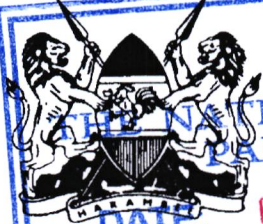


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THE NATIONAL ASSEMBLY

TWELFTH PARLIAMENT - THIRD SESSION - 2019

DEPARTMENTAL COMMITTEE ON ENERGY

.....

REPORT ON THE NUCLEAR REGULATORY BILL, 2018 (NATIONAL ASSEMBLY BILL NO. 27)

CLERKS CHAMBERS
 DIRECTORATE OF COMMITTEE SERVICES
 PARLIAMENT BUILDINGS
 NAIROBI

JUNE, 2019

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CHAIRPERSON'S FOREWORD

This report contains the Committee's proceedings on the consideration of the Nuclear Regulatory Bill, 2018 (National Assembly Bill No. 27). The Bill was read a first time on **4th December, 2019** and was subsequently committed to the Departmental Committee on Energy for consideration and to facilitate public participation pursuant to Standing Order 127. The Bill seeks to repeal the Radiation Protection Act (Cap. 243) and provide for a comprehensive regulatory framework, for radiation and nuclear safety, nuclear security and safeguards to control radiation sources, nuclear materials and associated waste. The Bill aims to protect the people, property and the environment from the harmful effects of exposure to radiation and to provide for nuclear safety and non-proliferation in accordance with national and international obligations.

In processing the Bill, the Clerk of the National Assembly placed adverts in the print media on **8th February, 2019** seeking for comments from the public on the Bill pursuant to Article 118 of the Constitution. The Committee received memoranda from Seven (7) stakeholders. The Committee also invited Kenya Nuclear Electricity Board and the Radiation Protection Board through their respective parent Ministries of Energy and of Health for consultations on the Bill vide letters **Ref.NA/DCS/ENERGY//2019/09** dated **20th February, 2019** and sought for their comments on the Bill. The Committee held a stakeholder engagement workshop at the Serena Hotel in Mombasa between 28th February and 3rd March, 2019. Further, the Committee undertook exhaustive public hearings on the Bill in twelve (12) counties.

The Committee is grateful to the Offices of the Speaker and the Clerk of the National Assembly for the logistical and technical support accorded to it during the consideration of the Bill. Finally, I wish to express my appreciation to the Honorable Members of the Committee and all the stakeholders who made useful contributions towards the preparation and production of this report.

On behalf of the Departmental Committee on Energy and pursuant to provisions of Standing Order 199 (6), it is my pleasant privilege and honour to present to this House the report of the Committee on its consideration of the Nuclear Regulatory Bill, 2018.

HON. DAVID GIKARIA, M.P

EXECUTIVE SUMMARY

The Nuclear Regulatory Bill, 2018 (National Assembly Bill No. 27) was published on **19th November, 2018**. The Bill was read a first time on **4th December, 2018** and thereafter committed to the Departmental Committee on Energy for consideration and report to the House.

The Bill seeks to repeal the Radiation Protection Act (Cap. 243) and provide for a comprehensive regulatory framework, for radiation and nuclear safety, nuclear security and safeguards to control radiation sources, nuclear materials and associated waste. The Bill aims to protect the people, property and the environment from the harmful effects of exposure to radiation and to provide for nuclear safety and non-proliferation in accordance with national and international obligations.

In order to fulfill the requirements of Article 118 of the Constitution, the Clerk of the National Assembly placed an advertisement in the print media on **8th February, 2019** requesting for comments from the general public on the Bill. The Committee received memoranda from Seven (7) stakeholders. The Committee also identified stakeholders and invited the Kenya Nuclear Electricity Board and the Kenya Radiation Protection Board vide letters **Ref.NA/DCS/ENERGY/2019/009** dated **20th February, 2019** to present their comments on the Bill. The Committee received written memoranda from the following stakeholders: -

1. EAARP-East Africa Association for Radiation Protection(EAARP)
2. Radtech East Africa Limited
3. The Kenya Association of Radiologists
4. Vincent K. Mutai
5. The Kenya Association of Radiologists
6. The Kenya Association of Radiographers
7. The Kenya Radiation and Protection Board

The Committee also invited all the stakeholders that had submitted written memoranda on the Bill for stakeholder consultations in Parliament Buildings, Nairobi County on **Tuesday 30th April, 2019**.

Additionally, the Committee undertook an exhaustive Public hearing in the following twelve (12) counties: - Kajiado, Nakuru, Kericho, Kisumu, Busia, Eldoret, Nairobi, Kwale, Kilifi, Mombasa, Kiambu, and Mwingi.

1.0 PREFACE

Hon Speaker,

On behalf of the Departmental Committee on Energy and pursuant to provisions of Standing Order 199 (6), it is my pleasant privilege and honour to present to this House the Report of the Committee on its consideration of the Nuclear Regulatory Bill, 2018

The Bill was committed to the Committee on Wednesday 14th February, 2018 and arising from the need to undertake extensive public participation on the Bill, the Committee requested for additional sixty (60) days to carry-out public hearings, which it did in twelve counties. It is on the basis of this that the Committee makes this report pursuant to Standing Order 127 (4).

1.1 Mandate of the Committee

The Departmental Committee on Energy is established pursuant to provisions of Standing Order 216 (5). Under the provisions of Standing Order 216 (5) the Committee is mandated to inter alia:

- (i) To investigate, inquire into, and report on all matters relating to the mandate, management, activities, administration, operations and estimates of the assigned ministries and departments;
- (ii) To study the programme and policy objectives of ministries and departments and the effectiveness of the implementation.
- (iii) To study and review all legislation referred to it;*
- (iv) To study, assess and analyse the relative success of the ministries and departments as measured by the results obtained as compared with their stated objectives;
- (v) To investigate and inquire into all matters relating to the assigned ministries and departments as they may deem necessary and as may be referred to them by the House;
- (vi) To vet and report on all appointments where the Constitution or any law requires the National Assembly to approve, except those under Standing Order 204 (*Committee on Appointments*); and
- (vii) Make reports and recommendations to the House as often as possible, including recommendation of proposed legislation.*

1.2 Oversight

The Departmental Committee on Energy oversees the performance of the following State departments:-

- (i) Energy, and
- (ii) Petroleum.

1.3 Composition of the Committee

The Committee comprises the following Members-

1. The Hon. David Gikaria, M.P. - **Chairperson**
2. The Hon. (Dr.) Robert Pukose, M.P. - **Vice Chairperson**
3. The Hon. Cecily Mbarire, M.P.
4. The Hon. Ekomwa Lomenen James, M.P.
5. The Hon. Joseph Wathigo Manje, M.P.
6. The Hon. Lemanken Aramat, M.P.
7. The Hon. Oscar Sudi, Kipchumba, M.P.
8. The Hon. (Eng.) Vincent Musyoka Musau, M.P.
9. The Hon. Amina Gedow Hassan, M.P
10. The Hon. Abdikhaim Osman Mohamed, M.P
11. The Hon. Clement Muturi Kigano, M.P.
12. The Hon. Elisha Odhiambo, MP
13. The Hon. Elsie Muhanda, MP
14. The Hon. Gitau Faith Wairimu, M.P.
15. The Hon. Julius Musili Mawathe, MP
16. The Hon. Ken Chonga, MP
17. The Hon. Tindi Nicholas Mwale, MP
18. The Hon. Walter Owino, MP
19. The Hon. Mohammed Ali Lokiro, MP

1.4 Committee Secretariat

The Committee is resourced with the following technical staff, representing the Office of the Clerk:

- | | | |
|--------------------------|---|-------------------------|
| 1. Mr. Benjamin Magut | - | First Clerk Assistant |
| 2. Mr. Douglas Katho | - | Third Clerk Assistant |
| 3. Mr. Ronald Malala | - | Legal Counsel |
| 4. Mr. David Ngeno | - | Research Officer |
| 5. Mr. Abdikadir Gorod | - | Fiscal Analyst |
| 6. Mr. Joseph Okong'o | - | Media Relations Officer |
| 7. Mr. Rose Atupat | - | Audio Recording Officer |
| 8. Ms. Sheila Chebotibin | - | Sergeant at Arms |

1.5 Acknowledgment

Hon. Speaker,

The Committee wishes to sincerely thank the Offices of the Speaker and the Clerk of the National Assembly for the support and services extended to the Members to enable the Committee complete this report within the given timelines.

I am grateful for the Members of the Committee whose support enabled the Committee to accomplish this task. Special thanks to the Secretariat for their technical support during the compilation of the report.

On behalf of the Committee, and pursuant to Standing Order No. 127 (4) of the National Assembly, It my honor and privilege to present the Committee Report on the Nuclear Regulatory Bill, 2018 to House for consideration and adoption.

Thank you

Signed.....

Hon. David Gikaria, M.P

CHAIRMAN DEPARTMENTAL COMMITTEE ON ENERGY

DATE.....

2.0 CONSIDERATION OF THE NUCLEAR REGULATORY BILL, 2018

The Nuclear Regulatory Bill, 2018 underwent the first reading on 4th December, 2018 and thereafter committed to the Committee on Energy as provided for in the Standing order 127(1).

Pursuant to Article 118(b) and Standing Order 127(3), which require public participation and involvement in the legislative and other business of Parliament and its Committees, a notification was placed in the mainstream print media on 8th February, 2019 informing the public that the Committee was considering the Nuclear Regulatory Bill, 2018 and inviting them to submit any representation they might have on the Bill.

Hon. Speaker,

The Committee held meetings with the Kenya Nuclear Electricity Board and the Radiation Protection Board to consider pertinent issues that the Bill was seeking to address. Additionally the Committee received written memoranda and held meetings with following stakeholders:

- (i) EAARP-East Africa Association for Radiation Protection(EAARP)
- (ii) Radtech East Africa Limited
- (iii)The Kenya Association of Radiologists
- (iv)Vincent K. Mutai
- (v) The Kenya Association of Radiographers
- (vi)The Radiation and Protection Board

Hon. Speaker,

In addition to receiving the written memoranda from the stakeholders, the Committee held public hearings in the following counties to receive oral submissions from general public.

- 1) Kajiado
- 2) Nakuru
- 3) Kericho
- 4) Kisumu
- 5) Busia
- 6) Eldoret
- 7) Nairobi

- 8) Kwale
- 9) Kilifi
- 10) Mombasa
- 11) Kiambu
- 12) Mwingi

CHAPTER ONE

3.0 INTRODUCTION

1. The Nuclear Regulatory Bill, 2018 seeks to provide a comprehensive framework for the regulation of safe, secure and peaceful use of atomic energy (nuclear energy means the energy released during nuclear fission or fusion, especially when used to generate electricity) and nuclear technology which includes supply of electricity, medicine in terms of radiation, heating and space travel. The Bill also focuses on the production and use of radiation sources and the management of radioactive waste.
2. The enactment of the Bill will consequently repeal the Radiation protection Act which provided for protection of the public and radiation workers from the dangers arising from the use of devices or material capable of producing ionizing radiation which is used by patients undergoing treatment.

