General, from those possessed of competence and experience, in the fields of nuclear or radiological sciences, or nuclear and radiological safety and security, to be appointed by the Council of Ministers, upon recommendation of the Competent Minister, and the Council of Ministers shall specify the remuneration and terms of service thereof.
- (2) The term of office of the Secretary General, shall be four years, and he may be re-appointed, for only one further term.
- (3) The Secretary General, shall be the executive responsible before the Board, as to the financial, administrative and technical matters; and he shall be responsible for the following, to:–
- (a) prepare the annual budget, and present the same to the Board;
 - (b) spend out the approved budget, in accordance with the financial regulations in force;
 - (c) submit periodical performance reports to the Board;
 - (d) represent the Authority before the courts, and all other bodies inside and outside the Sudan, in person or by whoever he may delegate;
 - (e) train and raise efficiency of the employees in the fields of safety , security and safeguards.

- (4) There shall not be combination, between the office of the Chairman and the office of the Secretary General.
- (5) The Secretary General, shall not conduct substantial amendments in the Authority chart, without the consent of the Board and approval of the Council of Ministers.

Chapter III

Authorization, notification and inspection procedure

Authorization and notification

- 16.(1) Every person, who intend to conduct any activity or practice, shall within the period of time specified by the Authority, submit an application of such intention to the Authority on the form prepared therefor.
- (2) Unless such activity or practice is exempted from regulatory control, no person, shall carry out any activity or practice, without acquiring an Authorization or an exemption certificate therefor from the Authority.
- (3) The regulations shall specify the following:–
 - (a) the notification and Authorization procedure, conditions of renewal, suspension and revocation Authorization, and ways of informing the public;
 - (b) the types of Authorizations, as the Board may issue, and that as the General Secretariate may issue.
- (4) The Authorized person, shall not transfer the Authorization to any other person, without the consent of the Authority.

Inspectors

- 17.(1) The General Secretariate, shall have sufficient number of inspectors to be selected from among the specialists, to conduct the inspection; provided that, they shall be of technical competence in nuclear and radiological regulatory control field; the same shall be based on rules to be laid down

by the Authority, which shall include such conditions and qualifications that shall be available thereon, in accordance with the international standards.

- (2) The General Secretariate may, accredit or temporary assign qualified non-staff inspectors or experts to assist in conducting the inspection.
- (3) The inspectors, before assuming their tasks, shall take before the Board, the Oath set forth in the Schedule annexed to this Act; provided that, they shall perform their tasks with honesty, honor and trustworthiness.
- (4) Otherwise than in cases of red handed, there shall not be arrested, any of the investigation proceedings taken against, or a criminal suit be instituted against an inspector, with respect to any of the technical works as may relate to the discharge of his tasks, save upon permission from the Authority.

Rules and procedure of inspection

- 18.(1) The General Secretariate may, after approval of the Board, issue rules for inspection that shall include the following:-
 - (a) a periodic inspection programme for the facilities, activities and practices that commensurate with the nature of the potential hazards associated therewith;
 - (b) the conditions required in the inspectors, and training and qualifying them to ensure the highest level of competency in the specified field;
 - (c) Inspection procedure.
- (2) Inspection shall be free of charge.

Powers and duties of the inspector

- 19.(1) The inspector, in order to perform his duties, shall have the following powers, to:-

- (a) obtain information on the situation of safety and security;**
- (b) verify compliance with the provisions provided for in this Act, the regulations made thereunder or in the Authorization conditions;**
- (c) investigate any accident or incident involving a nuclear material or radiation sources;**
- (d) take statement of any person having connection with the inspection subject;**
- (e) coordinate with the relevant bodies to arrest, summon and seizure of materials and devices having connection with the provisions of this Act, and to enter into places and conduct inspection in such way as to enable him to carry out his tasks;**
- (f) access at any time, to all places, wherein there exists such activities which are subject to the provisions of this Act, or there are suspected the presence of radiation sources or nuclear materials, inside the same, and collect samples, take measurements and interrogate the workers, with respect to the other laws having connection;**
- (g) take prompt administrative measures, particularly in such cases as he may consider to cause danger to the public health, the environment or the property; and without prejudice to the generality of the foregoing, such measures may include:–**
 - (i) seizure of the radiation source either in its location or elsewhere as he may deem fit, and such seizure shall continue until the reasons for seizure are removed;**
 - (ii) closure of the facility until the reasons thereof are removed.**

- (h) take enforcement proceedings, as to commensurate with the magnitude of risk arising from the non-compliance of the Operator with the rules and principles of safety and security;
 - (i) temporary suspension of Authorization, where it transpires from inspection, that continuation of work constitutes a risk on the workers, the public, the environment or property;
 - (j) where the Operator refuses or fails to remove the reasons of the temporary suspension, the matter shall be referred to the Secretary General, within one month for determination.
- (2) The inspector shall not, during his term of office, disclose or make a statement on any such topic that falls within the competence of the Authority and being classified as secret, without the consent of the Board; and the inspector shall keep the secret information which he has perused by virtue of his office, throughout the term of office thereof, such obligation shall continue in force, even after termination of his office in the Authority.
- (3) During his term of office with the Authority, an inspector shall not have direct or indirect interest, or render any consultation services to any national or alien body, which is a user or a promoter of the nuclear or radiation technology.

Notification of inspection and documentation of results

20. (1) The General Secretariate shall, whenever possible, notify the Authorized person and the Operator with the date inspection, however, in cases of emergency, unusual situations, or where un-authorized activities occur, an unannounced or a short-term notice inspection, may be conducted, as the Authority may deem appropriate.

- (2) Inspection results shall be documented and kept at the Secretariate, and shall be made accessible to the relevant officials and to the Authorized bodies and persons, as a basis for corrective or enforcement action, or to promote the regulatory proceedings.

Enforcement proceedings in cases of contravention

- 21.(1) Where any Authorized person is found to have committed a contravention of the provisions of this Act, the regulations made thereunder or the Authorization conditions, the General Secretariate, shall take the necessary proceedings to enforce the provisions of this Act, in such a manner as may be commensurate with the seriousness of such contravention.
 - (2) The person, against whom enforcement proceedings have been taken, in accordance with the provisions of Sub-section (1), shall take the appropriate measures to rectify such contraventions, as the General Secretariate may be required, and to ensure non re-occurrence thereof.
 - (3) The General Secretariate shall issue a warning in writing, with a time limit, binding the Authorized person to take the rectification proceedings within the same, in such cases pertaining to contraventions of secondary importance to the safety and security.
 - (4) The General Secretariate may require the person against whom, any of the enforcement proceedings provided for in Sub-section (1), were taken, to suspend his activities until rectification is done, the General Secretariate may also modify, suspend or revoke the Authorization in such cases as may constitute current hazard to the safety or security to human or the environment.
 - (5) The Board, may revoke the Authorization, and require the Authorized person, to rectify any unsafe conditions, in cases of repeated and extremely hazardous contravention to the

Authorization requirements and conditions, or in cases of release of a significant quantity of Radioactive Materials or waste to the environment.

- (6) Where inspection proves that, any activity or practice has been conducted in contravention to the provisions of this Act, or the regulations made thereunder or the Authorization conditions, or where it proves that, a nuclear or radiological emergency has occurred as a result of conduction an action contrary to the safety and security conditions, the inspector may order any of the following:–
- (a) temporary stopping or suspending the activity or practice;
 - (b) direct the Authorized person to suspend the workers not meeting the applicable requirements, to exercise their work in such activities or practices;
 - (c) require the Authorized person to rectify the situation before resuming the work;
 - (d) the safe and secure storing of the nuclear or Radioactive Materials used in, or resulting from, the stopped or suspended activity or practice.
- (7) The orders taken by the inspectors under Sub-section (6), shall remain in force unless:-
- (a) revoked by the inspector;
 - (b) revoked or amended by the Board;
 - (c) amended as a result of an administrative appeal or under a judicial order.
- (8) There shall be issued a report containing the investigation results and the basis on which it was made, including the measurements, test results, explanations and any other information; such report shall be made available to the Authorized person, who shall have the right to submit an explanation request or an objection, within seven days of the date of his knowledge of the report; in case of taking

enforcement proceedings against him by any one of the inspectors.

- (9) In case of suspension or revocation of an Authorization or expiry of the validity thereof, the Authorized person shall not be exempted from compliance with the provisions of this Act, the regulations made thereunder or the Authorization conditions.

Chapter IV

Prohibited and restricted activities and safeguards

Prohibited activities

22. (1) There shall be absolutely prohibited the following activities, to:-

- (a) import, directly or indirectly, any Radioactive Materials, for the purpose of disposal of or storing thereof in the Sudan;
 - (b) import spent fuel and the radioactive waste generated outside the Sudan, for any purpose;
 - (c) bring, import, produce, export or sell any food, children toys or any other materials, as may be used by human being, wherein the level of Radioactive Materials exceeds such limits and standards issued by the Authority;
- (2) There shall not be abetment, or participation in any activity as may be prohibited by the provisions of Sub-section (1).