3.1 Summary of the Bill

3. Part I provides for the preliminary matters; the Short title, Interpretation of Terms and the objects and purposes of the Bill which are to regulate the safe use and development of nuclear technology and protection of persons, property and environment from the effects of nuclear and radioactive material activities.
4. Part II deals with the establishment of the Kenya Nuclear Regulatory Commission. The Commission is to ensure the safe use of nuclear technology and provide for the protection of persons, property and environment from the harmful effects of nuclear activities among others. The commission is composed of 18 commissioners from the government and private sector. The commission is independent and not subject to the direction or control of any person or authority in exercising its powers and functions.
5. Part III deals with the financial provisions in relation to the Commission. They include funds for the commission, accounts and audits and investments of funds into securities, trust funds or banks which the National Treasury may approve.
6. Part IV deals with the manner in which the commission shall exercise regulatory control. It includes—

- (a) Notification—which is given when a person intends to engage in any activity in a manner contemplated in the Bill. The notification is given to the Commission;
- (b) Authorisation—which is permission granted by the Commission to a person who intends to carry out an activity. Such application shall include information that give a detailed description of the activity, the radiation protection measures and a plan for the management of radioactive waste. Such authorisation may be suspended or revoked where there is a violation of the terms and conditions of the Act and other circumstances;
- (c) Inspection—whose objective is to monitor compliance with requirements of the Act and the terms and conditions of the authorisation issued by the commission. The Commission is tasked with establishing a planned systematic inspection programme consisting of routine and reactive inspections that are announced and in announced. The Commission is also tasked with appointing inspectors for the jurisdiction specified in the appointment;

Enforcement—which occurs where the inspector determines that an activity being conducted is in violation of the Act or the activity poses an immediate risk of injury or damage to person, property and environment.

- 7. Part V of the Bill deals with radiation protection in relation to medical use and consumption of products offered to the public e.g smoke detectors which consists of americium-241, a radioactive element which acts as a sensor or glazed tiles e.t.c therefore the authorised person is to plan and implement technical and organisational measures to ensure safety against radiological hazards and ensure safety and protection from medical exposure among other requirements.
- 8. Part VI of the Bill deals with safety control of radiation sources and orphan sources. The commission is mandated to establish a system that ensures safe management and protection of those sources until the end of their useful life.
- 9. Part VII of the Bill provides for the various authorisations that one needs to acquire before any undertaking. They include—
 - (a) Site authorisation- an authorisation for a site for a nuclear power plant;

(b) Construction authorisation- an authorisation for the construction of a nuclear power plant;

(c) Operations authorisation- an authorisation for the operations of a nuclear power plant or a nuclear power reactor;

10. It also provides for decommissioning requirements including safety and environmental criteria, limits and conditions for removal of regulatory controls for facilities and criteria for the clearance of radioactive material during and following decommission.
11. Clause 49 provides that at the design stage of facilities, the applicant should also prepare an initial decommission plan for approval by the commission.
12. Part VIII of the Bill provides for the Decommissioning Fund. The purpose of the fund is to provide for decommissioning under the Act and management of radioactive waste and spent fuel.
13. Part IX of Bill deals with emergency preparedness and response. The Role of the Commission is to set the criteria for classification of emergencies, review and approve emergency preparedness and response plans developed by the licensee.
14. Part X of the Bill provides for transportation of radioactive materials in a safe manner taking into consideration the safety persons, property and the environment at large.
15. Part XI of the Bill provides for the illicit trafficking of nuclear materials, nuclear related equipment and technology which are referred to as controlled items.
16. Part XII of the Bill deals with the scope of radioactive waste and spent fuel management; components of a waste management plan (76) (2) and classification of radioactive waste. In discharging radioactive waste, the authorised person shall ensure such waste is not discharged into the environment except where such discharge is within the limits specified and the activity discharged is confined to be below clearance level.
17. Part XIII of the Bill deals provides for the peaceful use of nuclear energy. The commission shall ensure the implementation of ratified international treaties and conventions and allow inspection Kenyan facilities by international agencies.

18. Part XIV of the Bill provides for nuclear security. An authorised person is tasked with the primary responsibility for ensuring the physical protection of nuclear material and radioactive material under its control.
19. Part XV of the Bill provides for miscellaneous provisions such as offences by employees and agents and general penalty. It also provides for the regulations to be made in consultation with the Cabinet Secretary.
20. Part XVI of the Bill provides for Transitional provisions which include the repeal of the Radiation Protection Act, the successor of the Radiation Protection Board to be the Kenya Nuclear Regulatory Commission. It also provides for transfer of staff and secondment of staff to the Commission.

CHAPTER TWO

4.0 PUBLIC PARTICIPATION ON THE NUCLEAR REGULATORY BILL, 2018

9. Pursuant to Article 118 of the Constitution, the Clerk of the National Assembly placed an advertisement in the Daily Nation and Standard newspapers on **8th February, 2019** requesting for comments from the general public and or interested individuals/organizations. By the close of the deadline and by the time the Committee was considering the Bill, the Committee had received memoranda from Seven (7) stakeholders. The Committee held a stakeholder engagement meeting at Parliament Buildings on Tuesday 30th April, 2019.
10. The following stakeholders submitted their memoranda to the Committee—
- (a) East Africa Association for Radiation Protection (EAARP);
 - (b) Radtech East Africa Limited;
 - (c) The Kenya Association of Radiologists;
 - (d) Vincent K. Mutai;
 - (e) The Kenya Association of Radiographers; and
 - (f) The Radiation and Protection Board.

4.1 Consideration of the Nuclear Regulatory Bill, 2018

11. In considering the Nuclear Regulatory Bill, 2018 the Committee took into account the Memoranda and oral submissions received from the public and its deliberations. The following constitutes the views of the Committee on the issues arising with regard to the cited contentious clauses of the Bill—

4.1.1 Clause 2

12. Four (4) memoranda received by the Committee contained submissions relating to the Clause. East Africa Association for Radiation Protection sought amendment of the definition of Cabinet Secretary to domicile the Authority under a different Cabinet Secretary from the one responsible for internal security. The Committee did not agree with this view, noting that the regulation of nuclear materials is a security matter which is better coordinated from a ministry operating under the Office of the President.

13. Radtech East Africa Limited sought amendment of the definition of “non-iodized radiation” to correct the typographical error. The Committee agreed with this view.
14. The Kenya Association of Radiologists proposed the insertion of definitions of the terms “licensee” as used in the Bill and “medical practitioner” to clarify the various levels of authority with regard to healthcare. In addition, the Association proposed amendment of the definition of “non-iodized radiation” to correct the typographical error and the amendment of the definition of the term “radiation” to limit it to ionizing radiation only . The Committee agreed with the view of defining “medical practitioner” and correcting the typographical error in the definition of “non-iodizing radiation”
15. The Radiation Protection Board proposed the amendment of the definitions of “activities” and “facilities” to reflect the singular “activity” and “facility”. In addition, they proposed that the definition of “consumer products” be amended to include products generating non-ionizing radiation, the definition of “clearance levels” be amended to replace the word “activity” with “radioactivity” for purposes of clarity; the definition of “radiation source” be amended to ensure radioactive material that is not exempted is considered as a radiation source; the definition of “radioactive waste” be amended to replace the word “activity” with “radioactivity” for purposes of clarity; the definition of “sabotage” be amended to also cover radioactive materials and radiation sources; and the definition of “source” be amended to include sources of non-ionizing radiation. They further proposed the inclusion of new definitions for the terms “critical group” and “nuclear security”. Save for the proposed new definitions, the Committee agreed with the views of the Board on the proposed amendments to the clause.

4.1.2 Clause 3

16. The Radiation Protection Board proposed amendment of the Clause to widen its scope to include non-ionizing radiation. The Committee agreed with this view.

4.1.3 Clause 4

17. The Radiation Protection Board proposed amendment of the Clause to delete the word “iodizing” to widen to scope of the clause to cover all forms of radiation. The Committee agreed with this view.

4.1.4 Clause 6

18. The Radiation Protection Board proposed amendment of paragraph (f) to replace the word “co-operate” with the word “collaborate” and the addition of an additional paragraph to empower the Commission to grant or refuse to grant or to extend authorizations with necessary conditions. The Committee did not agree with this view noting that the two words are synonyms.

4.1.5 Clause 8

19. Two (2) Memoranda received by the Committee contained submissions relating to the Clause. East Africa Association for Radiation Protection sought amendment of the composition of the Board to reduce the number the proposed seventeen (17) to align it with *Mwongozo* and balance the interests of government and non-government entities. Vincent Mutai also sought the reduction of the Membership of the Board to nine (9) members noting that the institutions with comparable functions in other countries are managed by bodies with a lesser number of Members.

20. On its part, the Kenya Association of Radiographers sought amendment of the clause to clarify the professions which covered by the phrase “radiation or nuclear related science” and proposed the addition of “radiography, radiology and radio-physics professions” for purposes of clarification.

21. The Committee noted that there was need to reduce the number of the Members of the Board to eleven (11) members in a balanced manner to ensure that the relevant stakeholders in nuclear and radiation matters are included to guide the Commission on applicable policy.

4.1.6 Clause 9

22. Four (4) Memoranda received by the Committee contained submissions relating to the Clause. Radtech East Africa Limited sought amendment to the qualifications requirement of the Director-General to remove qualifications in law and social sciences and include qualifications in engineering. The Kenya Association of Radiographers proposed that the clause be amended to include professionals from medical radiation and nuclear sciences.

23. The Kenya Association of Radiologists and the Radiation Protection Board proposed that the Director General possess a post-graduate degree in nuclear and radiation related sciences in the fields of physical sciences, medicine or engineering

24. The Committee noted that the various proposals on the clause sought to limit the categories of qualifications for individuals seeking to be appointed Director General. It was their view that the qualifications ought to cover all disciplines relevant to the execution of managerial functions at the Commission.

4.1.7 Clause 12

25. Vincent Mutai proposed amendments to the clause to subject the setting of the remuneration of the Members of the Board to consultations with the Salaries and remuneration Commission. The Committee agreed with this view as such consultation is required under Article 230 of the Constitution. The Committee agreed with this view.

4.1.8 Clause 16

26. Vincent Mutai proposed that any surplus funds be remitted back to the Consolidated Fund instead of being retained by the Commission. The Committee did not agree with this view, noting that the law allows statutory bodies to retain unutilized funds.

4.1.9 Clause 18

27. Vincent Mutai proposed the deletion of the requirement for the approval of the Commission's budget estimates. The Committee did not agree with this view, noting that all budget estimates are subject to approval by the National Assembly.

4.1.10 Clause 20

28. Vincent Mutai proposed that the clause be amended to provide clarity on whether the approval to be sought from Treasury is with regard to the decision to invest or the type of investment to be made. The Committee noted that the provision is adequately clear that the authorization to be sought is that for investment.

4.1.11 Clause 22

29. The Radiation Protection Board proposed amendment of the Clause to require payment of a prescribed fee for the grant of an authorization and the amendment of Clause (2)(b) to

delete the words “of individuals” as it limits the scope of application of the provision. The Committee agreed with this view.

4.1.12 Clause 26

30. Vincent Mutai proposed that the clause be amended to substitute the word “review” with “appeal” noting that there are very limited grounds within which a review may be granted. The Committee did not agree with this view noting that an aggrieved person under the Act is still afforded the rights of pursuing redress in the courts of law.

4.1.13 Clause 27

31. Vincent Mutai proposed that the clause be amended to provide that the commission reserves the right to undertake inspection of authorised activities without notification to authorised person. The Committee did not agree with this view, noting that the clause as drafted adequately grants such power.

4.1.14 Clause 30

32. Vincent Mutai proposed that the clause be amended to provide timelines within which an inspector can order for the temporary suspension of activities and the period within which he or she should submit a report.

33. The Kenya Radiation Protection Board proposed that clause (1) be amended to replace the word “may” with “shall”. The Committee did not agree with this view, noting that “may” as used adequately empowers an inspector under the Bill.

4.1.15 Clause 31

34. Vincent Mutai proposed that the clause be amended to correct the cross-referenced provision from “30” to “28” and to provide for a timeframe within which a decision should be made by the commission. The Committee agreed with the correction of the cross-reference.

4.1.16 Clause 32

35. Two (2) memoranda received by the Committee contained submissions relating to the Clause. Vincent Mutai proposed that the clause be amended to provide clarity on the terms “licensee” and “authorised person” and whether the two are used interchangeably. The

Radiation Protection Board proposed amendment of subclause (1) to delete of the word “licensee” and substitute it with the words “authorised person” for consistency and widening of the scope of the clause to cover non-ionizing radiation. They further proposed that subclause (2)(a) be amended to insert the word “no” immediately after the words “be of” for clarity. The Committee agreed with both views.

4.1.17 Clause 35

36. The Kenya Association of Radiographers proposed that the Clause be amended to define the term “medical practitioner” in a non-restrictive manner which takes into account that qualified and licensed practitioners other than physicians and surgeons can legally refer persons for radiological examinations.

37. The Radiation Protection Board proposed the insertion of the word “radiation” in the term “medical exposure” for purposes of clarity. The Committee agreed with both views.

4.1.18 Clause 36

38. Vincent Mutai proposed that the clause be amended to reconcile it with the provisions of Clause 21 on Notifications. The Radiation Protection Board proposed that the clause be amended by deleting the term “neighbouring State” and substituting it with “another State”

4.1.19 Clause 38

39. Vincent Mutai proposed that the clause be amended to reconcile it with the provisions of Clause 25 on primary responsibility for safety.

4.1.20 Clause 42

40. Vincent Mutai proposed that the clause be amended to delete the words subjecting the provisions of the Bill to other mining legislation with regard to the mining of radioactive materials. The Committee agreed with this view.

4.1.21 Clause 43

41. Vincent Mutai proposed that the clause be amended to reconcile it with the provisions of Clause 21 on Notifications.

4.1.22 Clause 44

42. Vincent Mutai proposed that the clause be amended to reconcile it with the provisions of Clause 25 and 38 on primary responsibility for safety and medical exposure, respectively.

4.1.23 Clause 46

43. Vincent Mutai proposed that the clause be split into two to cover construction and operation matters separately. The Committee did not agree with this view, noting that the clause as drafted adequately conveys the information required.

4.1.24 Clause 47

44. Vincent Mutai proposed that the clause be amended in sub clause (3) to delete the reference to the commission and responsibility for the safe management of a reactor in extended shutdown. The Committee agreed with this view.

4.1.25 Clause 48

45. Vincent Mutai proposed that the clause be amended to insert a cross-reference to clause 46. The Committee did not agree with this view, noting that the cross reference was not necessary and that the clause only required minor amendments for clarity.

4.1.26 Clause 49

46. Vincent Mutai proposed that the clause be amended to synchronize it with the procedure for applying for an authorization. The Committee did not agree with this view, noting that the proposed amendment was unnecessary.

4.1.27 Clause 50

47. Vincent Mutai proposed that the clause be amended to require a notification of intended decommissioning to be given within fourteen days. The Committee did not agree with this view, noting that the Clause includes an express requirement for the Commission to be notified of any proposed decommissioning of a facility.

4.1.28 Clause 51

48. Vincent Mutai proposed that the clause be amended to require an authorised person to provide security sufficient for decommissioning costs in the form of a performance bond to

ensure the availability of funds for such costs. The Committee did not agree with this view, noting that requiring security to be held by the Commission over the lifetime of a facility would be economically prejudicial to the owners of a facility.

4.1.29 Clause 57

49. The Radiation Protection Board proposed that the paragraph (b) be amended to replace the word “licensee” with “authorised person” for consistency. The Committee agreed with this view.

4.1.30 Clause 58

50. Vincent Mutai proposed that the clause be amended require that an emergency preparedness plan is prepared when seeking an authorization. The Committee did not agree with this view, noting that under the Bill, such a plan is to be submitted prior to the grant of an authorization.

4.1.31 Clause 59

51. Vincent Mutai proposed that the clause be amended to delete the words “*that could give rise to a need for emergency intervention*” noting that the words limit the requirement that an emergency plan is a mandatory requirement for an authorization to handle radioactive material. The Committee agreed with this view.

4.1.32 Clause 62

52. Vincent Mutai proposed that the clause be amended to require an authorised person to also inform the Commission about the significant facts of its emergency preparedness and response plan. The Committee agreed with this view.

4.1.33 Clause 65

53. Vincent Mutai proposed that the clause be amended to include a requirement for the approval of a carrier by the Commission. The Committee did not agree with this view.

4.1.34 Clause 66

54. Vincent Mutai proposed that the clause be amended to require the approval of a radiation protection transport plan by the Commission. The Committee did not agree with this view, noting that clause 67 outlines that the plan must be approved by the Commission.

4.1.35 Clause 67

55. Vincent Mutai proposed that the clause be amended to require a carrier to inform the Commission of an accident as soon as is practicable. The Committee did not agree with this view, noting that clause 67 outlines that the plan must be approved by the Commission.

4.1.36 Clause 68

56. Vincent Mutai proposed that the clause be amended to require the approval of all transport protocols by the Commission. The Committee did not agree with this view, noting that clause 67 outlines that the transport plan must be approved by the Commission.

4.1.37 Clause 73

57. Vincent Mutai proposed that the clause be amended to define criteria or discretion that the commission has on the declaration of what constitutes radioactive waste. The Committee did not agree with this view, noting that the clause clearly outlines the applicable principles of managing such waste.

4.1.38 Clause 76

58. Vincent Mutai proposed that the clause be amended to clarify whether a radioactive waste management plan is required before or after the grant of an authorization. The Committee agreed with this view.

4.1.39 Clause 78

59. Vincent Mutai proposed that the clause be amended to define the term “conditioning process”. The Committee agreed with this view.

4.1.40 Clause 79

60. Two (2) memoranda received by the Committee contained submissions relating to the Clause. Vincent Mutai proposed that the clause be amended to allow the Commission to

establish clearance levels which no clearance is required from the Commission with regard to certain radioactive material. The Radiation Protection Board proposed that the clause be amended by deleting the term “activity” and substituting it with the term “radioactivity”. The Committee agreed with both views.

4.1.41 Clause 98

61. The Radiation Protection Board proposed that subclause (2) be amended to require the formulation of regulations on nuclear security. The Committee did not agree with this view, noting that the clause adequately provides for the various regulations to be made, save for a typographical error.

4.1.42 Clause 99

62. The Kenya Association of Radiologists proposed an amendment to subclause (2) (c) to subject any existing licenses transited to the proposed regime under the Bill to review. The Committee did not agree with this view noting that such a provision would subject already licensed persons to prejudicial treatment during the transition period.

4.1.43 Other suggested Amendments

63. EAARP further proposed that radioactive waste management programme should be comprehensive and coherent in fostering safety. Further suggestions to include good practices identified globally which have the following elements;

- (a) a clear government commitment to the national strategy and programme for waste management and safe disposal.
- (b) The development of a transparent national waste inventory.
- (c) Deliberate efforts towards maintaining a high level of professional, competent staff.
- (d) Facilitate implementation of requirement for decommissioning to take place in the shortest time possible.
- (e) Optimize management of low level wastes.
- (f) Consider mechanisms to address disposal liabilities for small waste producers.

CHAPTER THREE

5.0 OBSERVATIONS FROM THE PUBLIC HEARINGS ON THE NUCLEAR REGULATORY BILL 2018

64. The Committee made visits to twelve (12) counties and had engagements with the public between the periods 8th April and 16th May 2019. The following were the key issues that may also inform possible areas of amendment to the Nuclear Regulatory Bill, 2018. Members of the public noted that—

- 1) The Bill may concern counties on a number of issues ranging from provision of land for nuclear power plant, use of nuclear technologies in hospitals and modalities for disposal and safe keeping of spent fuel and other nuclear waste as well as disaster preparedness;
- 2) There is need for constant engagement with a view to demystify to the public on both the application of nuclear energy mainly for industrial and peaceful use and forward planning relating to regulation of nuclear power plant and its operations. This could take the form of compulsory periodic public engagement and civic education to enhance transparency of operations and reporting;
- 3) A very short period had been given to the public to interrogate the Bill. In future there would be need to use various modes of communication to widen the scope of awareness on legislative matters. Parliament should consider using vernacular FM radios and translators in fostering public participation so that members of the public are not excluded from active engagement;
- 4) There is need to exploit available solar and geothermal energy sources;
- 5) The *Mwongozo* Guidelines should guide and inform the composition of the Authority with a view to reduce proposed membership of seventeen (17) persons. Further, the proposed membership of the Authority does not take into account affirmative action principles such as youth and gender mainstreaming as well as inclusion of persons with disability;
- 6) The qualification requirements for appointment to the Authority should be reduced from ten (10) years to five (5) years so as not to disadvantage citizens with less experience or exposure;

- 7) A representative from the National Environmental Management Authority should be considered for inclusion in the Authority to provide technical expertise relating to the environment;
- 8) Express provisions on compensation to residents, persons or communities affected by radiation should be included in the Bill. The amendments should take into account—
 - (i) Loss of livelihood and settlement including rivers, sea and lakes in case of nuclear exposure/accident;
 - (ii) Compensation for displacement in accordance with best practices on compensating persons affected by the construction or operations of nuclear power plants; and
 - (iii) Compensation towards loss of lives or harmful exposure that may affect the biological functioning of the human body as a result of partial or total organ failure;
- 9) The Bill should specify quotas or share of proceeds from the operation of nuclear plants and related activities. This may include the share of either income or employment preference or other benefits such as skill development to the host county or community to enhance distribution, empowerment and buy-in among residents in nuclear projects;
- 10) There is need for an independent body to check on the safety and security of nuclear plants and materials and adherence to statutory requirements. Such a watchdog body should be designed in a way to provide a nonpartisan, timely and additional independent layer of technical oversight and oversee other players involved in nuclear use and application and regulation;
- 11) The Bill should be clear on the requirements and scope of feasibility studies and analysis when determining the location for nuclear plants, waste disposal and waste management. The requirements, may among other things, include the effect and impact on livelihood (and its sources such as rivers, lakes and sea and other ecosystems) as well as marine and riverine ecosystems or habitats in ways that also take into account or quantify the long term impact of such projects. The studies should, in addition, to ensure critical sectors such as tourism, migratory routes for wildlife and other areas of cultural and traditional significance are not curtailed or negatively impacted;

- 12) The provisions on waste management and environmental safeguards should take into account the safety of underground water;
- 13) The Bill should include provisions on computer and internet misuse with reference to nuclear activities. Alternatively, the Bill should cross-reference other relevant and critical laws such as the Computer Misuse and Cybercrime Act, 2018 to expand the regime on nuclear safety and safeguards involving computers security or internet and associated penalties;

CHAPTER FOUR

6.0 COMMITTEE RECOMMENDATIONS (PROPOSED COMMITTEE AMENDMENTS)

65. In light of the submissions in the Memoranda, the oral representations made before the Committee and the Committee deliberations on the Bill, the Committee recommends—

GENERAL

The Bill be amended to replace the proposed “Nuclear Regulatory Commission” with the “Nuclear Regulatory Authority”.