Restricted activities

23.(1) Without prejudice to the provisions of Section 22, the Authority may, subject to the provisions of this Act, and the regulations made thereunder, issue an Authorization to practice the following activities, to:-

- (a) re-import radiation sources produced in the Sudan, the radioactive waste or spent fuel generated inside the Sudan;**
 - (b) export the radioactive waste or the spent fuel, as may be generated inside the Sudan;**
 - (c) design, specify location, construct, commission, operate or decommission of facilities;**
 - (d) possess or use radiation sources and nuclear materials;**
 - (e) import, export, transit, or produce Radioactive Sources, nuclear materials, facilities, or the radiation devices;**
 - (f) transport radiation sources and nuclear materials, as may be satisfying the safe transport conditions, to the Sudan, from one place to another inside thereof, or use its lands, airspace or territorial waters as a transit to transport the same to a third party;**
 - (g) exercise any mineral activity, or raw-materials processing, as may lead to increase the concentration of the natural Radioactive Materials therein;**
 - (h) discharge the liquid or gaseous Radioactive Materials into the environment during the normal operation of the regulatory controlled nuclear facilities;**
 - (i) exercise any nuclear or radiation activity, as may be classified by the Authority as an activity subject to regulatory control, or any other activity, as it may deem necessary.**
- (2) The regulations shall specify the types of Authorizations and the requirements and conditions of each type.**

Import, export and transit controls

- 24.(1) The Secretary General shall prepare a list of such items that are subject to import, export and transit across the Sudan controls, in accordance with the provisions of this Act, and the regulations made thereunder, and the relevant international obligations and commitments.**
- (2) The Board shall make regulations detailing the Authorization issuance process and the criteria of export and import of item subject to regulatory control;**
- (3) No person shall export, import or transit any of the items subject to regulatory control; without obtaining an Authorization therefor from the Authority.**

Safeguards

- 25.(1) Nuclear materials shall be exclusively used for peaceful purposes, in accordance with relevant international obligations, treaties, and conventions to which the Sudan is a party.**
- (2) There shall be prohibited, nuclear weapons and the other nuclear explosive devices, the direct or indirect possession of such weapons or devices, and the manufacture thereof, seeking or receiving any assistance in manufacturing the same.**
- (3) The safeguards shall be implemented as provided for in the international and regional conventions and treaties, to which Sudan is party and bilateral agreements with the Agency and any protocols to which the Sudan is party.**
- (4) The Board shall be responsible for accrediting the inspectors, as the Agency may nominate to conduct inspection in the Sudan, and they shall issue any necessary permissions wherever required, for the purpose of carrying out their tasks, in accordance with the Safeguards Agreement concluded with the Agency and any protocols annexed thereto.**

- (5) The Authority shall ensure implementation of the Safeguards Agreement through laying down and implementing the following:–**
- (a) a system for measuring nuclear materials;**
 - (b) a system to evaluate the extent of measurement accuracy;**
 - (c) procedure of:–**
 - (i) reviewing measurement differences;**
 - (ii) conducting physical inventory of nuclear materials;**
 - (iii) submitting the necessary reports.**
 - (d) a system for:–**
 - (i) evaluation of the unmeasured nuclear materials ;**
 - (ii) the records and reports aiming at tracking nuclear materials and the flows thereof.**
 - (e) procedure to ensure the correct application of the arrangements of accounting for, and control of nuclear materials.**
- (6) The regulations shall, specify the responsibilities of the persons Authorized to possess, use, handle or process the nuclear materials which are subject to the Safeguards Agreement.**
- (7) Any person who is:-**
- (a) intending to carry out research and development activities related to the nuclear fuel cycle, shall submit information on these activities to the Authority, prior to attempting such activities;**
 - (b) authorized to perform activities subject to the Safeguards Agreement, shall submit to the Authority, the necessary information and data, as may indicate compliance of the Sudan with its commitments arising from such Agreement.**

Chapter V

Safety of Nuclear reactor and Decommissioning

Safety of Nuclear reactor

26. (1) Any person, intending to construct or operate a nuclear reactor, or to conduct activities related thereto, shall obtain an Authorization from the Board, in accordance with the provisions of this Act, and the regulations made thereunder.
- (2) The Authority, in consultation with all the bodies having connection, shall specify requirements for regulatory control of nuclear power and research reactors, and the same shall include the following:—
- (a) site selection, design, construction, commissioning, operation, maintenance and Decommissioning criteria ;
 - (b) assessment of safety, security and environmental impacts by the Operator; and verification of the same by the Authority;
 - (c) financial and human resources necessary to ensure safety and security;
 - (d) management systems, at the different stages of the nuclear reactor life time, which the Operator required shall establish;
 - (e) the human factors that, shall be taken into account by the operator, during the lifetime of the nuclear reactor;
 - (f) radiation protection programmes to ensure that, radiation doses received by the workers and the public are within the prescribed dose limits, and are

- as low as reasonably achievable; taking into consideration of the social and economic factors;
- (g) such plans and programmes of emergency preparedness and response;
 - (h) funding arrangements pertaining to the Decommissioning and radioactive waste management;
 - (i) criteria of the technical preservation programme, to maintain the safety and security of the nuclear reactors in cases of extended shutdown;
 - (j) any other necessary requirements.
- (3) The Authority shall, at the appropriate stages during the review, assessment and issuance of the Authorization, take the procedure to inform and consult the public, including those residents near the proposed nuclear reactor site.
- (4) The Operator shall, bear the prime responsibility for ensuring the safety and security of the nuclear reactor and of all such activities and practices associated therewith.