CLAUSE 2

THAT, Clause 2 of the Bill be amended—

- (a) by deleting the definitions of “activities” and “facilities” and substituting them with definitions of the terms “activity” and “facility”;
- (b) in the definition of “Cabinet Secretary” by deleting the word “interior” and substituting therefor the word “internal”;
- (c) by deleting the definition of “non-iodized radiation” and substituting therefor the definition of “non-ionized radiation”;
- (d) in the definition of “consumer products” by deleting the word “ionizing”;
- (e) in the definition of “clearance levels” by deleting the word “activity” and substituting therefor the word “radioactivity”;
- (f) in the definition of “radiation source” by inserting the word “not” immediately after the word “material”;
- (g) in the definition of “radioactive waste” by deleting the word “activity” and substituting therefor the word “radioactivity”;
- (h) in the definition of “source” by deleting the word “radiation”.
- (i) by inserting the following new definition in its proper alphabetical sequence—

“conditioning process” means

CLAUSE 3

THAT, Clause 3(a) of the Bill be amended by deleting the word “ionizing” appearing immediately after the word “generating”;

CLAUSE 4

THAT, Clause 4(1) of the Bill be amended by deleting the word “iodizing” appearing immediately after the word “generating”;

CLAUSE 8

THAT, the Bill be amended by deleting Clause 8 and substituting therefor the following new Clause—

8. The management of the Authority shall be vested in a Board comprising--

- (a) a non-executive Chairperson who shall be appointed by the President;
- (b) the Principal Secretary of the Ministry responsible for internal security or his representative;
- (c) the Principal Secretary of the National Treasury or his representative;
- (d) the Principal Secretary of the Ministry responsible for health or his representative;
- (e) the Principal Secretary of the Ministry responsible for education or his representative;
- (f) the Principal Secretary of the Ministry responsible for energy or his representative;
- (g) the Attorney General or his or her representative;
- (h) the Principal Secretary of the Ministry responsible for defence or his representative;
- (i) three other commissioners appointed by the Cabinet Secretary by virtue of their knowledge and possession of a minimum of ten years’ experience in matters

relating to engineering, law, radiation or nuclear related science, environmental or public safety, or finance; and

- (j) the Director General, who shall be an *ex-officio* member and the secretary to the Board.

CLAUSE 9

THAT, clause 9(2) be amended by inserting the words “nuclear science” immediately after the words “physical science”;

CLAUSE 12

THAT, clause 12 of the Bill be amended by deleting the words “Cabinet Secretary” appearing immediately after the words “with the” and substituting therefor the words “Salaries and Remuneration Commission”;

CLAUSE 16

THAT, Clause 16(1) (a) be amended by deleting the word “Parliament” and substituting therefor the words “the National Assembly”;

CLAUSE 22

THAT, Clause 22 be amended—

- (a) in subclause (2)(b) by deleting the words “of individuals”;
- (b) in subclause (4) by deleting the expression “(5)” wherever it appears;

CLAUSE 31

THAT, Clause 31(1) of the Bill be amended by deleting the expression “28’ and substituting therefor the expression “30”;

CLAUSE 32

THAT, Clause 32 of the Bill be amended—

- (a) in subclause (1) by deleting the word “licensee” and substituting therefor the words “authorised person”;

(b) in subclause (2)(a) by inserting the word “no” immediately after the words “be of”;

CLAUSE 34

THAT, Clause 34(4) of the Bill be amended by deleting the expression “(5)”

CLAUSE 35

That, Clause 35 of the Bill be amended—

(a) in subclause (1) by deleting the words “a referring medical practitioner” and substituting therefor the words “an appropriately qualified and registered clinician or medical practitioner within their respective care level”;

(b) in subclause (2) by inserting the word “radiation” immediately after the word “medical”;

CLAUSE 42

THAT, clause 42 of the Bill be amended by deleting subclause (1) and substituting therefor the following new subclause—

“(1) The Authority shall develop requirements and guidelines to be met before the issuance of mining and milling license in relation to uranium, thorium or other radioactive elements.”

CLAUSE 45

THAT, Clause 45(1) of the Bill be amended in paragraph (d) by deleting the words “additional matters relating to safety such as” and substituting therefor the words “particulars of”;

CLAUSE 47

THAT, Clause 47(3) of the Bill be amended by deleting the words “but the operation of such facility shall not be the responsibility of the Commission”;

CLAUSE 48

THAT, Clause 48(1) of the Bill be amended by deleting paragraph (b) and substituting therefor the following paragraph—

“(b) require the applicant for an authorization to construct and operate a nuclear facility to—

- (i) perform a baseline survey of the site, including radiological conditions, prior to construction; and
- (ii) develop information prior to construction for comparison with the end state after decommissioning;”;

CLAUSE 53

THAT, Clause 53(a) of the Bill be amended by deleting the word “Parliament” and substituting therefor the words “the National Assembly”

CLAUSE 57

THAT, Clause 57(b) of the Bill be amended by deleting the words “the licensee” and substituting therefor the words “an authorised person”;

CLAUSE 59

THAT, Clause 59(1) of the Bill be amended by deleting the words “that could give rise to a need for emergency intervention;

CLAUSE 62

THAT, Clause 62 of the Bill be amended by inserting the words “and the Authority” immediately after the word “public”;

CLAUSE 76

THAT, Clause 76(1) of the Bill be amended by inserting the words “prior to the grant of an authorization” immediately after the word “approval”;

CLAUSE 79

THAT, Clause 79(1) of the Bill be amended by deleting paragraph (b) and substituting therefor the following paragraph—

“(b) the discharge is confirmed to be below the radioactivity clearance level prescribed by the Authority;”

CLAUSE 99



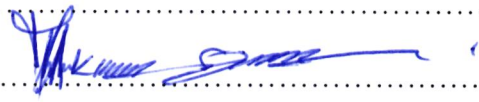
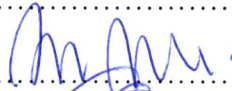

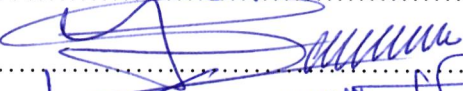



THAT, Clause 99(2) of the Bill be amended by deleting paragraph (b);

SCHEDULE

THAT, paragraph 1(1) of the Schedule to the Bill be amended by deleting the word “four” appearing immediately after the word “period of” and substituting therefor the word “three”.

**A REPORT ON THE CONSIDERATION OF THE NUCLEAR REGULATORY BILL,
2018**

During a meeting of the Committee held on..... June, 2019, the Honorable Members of the Departmental Committee on Energy, present, adopted the report by affixing their signatures to this **Report on the Consideration of the Nuclear Regulatory Bill, 2018** to affirm their approval and confirm its accuracy, validity and authenticity:

1. The Hon. David Gikaria, MP, Chairperson..... 
2. The Hon. (Dr.) Robert Pukose, MP, Vice Chairperson..... 
3. The Hon. Cecily Mbarire, M.P.
4. The Hon. Lemanken Aramat, M.P.
5. The Hon. Oscar Sudi, Kipchumba, M.P.
6. The Hon. Ekomwa Lomenen James, M.P.
7. The Hon. Vincent Musyoka Musau, M.P.
8. The Hon. Abdikhaim Osman Mohamed, M.P. 
9. The Hon. Joseph Wathigo Manje, M.P.
10. The Hon. Amina Gedow Hassan, M.P.
11. The Hon. Clement Muturi Kigano, M.P. 
12. The Hon. Gitau Faith Wairimu, M.P. 
13. The Hon. Walter Owino, MP..... 
14. The Hon. Ken Chonga, MP..... 
15. The Hon. Elisha Odhiambo, MP..... 
16. The Hon. Mohammed Ali Lokiro, MP.....
17. The Hon. Julius Musili Mawathe, MP..... 
18. The Hon. Tindi Nicholas Mwale, MP.....
19. The Hon. Elsie Muhanda, MP.....

REPUBLIC OF KENYA



**THE NATIONAL ASSEMBLY
TWELFTH PARLIAMENT**

SUBMISSION OF MEMORANDA

**In matters of consideration by the National Assembly – The
Nuclear Regulatory Bill, 2018 (National Assembly Bill No.27)**

Article 118(1) (b) of the Constitution provides that "Parliament shall - facilitate public participation and involvement in the legislative and other business of Parliament and its Committees." Standing Order 127(3)(3A) of the National Assembly Standing Orders requires a Departmental Committee to which a Bill is committed to facilitate public participation on the Bill and to take into account the views and recommendations of the public in its report to the House.

The Nuclear Regulatory Bill, 2018 (National Assembly Bill No.27), seeks to repeal the Radiation Protection Act (Cap. 243) and provide for a comprehensive regulatory framework for radiation and nuclear safety, nuclear security and safeguard to control radiation sources, nuclear materials and associated waste. The Bill aims to protect the people, property and the environment from harmful effects of exposure to radiation and to provide for nuclear safety and non-proliferation in accordance with national and international obligations.

The Nuclear Regulatory Bill, 2018 has undergone First Reading and pursuant to Standing Order 127 is now committed to the Departmental Committee on Energy.

Pursuant to Article 118(1) (b) of the Constitution and Standing Order 127(3), the Committee invites interested members of the public to submit any representations they may have on the Bill. The representations may be forwarded to the **Clerk of the National Assembly, P.O. Box 41842-00100, Nairobi**; or hand-delivered to the **Office of the Clerk, Main Parliament Building, Nairobi**; or emailed to clerk@parliament.go.ke; to be received **on or before Friday 15th February, 2019 at 5:00 pm.**

**MICHAEL R. SIALAI, EBS
CLERK OF THE NATIONAL ASSEMBLY**

MINUTES OF THE 131ST SITTING OF THE DEPARTMENTAL COMMITTEE ON ENERGY HELD IN THE UKULIMA SACCO BUILDING 8TH FLOOR BOARD ROOM ON TUESDAY 4TH JUNE 2018 AT 10.00AM

MEMBERS PRESENT

1. The Hon. David Gikaria, M.P. - Chairperson
2. The Hon. (Dr.) Robert Pukose, M.P. - Vice Chairperson
3. The Hon. Cecily Mbarire, M.P.
4. The Hon. Gitau Faith Wairimu, M.P.
5. The Hon. Lemanken Aramat, M.P.
6. The Hon. Ken Chonga, MP
7. The Hon. Vincent Musyoka Musau, M.P.
8. The Hon. Clement Muturi Kigano, M.P.
9. The Hon. Julius Musili Mawathe, MP
10. The Hon. Abdikhaim Osman Mohamed, M.P
11. The Hon. Elisha Odhiambo, MP

ABSENT WITH APOLOGY

1. The Hon. Tindi Nicholas Mwale, MP
2. The Hon. Ekomwa Lomenen James, M.P.
3. The Hon. Joseph Wathigo Manje, M.P.
4. The Hon. Walter Owino, MP
5. The Hon. Amina Gedow Hassan, M.P
6. The Hon. Elsie Muhanda, MP
7. The Hon. Mohammed Ali Lokiro, MP
8. The Hon. Oscar Sudi, Kipchumba, M.P.