Decommissioning

27.(1) In case of Decommissioning, the Authority shall:–

- (a) lay down:–
 - (i) the requirements for Decommissioning of nuclear and radiation facilities ;
 - (ii) the criteria, specifying, when a nuclear or radiation facility or part thereof, must be permanently shut down.
- (b) bind, whenever necessary, an applicant for Authorization to construct and operate a nuclear or radiation facility with the following, to:–
 - (i) prepare, at the stage of designing the facility, an initial Decommission plan to be approved by the Authority, provided that, such plan

- shall be consistent with the type and condition of the facility and with hazards that may associate with Decommissioning thereof;
- (ii) conduct, prior to construction a base time survey of the site, including the radiation levels, to build a data base, for the purpose of comparing such data with the data during operation and with that at the end state after Decommissioning;
 - (iii) keep, in accordance with the regulation, the relevant documents and records prepared thereby, before, during and after Decommissioning, for a specific period of time ;
 - (iv) ensure the availability of adequate financial resources, to cover the costs associated with safe Decommissioning, including the safe management of the resulting waste; and such estimated costs shall be subject to review as part of the periodical review of the Decommissioning plan.
- (c) evaluate the end state of the facility after completion of the Decommissioning activities, to ascertain satisfaction of the relevant regulatory requirements;
 - (d) not to release the facility from regulatory control, unless the Operator proves that, end state specified in the decommissioning plan has been reached, and

that any other additional regulatory requirements have been met;

- (e) ascertain, upon completion of the Decommissioning that, the Operator is keeping the records related to the premises, and disposal of the radioactive wastes, and all the documents necessary to confirm complete in the Decommissioning activities; in accordance with the approved Decommissioning plan, to satisfy whatever may arise of requirements;
 - (f) bind the Operator, to bear the prime responsibility of ensuring the safety, security and environment protection, upon implementing the Decommissioning activities at the facility.
- (2) The Secretary General, with approval of the Ministry of Finance and Economic Planning shall, open and manage a separate bank account, for the purpose of financing the facilities of the Decommissioning activities, as the regulations may specify.

Chapter VI

Mining and processing of radioactive waste and spent fuel, and emergency preparedness and response

Mining and processing

28. (1) Without prejudice to the powers and functions conferred upon the Ministry of Minerals, under the provisions of the Mineral Wealth and Mining (Development) Act, 2015, the Authority shall lay down the conditions and requirements of obtaining Authorization to conduct activities relating to mining operations, and processing of such materials, that pose a risk to health and safety, due to radiation exposure, including:–
- (a) any exploratory activity, involving the possibility of radiation exposure;

- (b) taking samples containing Uranium or Thorium, from any site, for the purpose of testing or evaluation, unless the same is exempted by the Authority;
 - (c) excavation activities at any site, including test mines, for evaluation or determination of concentration of the ore materials;
 - (d) testing the mine site, or the processing facility, construction or operation thereof;
 - (e) transport of the products of mining or milling activities;
 - (f) Decommissioning or closure of a mine or a processing facility;
 - (g) radioactive waste management.
- (2) The conditions and requirements of the activities mentioned in Sub-section (1), shall comply with the radiation protection standards and requirements, laid down by the Authority.
- (3) The Authority, in co-ordination with the other relevant bodies, shall establish a monitoring and inspection system, to verify compliance with any Authorization conditions issued under the provisions of Sub-section (1) and the regulations made under the provisions of this Act.
- (4) The Operator shall, bear the prime responsibility for ensuring safety and security of any mining and processing activity conducted in exercise of the relevant Authorization.

Radioactive waste and the spent fuel

- 29.(1) No person shall, operate a radioactive waste or spent fuel management facility, without an Authorization issued by the Authority.
- (2) The Authority, to ensure the safe and secure radioactive waste and spent fuel management, shall lay down the following :-
- (a) the regulations and requirements necessary for protection of the human being from the possible

harmful, and the environment, from the possible harmful impact arising from dealing with the radioactive waste and spent fuel; and ensuring compliance with such regulations and Authorizations pertaining thereto;

(b) an inspection, documentation and reporting system for such activities, and in the case of disposal thereof, a system of institutional control.