IN ATTENDANCE:

NATIONAL ASSEMBLY

1. Mr. Benjamin Magut - First Clerk Assistant
2. Mr. Douglas Katho - Clerk Assistant III
3. Mr. Ronald Walala - Legal Counsel
4. Mr. David Ngeno - Research Officer
5. Mr. Rose Ometere - Audio Officer

MIN. NO. NA/ENERGY/2019/075: PRELIMINARIES AND INTRODUCTIONS

The sitting's proceedings commenced with a word of prayer and thereafter the meeting's agenda was adopted by Members present.

MIN. NO. NA/ENERGY/2019/076: ADOPTION OF THE REPORT ON THE CONSIDERATION OF THE NUCLEAR REGULATORY BILL, 2018

The Committee Members unanimously adopted the Report on the consideration of the Nuclear Regulatory Bill, 2018 on a proposal by the Hon. Cecily Mbarire and Seconded by the Hon. Dr. Robert Pukose, MP. The proposed amendments are as follows

Title

The Bill be amended to replace the proposed “Nuclear Regulatory Commission” with the “Nuclear and Radiation Regulatory Authority”.

CLAUSE 2

THAT, Clause 2 of the Bill be amended—

- (a) by deleting the definitions of “activities” and “facilities” and substituting them with definitions of the terms “activity” and “facility”;
- (b) in the definition of “Cabinet Secretary” by deleting the word “interior” and substituting therefor the word “internal”;
- (c) by deleting the definition of “non-iodized radiation” and substituting therefor the definition of “non-ionized radiation”;
- (d) in the definition of “consumer products” by deleting the word “ionizing”;
- (e) in the definition of “clearance levels” by deleting the word “activity” and substituting therefor the word “radioactivity” ;
- (f) in the definition of “radiation source” by inserting the word “not” immediately after the word “material”;
- (g) in the definition of “radioactive waste” by deleting the word “activity” and substituting therefor the word “radioactivity”;
- (h) in the definition of “source” by deleting the word “radiation”.
- (i) by inserting the following new definition in its proper alphabetical sequence—

“conditioning process” means

CLAUSE 3

THAT, Clause 3(a) of the Bill be amended by deleting the word “ionizing” appearing immediately after the word “generating”;

CLAUSE 4

THAT, Clause 4(1) of the Bill be amended by deleting the word “iodizing” appearing immediately after the word “generating”;

CLAUSE 8

THAT, the Bill be amended by deleting Clause 8 and substituting therefor the following new Clause—

8. The management of the Authority shall be vested in a Board comprising--
- (a) a non-executive Chairperson who shall be appointed by the President;
 - (b) the Principal Secretary of the Ministry responsible for internal security or his representative;
 - (c) the Principal Secretary of the National Treasury or his representative;
 - (d) the Principal Secretary of the Ministry responsible for health or his representative;
 - (e) the Principal Secretary of the Ministry responsible for education or his representative;
 - (f) the Principal Secretary of the Ministry responsible for energy or his representative;

- (g) the Attorney General or his or her representative;
- (h) the Principal Secretary of the Ministry responsible for defence or his representative;
- (i) three other commissioners appointed by the Cabinet Secretary by virtue of their knowledge and possession of a minimum of ten years' experience in matters relating to engineering, law, radiation or nuclear related science, environmental or public safety, or finance; and
- (j) the Director General, who shall be an *ex-officio* member and the secretary to the Board.

CLAUSE 9

THAT, clause 9(2) be amended by inserting the words "nuclear science" immediately after the words "physical science";

CLAUSE 12

THAT, clause 12 of the Bill be amended by deleting the words "Cabinet Secretary" appearing immediately after the words "with the" and substituting therefor the words "Salaries and Remuneration Commission";

CLAUSE 16

THAT, Clause 16(1) (a) be amended by deleting the word "Parliament" and substituting therefor the words "the National Assembly";

CLAUSE 22

THAT, Clause 22 be amended—

- (a) in subclause (2)(b) by deleting the words "of individuals";
- (b) in subclause (4) by deleting the expression "(5)" wherever it appears;

CLAUSE 31

THAT, Clause 31(1) of the Bill be amended by deleting the expression "28" and substituting therefor the expression "30";

CLAUSE 32

THAT, Clause 32 of the Bill be amended—

- (a) in subclause (1) by deleting the word "licensee" and substituting therefor the words "authorised person";
- (b) in subclause (2)(a) by inserting the word "no" immediately after the words "be of";

CLAUSE 34

THAT, Clause 34(4) of the Bill be amended by deleting the expression "(5)"

CLAUSE 35

That, Clause 35 of the Bill be amended—

- (a) in subclause (1) by deleting the words "a referring medical practitioner" and substituting therefor the words "an appropriately qualified and registered clinician or medical practitioner within their respective care level";
- (b) in subclause (2) by inserting the word "radiation" immediately after the word "medical";

CLAUSE 42

THAT, clause 42 of the Bill be amended by deleting subclause (1) and substituting therefor the following new subclause—

“(1) The Authority shall develop requirements and guidelines to be met before the issuance of mining and milling license in relation to uranium, thorium or other radioactive elements.”

CLAUSE 45

THAT, Clause 45(1) of the Bill be amended in paragraph (d) by deleting the words “additional matters relating to safety such as” and substituting therefor the words “particulars of”;

CLAUSE 47

THAT, Clause 47(3) of the Bill be amended by deleting the words “but the operation of such facility shall not be the responsibility of the Commission”;

CLAUSE 48

THAT, Clause 48(1) of the Bill be amended by deleting paragraph (b) and substituting therefor the following paragraph—

“(b) require the applicant for an authorization to construct and operate a nuclear facility to—

(i) perform a baseline survey of the site, including radiological conditions, prior to construction; and

(ii) develop information prior to construction for comparison with the end state after decommissioning;”;

CLAUSE 53

THAT, Clause 53(a) of the Bill be amended by deleting the word “Parliament” and substituting therefor the words “the National Assembly”

CLAUSE 57

THAT, Clause 57(b) of the Bill be amended by deleting the words “the licensee” and substituting therefor the words “an authorised person”;

CLAUSE 59

THAT, Clause 59(1) of the Bill be amended by deleting the words “that could give rise to a need for emergency intervention;

CLAUSE 62

THAT, Clause 62 of the Bill be amended by inserting the words “and the Authority” immediately after the word “public”;

CLAUSE 76

THAT, Clause 76(1) of the Bill be amended by inserting the words “prior to the grant of an authorization” immediately after the word “approval”;

CLAUSE 79

THAT, Clause 79(1) of the Bill be amended by deleting paragraph (b) and substituting therefor the following paragraph—

“(b) the discharge is confirmed to be below the radioactivity clearance level prescribed by the Authority;”

CLAUSE 99

THAT, Clause 99(2) of the Bill be amended by deleting paragraph (b);

SCHEDULE

THAT, paragraph 1(1) of the Schedule to the Bill be amended by deleting the word “four” appearing immediately after the word “period of” and substituting therefor the word “three”.

MIN. NO. 182/2018: ADJOURNMENT

There being no Other Business, the Chairperson adjourned the meeting at 10mins past 12Noon.

SIGNED.....

[Handwritten Signature]

(CHAIRPERSON)

DATE.....

6/6/2019

24
① D/Committee
8

Date: 15th February 2019

The Clerk of National Assembly,
The National Assembly
P.O Box 41842-00100
Nairobi

② MHEUT
pls deed
FA
22/02
25/2/19

RE: Submission on Nuclear Regulatory Bill, 2018

Nuclear Regulatory bill 2018, seeks to repeal Radiation Protection Act (Cap 243) of the laws of Kenya and incorporate regulatory issues pertaining to nuclear security and safeguards, radiation safety and nuclear waste

RadTech East Africa Co. Limited, one of the Board Licensed Service provider to offer technical Service Consultation supports repealing of current act on the following reasons:

- 1. Regulatory Body Autonomy:** In the proposed amendment the Commission shall have an autonomous setting. Therefore it shall enjoy independence and flexibility in its operations. Initiatives can be taken to tap opportunities and to improve efficiency unlike in the current arrangement.
- 2. Protection of public interest:** The bill gives the commission authority to formulate and implement policies which promote public interest welfare. Policies of the commission are subject to ministerial review and parliamentary scrutiny. Therefore it would be ensured that public interest, safety and security is protected and promoted.
- 3. Reduction of Red Taping:** Within a Commission setting, red-tapism and bureaucratic delays shall be minimized to a great extent as opposed to a government department where directives undergo bureaucratic process through the ministry. Delays in decision making process shall be avoided and therefore it is anticipated that problems shall be solved faster, opportunities can be tapped in a better manner and overall functioning of the organization shall be improved.
- 4. Ease of raising funds:** The proposed bill gives the commission power to raise funds for self-sustenance. The Commission shall be able to generate and retain funds for its obligation without requiring entire support from the treasury. This will reduce straining of the central government which already overstretched due to funding of the forty seven county governments.
- 5. Employee welfare:** The proposed bill gives the commission autonomy to develop its own recruitment policy as opposed to current recruitment process through the Public Service Commission. In the proposed setting, the commission shall recruit the best talent, provide appropriate training and attractive packages tailor-made by the commission for retention purposes. The Board as is currently structured cannot develop attractive remuneration packages which has led to loss of good talents to other local corporations and to international bodies.

On the Technical Submission, the Amendment seeks to bring the following sectors under the commission regulation:

- Regulation of non-ionizing radiation;
- Nuclear Security and safeguards
- Nuclear Energy regulatory framework
- Mining, production, refinement, conversion, enrichment, processing, reprocessing, possession, import, export, use, packaging, transport, management, storage, or disposal of a nuclear and radioactive material.

These areas were previously left out in the Radiation Protection Act Cap 243. Kenya intends to set up or facilitate setting up of Nuclear Energy in the near future hence rules and regulations governing the sector are timely. Without this bill in place, it will be impractical for our country to set up Nuclear Power sector and tap on other benefits from the nuclear sector (Generation of radioisotopes for Industrial and Medical use).

Application of non-ionizing radiation is at exponential phase worldwide especially in medicine and communication. The sector is not adequately regulated in Kenya. Further, effect of non-ionizing radiation on human health and regulation requires to be adequately captured as underscored in the proposed bill. This will allow further research surveillance and monitoring of non-ionizing radiation and their full impact on human health and the environment.