- (3) The Authorized person shall bear the prime responsibility for ensuring the safety and security of the radioactive waste and spent fuel, inside or outside a radioactive waste or spent fuel management facility, throughout the lifetime thereof.
- (4) Until a suitable Operator is identified, the Authority shall, ensure the safety and security of the radioactive waste, as the person responsible thereof, cannot be identified.
- (5) The Authority may contract, at the expense of the Operator, with any third party to manage the radioactive waste resulting from a facility or activities of the Operator, where he failed to safely manage the same; provided that the regulation shall specify the failure occurrence criteria.
- (6) An Operator of a radioactive waste disposal facility shall, prepare a plan for the closure of such facility, including an effective institutional control, and the Authority shall approve such plan, prior to authorizing the operation of that facility.
- (7) The Authority or any person as may be authorized with safety, shall issue a statement that the disposal of the radioactive wastes was executed, in accordance with the approved plan.
- (8) There shall not be permitted for any purpose, importation of radioactive waste or spent fuel, generated outside the Sudan.
- (9) There shall not be exported radioactive waste or spent fuel generated inside the Sudan, without an Authorization issued by the Authority.

Emergency preparedness and response

- 30.(1) No Authorization may be granted to conduct an activity, practice, operate a facility, possess or use a radioactive source; unless the Authority approve an appropriate emergency preparedness and response plan, prepared by the applicant.**
- (2) The Authority shall, lay down through regulations or Authorization conditions, the requirements for preparing and approving the on-site and off-site emergency plans, in respect of any facility, activity, practice or a source, as may give rise to a need for an emergency intervention.**
- (3) The applicant, in co-ordination with all the national bodies operating in the field of emergency and intervention, shall prepare emergency plans for facilities, practices, activities or sources, as may involve significant nuclear damage; such plans shall be approved by the Authority.**
- (4) The Authorized person, shall subject the emergency plans to periodical review, update and testing.**
- (5) Upon occurrence of an emergency, the Authorized person, shall implement the emergency plan approved by the Authority.**
- (6) The Authority, in coordination with the relevant bodies, shall prepare a national off-site emergency plan, and submit the same to the Council of Ministers for approval.**
- (7) Upon occurrence of a nuclear or radiological emergency, which poses a risk that radiological contamination could spread beyond the boundaries of the Sudan, the Authority, shall forthwith, notify the Agency and the relevant authorities of any other State which is affected or may be affected by such spread**

- (8) The Authority shall serve as the point of contact for providing any information or assistance regarding emergencies, under the provisions of the relevant international conventions and treaties, to which the Sudan is party.

Chapter VII

The Operator

Operator responsibilities

31. (1) The Operator shall basically be responsible of the safety and security of the facility or activity, and for promotion of the safety culture.
- (2) Without prejudice to the provisions of Sub-section (1), the Operator shall bear the following responsibilities, to:-
- (a) ensure the safety and security, in:-
 - (i) a nuclear facility at the stage of site selection, design, construction, operation, Commissioning, Decommissioning and Extended Shutdown, including rehabilitation of contaminated sites; and likewise ensure safety and security of radiological activities;
 - (ii) Radioactive Materials and provide physical protection for their locations, to prevent seizure thereof, for the purpose of theft, threat therewith, or any other illegal use of such materials;
 - (iii) during land, sea or air transport of Radioactive Materials and provide

adequate physical protection, in accordance with the regulations made thereunder, in coordination with the relevant bodies.

- (b) **mitigate consequences resulting from an intended action, nuclear or radiological accident in the authorized facility;**
- (c) carry out comprehensive and systematic safety assessment as the Authority may specify;
- (d) document the comprehensive safety assessment, and continuously update the same in the light of such experience as may be acquired from operation and the new information on safety;
- (e) verify, by analysis, surveillance, testing, and inspection, the extent of consistency and persistence of the physical and operational state of the facility with the design, the national safety requirements and the safety operational limits and conditions, approved by the Authority;
- (f) notify in writing, the Secretary General where he intends to introduce any modifications as may have an effect on the safety, or when he intends to suspend or stop the facility or the activity;
- (g) keep:–
 - (i) exposure of the workers and the public to the radiation as may be resulting from the facility or activity, at the lowest possible limit and below the approved dose limits;
 - (ii) discharge levels of gaseous and liquid Radioactive Materials into the environment during normal operation of the facility or activity, below the approved radiation dose limits in the Sudan;

- (iii) the radioactive waste resulting from operating the facility or activity, to the minimum practical limit, in terms of volume, toxicity and radioactivity.
- (h) lay down and implementing a management system and continuously improve the same, with the aim of providing confidence that, safety requirements are met throughout the lifetime of the facility operation;
- (i) prepare appropriate plans for emergency preparedness and response and for early warning; and submit the same to the Board for approval, upon applying for an Authorization, to conduct any practice, activity, Commissioning a facility, acquiring or use of any radiation source; and implement such plan, in the event of an emergency;
- (j) forthwith notify the Secretary General upon:-
 - (i) theft or loss of a radioactive material;
 - (ii) loss of control of a reactor, chain nuclear reaction, or radiation source;
 - (iii) occurrence of an accident that might lead to Damage;
 - (iv) occurrence of an emergency, that requires or may require, taking urgent precautionary measures.