Reservations

- On Part-I preliminary (Pg-948), change the typographical error from **Non-Iodizing** to **Non-ionizing**
- **Qualification of Director General (DG) to the Commission Section 9 subsection 2a: The draft suggests that the qualification of DG shall be at least a degree in either, physical science, engineering, law, social sciences or any other relevant field. We hereby suggest that qualification be strictly restricted to persons knowledgeable on matters of Radiation and Nuclear Science. A high level of technical expertise on this subject is required for someone to benefit this post. We therefore suggest the clause to read as follows**

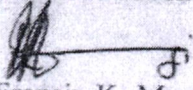
- (2) No person shall qualify for appointment under this section unless such person -
has at least a degree in either, physical science, Nuclear Science, engineering or any other relevant field;

Conclusion

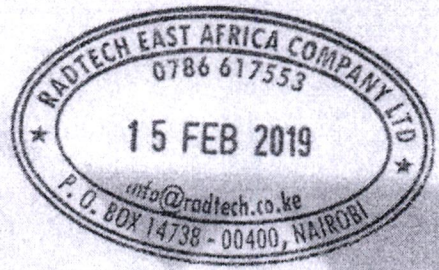
RadTech East Africa therefore supports replacement of radiation Protection act cap 243 with nuclear regulatory bill 2018 given that:

1. It is in line with the United Nations International Atomic Agency Regulation for member state governing bodies
2. The bill has been structured to respond to challenges and needs facing our country in our endeavor to peacefully harness enormous benefit emanating from the Nuclear and radiation sector in the 21st century.
3. It is our humble believe that our reservations shall be looked upon which are aimed at strengthening the proposed commission

Yours Sincerely
For RadTecch East Africa Co. Limited

 15/02/2019
Francis K. Mwangi

Director





The Kenya Association of Radiologists

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CLERK OF THE NATIONAL ASSEMBLY,
P. O. BOX 41842-00100,
NAIROBI.

clerk@parliament.go.ke

14th February 2019

Dear Sir,

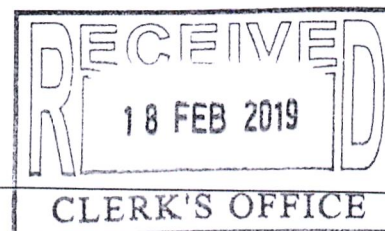
RE: SUBMISSION OF MEMORANDA BY THE KENYA ASSOCIATION OF RADIOLOGISTS(KAR) REGARDING THE NUCLEAR REGULATORY BILL (NATIONAL ASSEMBLY BILL No. 27 OF 2018)

The Kenya Association of Radiologists (KAR) is a registered association that brings together all qualified and registered Radiologists in Kenya. It guides their training, registration, practice, peer review and conduct in conjunction with the Medical Practitioners and Dentists Board. It also works actively to propagate the practice of Radiology in Kenya by holding training and workshops at different times of the year. In addition, KAR is currently working on clinical imaging guidelines that will guide medical practitioners and other healthcare providers on the clinical imaging needs of their patients.

Radiology is a medical discipline that specialises in the diagnosis, treatment and research on diseases by use of different imaging modalities and by minimally invasive interventional procedures.

Notably, it is the discipline that flags the presence of cancer in an individual that was not suspected thus is critical in early treatment of this rapidly rising medical condition in our country.

KAR has noted the proposed The Nuclear Regulatory Bill(National Assembly Bill No. 27 of 2018) and wishes to respectfully make the following submissions in matrix format which we sincerely believe will serve to improve the aims and aspirations of the proposed bill, with specific regards to **The Radiation Protection Act (Cap 243)**.





The Kenya Association of Radiologists

We respectfully request the opportunity to appear before the committee to further expound our submissions at their pleasure.

Sincerely,

Dr. Beatrice Mugi,

Chairperson, KAR.

Tel: +254 722627740

Email: Kenya.assoc.rad@gmail.com



The Kenya Association of Radiologists

THE NUCLEAR REGULATORY BILL, 2018

SECTION	PROVISION	PROPOSED AMENDMENT
2	Definitions	<ul style="list-style-type: none">“authorized person” under this act should be reworded and be specific on who bears the ultimate responsibility in handling of radiation safety for medical exposure.

REASONING & PROPOSAL

The responsibility for protection and safety from radiation is clearly defined in the Basic Safety Standards of the International Atomic Energy Agency (IAEA) with different levels of responsibility for the authorised persons. We should conform to international standards and adopt the defined roles in these standards. In the case of medical exposure, the principal responsibility is on the medical practitioner licensed under the Medical Practitioners' and Dentists' Board and should be a stakeholder in all medical imaging facilities.

PART	PROVISION	PROPOSED AMENDMENT
5	Sections 32(1) and (2) Regulatory control for radiation protection Sections 33(1) and (2) Radiation protection requirements Section 35(1), (2) and (3) Medical Exposure Section 36(1) and (2) Section 38 Responsibility for radiation sources	Ownership of imaging/ radiation medical facility to be anchored in the MPDB/ Medical Council and the Kenya Nuclear Regulatory Commission. The licensee or the authorized person shall be a medical specialist trained in diagnostic imaging and radiation medicine (relevant speciality) and licensed under the Medical Act in the case of medical exposure.

REASONING & PROPOSALS

1. The International Atomic Energy Agency has drafted the requirements for responsibilities for protection and safety from radiation. These proposals will align to these requirements. All medical imaging facilities should conform to ethical standards of practice which will be well evaluated by the MPDB/ Medical Council as well as the Kenya Nuclear Regulatory Commission.
2. The medical practitioners will take full responsibility for all medical exposures carried out at the facilities and ensure protection and safety as the principal party responsible for this.

THE END

PART	PROVISION	PROPOSED AMENDMENT
2	Section 8(k)	This should read seven other commissioners nominated by the respective professional societies in the fields of engineering, law, radiation and nuclear medicine, nuclear related sciences, environmental or public safety and finance.

REASONING & PROPOSALS

The purpose of this bill is to ensure overall safety of persons and the environment. The commissioners must be knowledgeable in all the fields relating to this safety and thus must be nominated from the professional societies associated with radiation use.

	Section 9(2)(a) Director General	i. To read 'has at least a postgraduate degree'; and ii. To include: 'health sciences' and specifically 'diagnostic radiology, and radiation and nuclear medicine'
--	----------------------------------	--

REASONING & PROPOSALS

1. This subsection is discriminatory as it leaves out holders of a qualification in health sciences who are a critical group in radiation use and safety.
2. For the purposes of this bill, a postgraduate degree is critical.

	Section 10 Staff of the Commission	The appointment of such professionals should be in line with the regulatory framework for safety, GSR Part 1 (Rev. 1) of the International Atomic Energy Agency (IAEA) Requirement 18 on Staffing and Competence of the Regulatory Body (4.11-4.15)
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REASONING & PROPOSALS

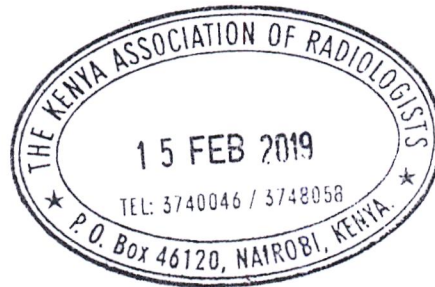
The General Safety Requirements in regard to staffing are clearly defined by IAEA, of which Kenya is a member.

PART	PROVISION	PROPOSED AMENDMENT
4	Section 28(1) Appointment of inspectors	In addition, the following should be added: 'the qualifications defining the appointment of an inspector must take cognizance of possession of requisite knowledge of the facilities and activities to be inspected'.

REASONING & PROPOSALS

The inspectors must include all stakeholders in the relevant field to maintain objectivity in the inspectorate process.

PART	PROVISION	PROPOSED AMENDMENT
16	Section 99(2)(c)	This subsection should be amended to read: 'this licence should be subject to review to ensure compliance'.
REASONING & PROPOSALS		
Under this bill, safety is a critical component of all activities and a review should be undertaken to ensure continued compliance.		



The Nuclear Regulatory Bill, 2018

A Bill for

AN ACT of Parliament to make amendments to the Nuclear-related laws.

ENACTED by Parliament of Kenya, as follows-

Short title. 1. This Act may be cited as the Nuclear Regulatory Bill, 2018.

Amendment of written laws 2. The several laws specified in the first column of the Schedule are amended in the provisions specified in the second column thereof, in the manner respectively specified in the third column.

SCHEDULE

Written Law	Provision	Amendment
The Nuclear Regulatory Bill, 2018	S.2	<p>Insert the following new definitions in proper alphabetical sequence-</p> <p>“Authorized Person” under this act should be reworded and be specific on who bears the ultimate responsibility in the handling of radiation safety for medical exposure.</p> <p>“Applicant” Introduce two categories of an applicant to differentiate applicant 1 to stand for the licensee and applicant 2 to stand for the authorized person.</p> <p>“Licensee” means persons or organisations bearing the prime responsibility for the safety of specified activities under this bill.</p> <p>Delete the word iodizing to read ionizing</p> <p>‘non-ionizing radiation’ should be removed as it does not form part of the objects and the purposes of the bill in sections 3(a) and (b) and section 4(1).</p>

'Justification' is the process of determining that facilities and activities that give rise to radiation risk yield an overall benefit. This definition should be added.

'Radiation' under this bill shall mean ionizing radiation. The objects and purposes of the act and the applications of the act defines this term.

S. 32, 33, 35
36, & 38

Ownership of imaging/ radiation medical facility to be anchored in the MPDB/ Medical Council and the Kenya Nuclear Regulatory Commission.

The licensee or the authorized person shall be a medical specialist trained in diagnostic imaging and radiation medicine (relevant speciality) and licensed under the Medical Act in the case of medical exposure.

S. 8 (k)

This should read seven other commissioners nominated by the respective professional societies in the fields of engineering, law, radiation and nuclear medicine, nuclear related sciences, environmental or public safety and finance.

S. 9 (2) (a)

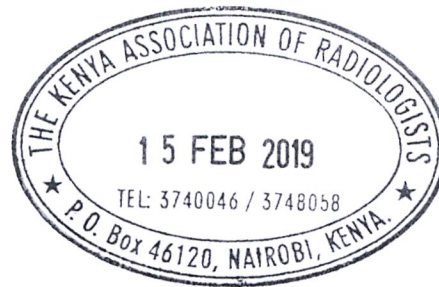
To read 'has at least a postgraduate degree and to include: 'health sciences' and specifically 'diagnostic radiology, and radiation and nuclear medicine'.

S. 10

The appointment of such professionals should be in line with the regulatory framework for safety, GSR Part 1(Rev. 1) of the International Atomic Energy Agency

(IAEA) Requirement 18 on Staffing and Competence of the Regulatory Body (4.11-4.15)

- S. 28 (1) In addition, the following should be added: ‘the qualifications defining the appointment of an inspector must take cognizance of possession of requisite knowledge of the facilities and activities to be inspected’.
- S. 99 (2) (c) This subsection should be amended to read: ‘this licence should be subject to review to ensure compliance’.