Civil liability for nuclear Damage

- 32.(1) The provisions of this section shall apply to, Nuclear Damage resulting from any nuclear or radiological emergency in the Sudan.
- (2) Civil liability for nuclear Damage shall be specified in accordance with the provisions of this Act, and the regulations made thereunder, or in accordance with the

international conventions and agreements, to which the Sudan is party.

- (3) The Operator shall be solely liable for compensating for any Damage that might be suffered by persons or property, as a result of his negligence in operating the facility, or disregard of the requirements, in accordance with the provisions of this Act, the national legislations in force, and the relevant international conventions and treaties to which Sudan is party.
- (4) Notwithstanding the provisions of Sub-section (3), the Operator shall not, bear the civil liability under the provisions of this Act, for any Damage as may result from an armed conflict, hostilities, acts of sabotage or terrorism or natural disasters.
- (5) The Operator shall be responsible for producing insurance or any other financial ensure, acceptable to the Secretary General, as may cover his liability for nuclear Damage.
- (6) There shall be limited, the right to claim compensation under the provisions of this Act, unless the suit has been instituted within: -

 - (a) thirty years, from the date of nuclear accident, in case of loss of life or personal injury;
 - (b) ten years, from the date of nuclear accident, with regard to other Damages;
 - (c) three years, from the date on which the suffering nuclear Damage person was aware or should have been aware of the Damage, and the Operator liable for such Damage, provided that the periods fixed in paragraphs (a) and (b), shall not be exceeded.
- (7) A plaintiff who claims nuclear Damage compensation, within the period provided for in sub-section (6), may amend the claim thereof, to take into consideration, any aggravation of the Damage, even after expiry of the time limit for instituting

the case, where no final judgment, has been passed in the suit.

- (8) The sender Operator, in cases of transporting Radioactive Materials, shall bear the liability for any nuclear damage, until the recipient Operator receives same.

Operator Obligations

33. The Operator shall: -
- (a) provide the necessary competent staff for operation;
 - (b) lay down, procedure and arrangements necessary, to maintain safety and security in all circumstances, and protect the secret information;
 - (c) verify the appropriate design and quality of facilities, activities, radiation sources and the related devices thereto;
 - (d) take the appropriate measures, to remedy the circumstances that led to non-satisfaction of any requirements of the Authority, and prevent the recurrence thereof;
 - (e) carry out the adequate maintenance, test and repair, in a way, as may be necessary, that the facilities and radiation sources remain capable of meeting the design requirements for protection and safety, throughout the operational lifetime thereof;
 - (f) account and control all the nuclear materials at the facility, and keep records stating the stocktaking of the nuclear materials, and the changes as may occur to such stock, submit accounting reports and the design information to the Authority, using the forms prepared by the Authority, and within the period of time, specified thereby;

- (g) take the financial arrangements necessary, for disposal of the radioactive wastes, and Decommissioning;
- (h) comply with all the relevant regulations, and Authorization conditions made by the Authority;
- (i) make no amendments on any activity or practice, he was authorized to perform, where such amendments, have major effects on the safety and security of such activity or practice; save after obtaining an Authorization from the Authority;
- (j) provide the information as the Authority may order, to verify compliance with the regulations and the conditions of Authorization granted;
- (k) keep the records as the Authority may order, and make the same accessible for inspection when required;
- (l) abide by the radiation protection basic principles, in accordance with whatever the regulations may specify.

Chapter VIII

Control of Radiation Sources, Transport of Radioactive Materials, Radiation Protection, and Nuclear Security

Regulatory Control on Radioactive Sources

34. (1) The Authority shall lay down the following:-

- (a) a system for regulatory control of Radioactive Sources and the devices that containing them, in a way as to ensure safe management, and secure protection thereof; during, and at the end of the operational lifetime thereof;
- (b) the regulatory requirements and procedure, to issue an Authorization of export, import or transit of Radioactive Sources, from, to, or across the Sudan; provided that, such procedure shall allow for information evaluation to ensure that, the recipient is

Authorized to receive such sources, and is capable of ensure safety and security thereto;

(c) a national strategy for gaining or re-gaining control over Orphan Sources.

- (2) The Board shall, adopt a categorization of the sources, based on likely injuries as may be incurred by the individuals and the environment, where such sources are not safely managed or securely protected.**
- (3) The responsibility for ensuring the safe and secure use of Radioactive Sources, rests with the person or entity Authorized in respect of such sources.**
- (4) The Secretary General shall, establish a national register of the Radioactive Sources, and take the necessary measures to protect the information contained therein.**
- (5) The Board shall, bind the Authorized persons, to report to the Secretary General forthwith, in respect of loss of control over Radioactive Sources, or any situation or other incident having connection with a Radioactive Source, that may pose a significant risk of radiological injuries to individuals or substantial damage, to property or the environment.**

Transportation of Radioactive Materials

- 35.(1) The Board shall make, the regulations of the requirements pertaining to the safe transportation of the Radioactive Materials, from, to, or across the areas under the sovereignty of the Sudan, such requirements shall include the following:–**
- (a) categorization of the Radioactive Materials, taking into account the likely hazards posed by the types, quantities, and activity levels of such materials;**
 - (b) the measures necessary to provide the physical protection of Radioactive Materials in a way, as may be consistent with the regulations, and guidance**

documents made, in accordance with the provisions of this Act;

(c) any other requirements as the Board may deem necessary.

(2) No person shall, transport Radioactive Materials without complying with the requirements provided for in this Act, and the regulations made thereunder.

(3) The person authorized, to transport Radioactive Materials, shall bear the prime responsibility, to ensure the safety and security of these materials, during transportation; including selection and use of appropriate packages approved by the Authority, together with attaching the appropriate label thereon.

Radiation protection

36. (1) The Board shall, adopt radiation protection requirements of individuals, and the basis of dealing with injuries and damage resulting from exposure to radiation; provided that such requirements shall be met before granting Authorization to commence any activity or practice.

(2) There shall not be granted, an Authorization for a practice or an activity, unless sufficient benefits result therefrom, to the exposed individuals or the society, in a manner, as to affect the radiation harm that it may cause , taking into account the social, economic or any other relevant factors.

(3) The Radiation protection measures, taken in any activity or practice, shall ensure that, the radiation doses, number of exposed persons and the possibility of radiation exposure, are practically the minimum, taking into account, the social and economic factors.

(4) The activities and practices shall be executed in a manner that ensures, the total dose, a person may be exposed to, does not exceed the dose limits approved by the Board.

- (5) The General Secretariate shall specify the dose limits, as may be received by individuals, which shall not be exceeded, upon conducting activities or practices, that are subject to regulatory control; taking into account, upon specifying such limits, the recommendations issued by the recognized international bodies.
- (6) The Authority shall determine:—
- (a) the sources or practices exempted from regulatory control, based on the following criteria, that :—
 - (i) the radiation risks on individuals are sufficiently low, to the extent, that does not require any regulatory control concern;
 - (ii) the collective radiological impact is sufficiently low to the extent that does not require regulatory control;
 - (iii) the sources or practices are considered to be inherently safe, wherein the possibilities of causing what as may lead to failure to meet the criteria, provided for in Sub-paragraphs (i) and (ii), eliminates.
 - (b) the Clearance levels of radiation sources, utilized within authorized activities and practices.
- (7) The prime responsibility, for radiation protection, rests on the person Authorized to conduct activities, that involves the use of ionizing radiation, or nuclear energy.
- (8) The Authorized persons shall, comply with the requirements and dose limits, determined by the General Secretariate, and shall ensure that ,the radiation doses received by workers or the public, including such doses resulting from release into the environment, are kept as low as reasonably achievable.

Nuclear Security

- 37.(1) The regulations shall, specify the requirements pertaining to physical protection of nuclear and other Radioactive Materials, including, the:-**
- (a) classification of nuclear and Radioactive Materials;**
 - (b) necessary protection measures;**
 - (c) accounting and control measures;**
 - (d) Authorization requirements and proceedings;**
 - (e) inspection measures and the proceedings, in case of non-compliance with the regulations, or the Authorization conditions.**
- (2) The General Secretariate, in cooperation with the relevant bodies and stakeholders shall, lay down, monitor and update, threat assessment.**
- (3) A person Authorized to conduct activities or practices, wherein nuclear or other Radioactive Materials are utilized, shall be primarily responsible to ensure the physical protection of such materials, and whatever facilities as may relate thereto, in accordance with the regulations, and the conditions of the granted Authorization.**
- (4) The Authorized person shall, prepare a security plan, based on the threat assessment or the design basis threat, and submit the same, to the General Secretariate for approval, as one of the requirements to obtain an Authorization.**
- (5) The Authorized person shall, implement the approved security plan, and periodically review the same, to ascertain that it remains up to date to cope with the current operating conditions, and the physical protection system.**
- (6) The Authorized person shall submit any substantial amendment, as he may desire to insert into the security plan, for prior approval thereof, by the General Secretariate.**
- (7) In the case of theft, or whatever as may threaten of theft or loss of nuclear or other Radioactive Materials, the Authorized person shall:-**

- (a) forthwith notify the Secretary General with the incident and the circumstances of occurrence thereof;
 - (b) furnish the General Secretariate, as soon as possible, with a written report, including all the details, after reporting the incident;
 - (c) provide the General Secretariate with what as it may order of additional information.
- (8) The Authority shall, as soon as possible, take the appropriate measures, to inform the states that may be injured in the event of theft , robbery or misappropriation of nuclear or other Radioactive Materials; or in case of existence of real threat of misappropriation thereof; and likewise inform the relevant International Organizations, in accordance with any conventions or treaties, to which the Sudan is party thereof.
- (9) The Authority shall be, the central authority responsible for verifying the existence of physical protection of nuclear and Radioactive Materials; and for coordinating recovery thereof, in the event of any theft or misappropriation.