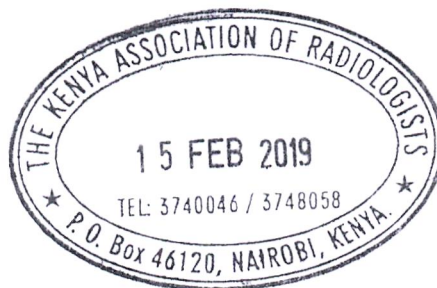


(Repeal of Cap 243)

Part 1 Preliminary

Under section 2, Interpretation:

- a) **'authorised person'** – For the purpose of the bill, this title demean the letter of this bill and assumes the role of a **'licensee'** as defined by the **International Atomic Energy Agency's Safety Standards Series, No. SF1**, in **Principle 1** on Responsibility for safety. It states that the licensee bears prime responsibility, and this cannot be delegated. **Section 3.6 of Principle 1** of the IAEA Safety Standards defines the licensee's responsibilities. The term **'authorised person'** should be reserved to the persons responsible for safety of the different activities under this bill.
- b) **'applicants'** - Introduce two categories of an applicant to differentiate applicant 1 to stand for the licensee and applicant 2 to stand for the authorized person.
'Licensee' – means persons or organisations bearing the prime responsibility for the safety of specified activities under this bill.
- c) **'iodizing radiation'** to read **'ionizing radiation'**
- d) **'non-ionizing radiation'** should be removed as it does not form part of the objects and the purposes of the bill in sections 3(a) and (b) and section 4(1).
- e) **'justification'** is the process of determining that facilities and activities that give rise to radiation risk yield an overall benefit. This definition should be added.
- f) **'radiation'** under this bill shall mean ionizing radiation. The objects and purposes of the act and the applications of the act defines this term.





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THE CLERK OF THE NATIONAL ASSEMBLY,
KENYA NATIONAL ASSEMBLY,
PARLIAMENT BUILDING,
P.O BOX 41842 -00100
NAIROBI, KENYA.

② M.Ahuti
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25/2/19

DEAR SIR,

MEMORANDUM ON THE NUCLEAR REGULATORY BILL 2018 (NATIONAL ASSEMBLY BILL NO. 27).

We wish to express our appreciation to the Kenya national assembly and departmental committee on energy for the opportunity to present comments on the nuclear regulatory bill 2018.

Destine Kenya limited is a company started and is in compliance with the Kenyan laws and regulations. It is a technical service provider for RADIATION PROTECTION BOARD established under the radiation protection act CAP 243 of the laws of Kenya. The board is the national competent authority on matters of radiation safety, security of radioactive and nuclear materials, control of consumer goods and the environment contaminated with radioactivity, and other related matters.

Destine Kenya limited, having been licenced by the RADIATION PROTECTION BOARD OF KENYA, offers radiation safety consultancy, radiation analysis, QA/QC of radiation

instrumentation, as well as calibration services. Destine Kenya limited is one of the technical service providers subcontracted by the RADIATION PROTECTION BOARD and situated at the point of entries to offer radiation analysis of foods and chemicals for cargo imports and exports.

Destine Kenya limited wishes to support the nuclear Regulatory Bill 2018 because The Radiation Protection Act CAP 243 of 1982 needs to evolve in order to catch up with today's technological advancement. The world is changing drastically. Every day we are advancing. We therefore need to embrace the changes and establish laws and regulations to mitigate the day to day technological milestones. This is a great step towards placing our country on the map for advanced nuclear establishments and management.

Yours faithfully!

JANE MUMBI NYAMBURA.



OPERATIONS MANAGER,
DESTINE KENYA LIMITED.

NUCLEAR REGULATORY BILL, 2018
SUBMISSIONS BY THE RADIATION PROTECTION BOARD
TO THE DEPARTMENTAL COMMITTEE ON ENERGY
THE NATIONAL ASSEMBLY

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NUCLEAR REGULATORY BILL, 2018

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List of Acronyms

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- IAEA - International Atomic Energy Agency
- ICNIRP - International Commission on Non-ionizing Radiation Protection
- MORC - Materials out of regulatory control
- NIR - Non-ionizing Radiation
- NORM - Naturally Occurring Radioactive Material
- SAGA - Semi Autonomous Government Authority
- TENORM - Technically Enhanced Naturally Occurring Radioactive Material

Introduction

The safe, secure and peaceful use of Radiation and Nuclear technologies hold the promise of significant benefits, in a variety of fields, from medicine, agriculture, industry, research, telecommunication and electricity production.

However, as is well known, radiation poses special risks to the health and safety of persons and to the environment. Risks that must be carefully managed and mitigated.

Uncontrolled exposure to radiation, radioactive or nuclear materials, beyond established limits, may lead to birth defects/abnormalities, cancers, debilitating health effects, death or long-term contamination of the environment - rendering contaminated places uninhabitable for hundreds or thousands of years.

A robust, effective and efficient national regulatory system is a level enabler and an active professional incentive for investment in radiation-based and nuclear-based technology in all social-economic sectors.

Additionally, such a robust national regulatory regime is an effective deterrent and a legal safeguard against malicious actors, illicit traffickers, terrorists and would-be proliferators of weapons of mass destruction. It demonstrates Government commitment to contribute to the international regime for Radiation and Nuclear Safety and Security and ultimately to peace, stability and development.

Promulgation of the Nuclear Regulatory Bill, 2018 will go a long way to close legal and regulatory gaps; address changes in the regulated radiological and nuclear space. Current regulatory law (Radiation Protection Act, Cap 243, was passed in 1982 – some 36 years ago!

1. Radiation Protection Board as the national Regulatory Authority, and Government advisor on Radiation Protection, Nuclear Safety, Nuclear Security, Nuclear Safeguards (non-proliferation) and radioactive waste management, is a Semi-Autonomous Government Authority (SAGA) under the Ministry of Health.
 - a) As a SAGA, the Radiation Protection Board does not enjoy the requisite regulatory independence nor adequate administrative control in regulatory oversight for Protection, Safety, Security and Safeguards.
 - b) International Best practice and International Basic Safety Standards published by International Atomic Energy Agency (IAEA) require Member States to ensure effective independence of the Regulatory Authority from user Ministries, promotional and operational entities.
 - c) Nuclear Safety, Nuclear Security and Nuclear Safeguards (non-proliferation) are not captured in the current Radiation Protection law.

Promulgation of the Nuclear Regulatory Bill, 2018 fulfills the above requirements by:

- (i) enhancing the Radiation Protection Board from a SAGA to a State Corporation by conferring the powers necessary to make it effectively function as a body corporate;
- (ii) Incorporating into the new law all radiation and nuclear safety and security thematic areas not currently regulated by existing laws.

2. **User Ministries and Effective Regulatory independence:** The Ministry of Health is the largest user of radiation technologies for diagnostic and treatment of disease. Placement of the Regulatory Authority as a SAGA under a large-scale user Ministry limits its regulatory independence and effectiveness. Again, IAEA recommends that Member States ensure effective independence of the Regulatory Authority from user Ministries, organizations promoting radiation and nuclear applications and any entity owning or operating the regulated facilities or activities.

The Bill proposes to place the Regulatory Authority under a neutral line Ministry (Interior) to guarantee effective regulatory independence and align with international best practice and IAEA published recommendations

3. Use of Radiation and Nuclear technologies contributes significantly to accelerated socio-economic development in the world. However, if let out of regulatory control, such material and technologies can lead to devastating health and environmental effects, including serious security challenges. Radioactive material out of regulatory control also present fertile ground for accidents, acts of terror or sabotage, which may have far-reaching public and environmental consequences for considerable time.

Promulgation of the Nuclear Regulatory Bill will close the legal gaps and regulatory loopholes to effectively ensure all known radioactive and nuclear material in the country are accorded regulatory oversight commensurate with level of risk to human and environmental health and security.

Part IV of the Bill – on Regulatory Control effectively addresses this requirement.

4. **Nuclear Security:** The security of radiological and nuclear materials, and associated technologies, is now a major concern to the world because

nuclear materials present the most devastating Weapons of Mass Destruction (WMD). It is known that non-state actors are actively engaged in acquiring technology and radioactive/nuclear materials to make dirty bombs (conventional explosives + radioactive materials) for non-peaceful uses and acts of terror.

Radiation Protection Act Cap. 243 was amended by the Security Laws (Amendment) Act, 2014 to incorporate law enforcement, intelligence, KDF and Border personnel to address issues of nuclear security. This without specific legal provisions for nuclear security.

Nuclear Security extends to Border surveillance, especially in major ports of Entry/Exit. Ideally this should be done for all entry/exit ports and along other border areas under risk-based approach.

Serious sources of radiation exposure to the public and to the environment come from operations gone wrong in radiological and nuclear facilities. Example, the 2011 Fukushima Daiichi and the earlier 1986 Chernobyl nuclear disasters, were as a result of:

- (i) lack of effective regulatory independence from Government-owned nuclear energy promoters, and
- (ii) failure in critical operational procedures

The effects of these two accidents are still being experienced to date.

It is informative to note that the Radiation Protection Board has intercepted radio-contaminated imported goods and other items from the two incidents and such goods are returned to Ports of origin.

Part VII of the Nuclear Regulatory Bill, 2018 therefore provides for:

- (i) Nuclear Security and Physical Protection**
- (ii) Border surveillance**
- (iii) Combatting illicit trafficking**

in accordance with IAEA published recommendations and International best practice.

5. Comprehensive Law for Radiation and Nuclear technology transfer

The 1982 Radiation Protection Act, is inadequate with regard to challenges in advanced technological development, nuclear security, emerging technologies, nuclear terrorism, improving standards, and accounting for nuclear material (Safeguards).

This inadequacy also slows down the process of radiation and nuclear technology transfer into Kenya thus slowing down on essential related services and affecting development.

Promulgation of the Nuclear Regulatory Bill, 2018 ensures that contemporary issues (technological, security, international obligations and best practice) that require legislation as pre-requisite to technological transfer are anchored in law.

6. Commitment to national obligations under International Legal Instruments (Treaties, Agreements, Conventions, Protocols)

a) Kenya is party to:

- (i) to the Treaty on Non-Proliferation of Nuclear Weapons (ratified 1970) or the Non-Proliferation Treaty (NPT) - a landmark International Treaty whose objective is to prevent the spread of nuclear weapons and weapons technology and to promote cooperation in the peaceful uses of radiation and nuclear energy.
- (ii) African Nuclear Weapon Free Zone (Nov 2000)
- (iii) Basel Convention on the Control Trans-Boundary Movements of Hazardous Wastes and their Disposal (Jan 2000)
- (iv) International Convention for the Suppression of Acts of Nuclear Terrorism (April 2006)
- (v) UN Security Council Resolution 1540 (April 2006)
- (vi) The Comprehensive Safeguards Agreement (CSA) under the Treaty on Non-Proliferation of Nuclear Weapons

b) There are relevant International Legal Instruments that Kenya needs to ratify in the area of radiation and nuclear safety and security:

- (i) The Convention on Nuclear Safety, 1994 (the CNS).
- (ii) The Convention on Early Notification of a Nuclear Accident (the Early Notification Convention).
- (iii) The Convention on Assistance in the Case of a Radiological Emergency or Nuclear Accident (the Assistance Convention).
- (iv) Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, 1997 (the Joint Convention).