Chapter IX

Financial Provisions

Financial Resources of the Authority

38. The Authority shall have the financial resources adequate to establish the organizational chart and build the technical capabilities thereof, as may appropriate with the nuclear and radiological applications in the Sudan, in a manner, as may ensure the independence thereof, and the same consist of the following:-
- (a) such appropriations, as the state may allocate thereto;
 - (b) such return of the services, as it may render;

- (c) the grants, donations and gifts from such bodies not subject to the regulatory control thereof, as the Minister may approve;
- (d) aid from the Regional and International Organizations, as the Minister may approve;
- (e) any other resources, as the Minister may approve.

Accounts

39. The General Secretariate, shall:–
- (a) keep financial accounts and regular records, and specify the immovable and movable assets, in accordance with the applicable financial rules;
 - (b) deposit the financial resources in one of the government banks, provided that deposit and withdrawal shall be, in accordance with the financial regulations.

Audit

40. (1) The National Audit Chambers, or whoever they may authorize, shall, audit the accounts of the Authority, upon the end of every financial year.
- (2) Internal Periodic Audit, shall be carried out, in accordance with the financial regulations.

Final accounts

and Auditor General report

41. The Board shall, submit to the Competent Minister, within a period, not exceeding six months of the end of the financial year, a statement of the final accounts, accompanied with a copy of the Auditor General report, to be submitted to the Council of Ministers.

Annual report

42. The Secretary General shall, submit the annual report to the Board, in a period not exceeding three months, of the end of the

financial year, and the Board shall, submit the same to the Competent Minister, accompanied with any comments on the report.

Chapter X

General Provisions

Conditions conciliated

43. Every person, or body, owning a facility, or carrying out an activity, or practice shall, conciliate their conditions, in accordance with the provisions of this Act, within a period, not exceeding one year of coming into force thereof.

Grievance

- 44.(1) Any person, aggrieved by any decision issued by the General Secretariate may, appeal to the Board, within a period not exceeding one month of the date of issuance of such decision.
- (2) The Board shall, reply or issue its decision in the appeal, within a period not exceeding two weeks; non-reply upon the end of this period shall be deemed rejection of the appeal.
- (3) A decision issued by the Board on the appeal, shall be final, and may be challenged before the Judiciary.
- (4) Any person aggrieved by any decision as may be issued by the Board may, appeal to the competent court, within a period, not exceeding, one month of the date of issuance of such decision.
- (5) A decision issued by the General Secretariate or the Board, as the case may be, shall be valid until deciding the appeal by the Board, or issuance of a judicial decision.

Offences and Penalties

45.(1) There shall be deemed, to have committed an offence, whoever contravenes any of the provisions of the following sections:–

- (a) 22(1)(a), or 25(1) or (2); shall be punished with imprisonment, for a period, not exceeding fourteen years, or with fine, or with both;**
- (b) 22(1)(b), or 29(8), or 33(f), shall be punished with imprisonment, for a period, not exceeding ten years, or with fine, or with both;**
- (c) 29(9) and shall be punished with imprisonment for a period not exceeding seven years, or with fine or with both;**
- (d) 16(2), or 19(2), or 22(1)(c), or 24(3), or 25(7), or 26(1), or 29(1), or 31(2)(j), or 33(i), or 34(5), 35(2), or 36(8), or 37(7), shall be punished with imprisonment, for a period, not exceeding five years, or with fine or with both;**
- (e) 31(2)(f), or 35(3), or 37(6), shall be punished with imprisonment, for a period, not exceeding three years, or with fine, or with both;**
- (f) 9, or 16(4), or 19(3), shall be punished with imprisonment, for a period, not exceeding two years, or with fine, or with both.**

(2) Whoever contravenes the provisions of the regulations made under the provisions of this Act, shall be punished with imprisonment, for a period, not exceeding one year, or with fine, or with both.

(3) The Court, upon conviction, may order any of the following:–

- (a) seize under supervision of the Authority, any nuclear materials or radiation source;**
- (b) re-export, temporary storage or final disposal of any nuclear material or radiation sources, at the expense of the convicted.**

- (4) For the purposes of the Extradition Act, 1957, and the relevant treaties, to which the Sudan is party, the acts committed in contravention of the provisions of this Act, shall not be deemed political crimes.**
- (5) There shall be inflicted, severer penalty, in the case of offences and contraventions committed by an organized group.**
- (6) Application of the penalties provided for in this Act, shall not prevent application of any severer penalty provided for in by any other Act.**

Power to make regulations

- 46. The Board may, make such regulations, rules, and orders, as may be necessary, for implementation of the provisions of this Act.**