Promulgation of the Nuclear Regulatory Bill, 2018 will therefore demonstrate Kenya's commitment to:

- (i) fulfill national obligations under International Legal Instruments
- (ii) contribute to global regime for radiation and nuclear safety, security, combatting illicit trafficking in radioactive/nuclear material and the suppression of nuclear terrorism.

7. Enhancing Technical Capacity and Regulatory Infrastructure

The highly trained and skilled technical HR capacity stands at only 22 (twenty-two) countrywide – by no means adequate compared with the scope and depth of regulatory activities.

Regulatory Infrastructure for radiation protection, analytical and nuclear forensic laboratories, radioactive waste management, among other regulatory functions, require to be enhanced or developed.

The Nuclear Regulatory Bill provides for Government commitment to enhance existing capabilities and to develop critical safety and security infrastructural requirements.

8. Kenya's Nuclear Power Programme for Electricity Generation

The Kenya Nuclear Electricity Board (KNEB) is a state Corporation under the Ministry of Energy with a clear mandate of fast

tracking the development of nuclear power in order to enhance the production of adequate, affordable and reliable electricity.

The Nuclear industry is heavily regulated – Safety, Security, Safeguards.

Regulating the nuclear power programme is a responsibility which is, among other things, very knowledge and skill intensive with a very diverse array of required competencies.

The Nuclear Regulatory Bill, 2018 provides for Government to commit adequate resources to safety, security and non-proliferation considerations in the peaceful utilization of nuclear power for electricity generation.

9. Regulation of NIR, NORM & TENORM

The Nuclear Regulatory Bill provides for regulation of exposure to Non-ionizing Radiation (NIR), naturally occurring radioactive materials in mining and hydrocarbon activities and to enhance regulatory functions through support services in radiation protection.

a) Non-Ionizing Radiation is not regulated under any Law in Kenya.

Provision of regulatory coverage will ensure public health and safety.

MRI (Nuclear Magnetic Resonance Imaging) and Ultrasonography, to mention a few in medicine, Radar systems, Microwaves and applications in research, telecommunications and industry, all fall under this category. Health concerns, experiences and clinical manifestations (real or imagined) in the public domain abound.

b) Naturally Occurring Radioactive Material (NORM) Regulation

- (i) Radon (a naturally occurring radioactive gas) has been identified by the World Health Organization (WHO) as the second lung cancer killer after smoking.

It is found in workplaces and dwellings (homes, offices, mines, tunnels, caves) and it is a genuine public health concern which requires regulation.

- (ii) Naturally occurring deposits of minerals also contain radioactive minerals.

Activities such as burning coal, manufacture and use of fertilizers, oil and gas production enhance radioactivity concentrations in the environment which may result in undesired public health consequences.

- (iii) Technologically Enhanced naturally occurring radioactive material (TE-NORM) are materials where the amount of radioactivity has been increased or further concentrated as a result of human activity or industrial processes.
- (iv) In oil and gas exploration Naturally Occurring Radioactive Materials (NORM) and TE-NORM may accumulate at various locations along the oil and gas production process. Oil, a naturally occurring liquid mineral itself, the accompanying gas are generally contaminated with radionuclides in the earth crust.

Section 42 of the Nuclear Regulatory Bill 2018 provides the platform to develop sector specific requirements and guidelines as well as regulations on radiation safety for protection of the public, and environment from harmful effects of exposure to these sources of radiation.

10. Regulation of Consumer Products

There are a number of products into which radionuclides have been deliberately incorporated to enhance their 'consumer properties'. Such products are used by the public without surveillance or regulatory control. These include smoke detectors, lamp mantles, wrist watches, wall clocks, Of concern is misuse, after-use handling, and disposal options.

The Nuclear Regulatory Bill provides for the control of Consumer Products incorporating radionuclides.

Radioanalysis of Foodstuff and other consumer goods and items

The country imports foodstuffs such as powdered milk, fertilizers, fruits, cereals and drinks through various ports of entry. Similarly, a lot of consumer goods such as scrap metal, motor vehicles and electronics are also imported. There have been several incidents where elevated levels of radioactivity have been detected in these products.

The milk powder imported from Ukraine after the 1986 Chernobyl Nuclear Accident and the Motor vehicles originating from Japan after the 2011 Fukushima Daiichi Disaster are examples.

These incidences prompted the Radiation Protection Board to begin radioanalysis and screening of all imports to ensure that they are not contaminated with radioactivity. Foods or goods found to be contaminated are refused entry into the country. However, inadequate legislation, as well as an acute shortage of human resource capacity has slowed implementation of surveillance activities at the major ports of entry/exit. To overcome such challenges, the Radiation Protection Board has partnered with other MDAs at Ports for surveillance. However, statutory provisions for such partnerships and radiation surveillance activities need to be anchored in law.

Section 34 of the Nuclear Regulatory Bill 2018 brings forth the surveillance and control aspect of consumer products with radionuclides in order to protect the public against unnecessary radiation exposure.

The Bill also provides an avenue to develop regulations on radioactivity levels in foodstuff and consumer products as well as licensing process for export or import of such items.

11. Radioactive Waste Management

Radioactive waste is substantially produced in medical (nuclear medicine and radiotherapy), research, industrial and other radiological facilities. Such waste is hazardous and if not managed properly can affect the health of a nation's people and future generations and their environment. The Radiation Protection Board has taken the lead role in managing this waste by setting up a Central Radioactive Waste Processing Facility in Oloolua Forest.

The CRWPF facility is a strategic enabler in achieving universal health coverage through the safe and secure containment and temporary storage of radioactive waste, disused and orphan radiological sources and radioactive/nuclear materials from medical facilities and other institutions which otherwise pose great danger to the public and environment

Further, the CRWPF is host to the Regional (Africa) Centre for training in Radiation Safety, Nuclear Security and Nuclear Forensics and combating illicit trade in radioactive/nuclear materials.

Part XII of the Nuclear Regulatory Bill provides for protection of people, property and the environment against nuclear and radiological hazardous materials.

12. Decommissioning and Remediation

The decommissioning of nuclear and radiation facilities result into a wide range and quantity of radioactive materials which may be considered as waste, or may be recycled or reused when it continues to have an economic value. The amount of decommissioning waste can be very substantial, and therefore consideration of appropriate strategies for its minimization becomes a very important issue. These radioactive materials may end up being out of regulatory control, materials out of regulatory control (MORC), and hence pose a great danger to members of the public, property and the environment. Major radiological accidents in the world are caused by MORC which normally end up in scrap yards and other vulnerable locations in the environment.

Part VII of the Nuclear Regulatory Bill 2018 provides for the establishment of a fund to deal with all expenses associated with decommissioning and remediation. This fund will cater for the safety of the source from authorization stage to end of use; that is from *cradle to grave*.

13. Radiological Emergency Preparedness and Response

The emergency management system in Kenya is defined by the National Emergency Response Plan (NERP), drafted by National Disaster Management Unit (NDMU) and adopted in June 2014. The plan gives NDMU overall leadership for preparedness and response to natural and man-made hazards.

The objective of the NERP is to administer a comprehensive emergency/disaster programme in collaboration with stakeholders in order to save lives, protect property and safeguard development gains. However, the plan does not address radiological or nuclear emergencies.

There are two sector specific national emergency plans that have been developed to address radiological or nuclear emergencies. These plans are the Draft National Radiation Emergency Plan (NREP) and the Draft Kenya National Chemical, Biological, Radiological, and Nuclear (CBRN) Response Plan. The two drafts are under review for purposes of harmonization.

The IAEA Emergency Preparedness and Response peer review mission carried out in Kenya (2015) by a team of international experts recommended to the Government that there should be a national plan that addresses radiological emergency preparedness and response consistent with existing all-hazards arrangements in the country.

The Nuclear Regulatory Bill, Part IX, provides a framework on classification of radiological and nuclear emergencies: preparedness, response, technical support, trans-boundary notification and information to the public.

14. Conclusion and Recommendations to the Committee

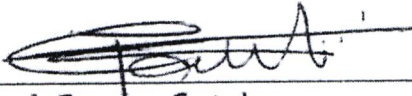
The Departmental Committee on Energy is invited to note the contents of this memorandum and more specifically:

- a) That the Radiation Protection Board endorses and fully supports promulgation of the Nuclear Regulatory Bill, 2018.
- b) That the Radiation Protection Board is ready and willing to be called upon by the Committee to make oral presentation of this memorandum.

- c) That passage of the Bill by the National Assembly will provide the Regulatory Authority with the required autonomy, effective independence and expanded force of law to address gains and challenges in radiation protection, nuclear safety, nuclear security, non-proliferation and nuclear terrorism – for the well-being of all in Kenya, now and in the future.

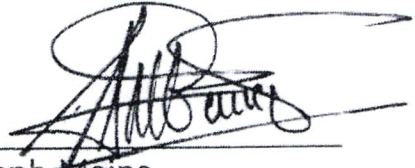
The Committee may wish to Visit the Regional Centre for Radiation Safety and Nuclear Security situated at the CRWPF, Ololua Forest.

Signed:



Prof. Erastus Gatebe
Chairman, Radiation Protection Board

Dated: 15/02/2019



Joseph Maina
Board Secretary

Dated: 16th Feb 2019



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**MEMORANDA ON THE NUCLEAR REGULATORY
BILL, 2018 (NATIONAL ASSEMBLY BILL NO. 27)**

February 2019

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1 INTRODUCTION

Following the call for a memoranda published in the local dailies in the matter of consideration by the National Assembly ^{GOVT} The Nuclear Regulatory Bill, 2018 (National Assembly Bill No. 27), we the Eastern Africa Association for Radiation Protection (EAARP) present a Memoranda in support of the Bill as it will safeguard and protect the interest of Kenyans from harmful effects of ionizing radiation as the country continues to explore the peaceful use of nuclear science and technology.

The EAARP is a registered corporate body with a mandate to provide for the protection of man and his environment from the hazards caused by radiation, and thereby to facilitate the safe use and peaceful application of science and technology in the country and beyond. The association also undertakes regular review on radiation protection measures and makes recommendations to implement improvements and develop protocols within our practices.

The Nuclear Regulatory Bill, 2018 (National Assembly Bill No. 27) will provide an enhanced legal framework for regulating activities related to nuclear energy and ionizing radiation in a manner which, if followed to the letter, will adequately protect individuals, property and the environment from the harmful effects of ionizing radiation. The proposed Bill meets the international set standard as it has been drafted with close collaboration with the International Atomic Energy Agency (IAEA) which is the world's central inter-governmental forum for scientific and technical co-operation in the nuclear field. The IAEA works for the safe, secure and peaceful uses of nuclear science and technology, contributing to international peace and security and the United Nations' Sustainable Development Goals.

The Nuclear Regulatory Bill, 2018 (National Assembly Bill No. 27) will also create a robust legal framework for the safe use of radiation sources as well as cater for the envisioned introduction of nuclear electricity generation into the national grid. Importantly, the Bill elevates the Radiation Protection Board (RPB), which is the existing regulator for utilization of conventional sources of radiation, by conferring legal authority that allows it to additionally exercise regulatory control over nuclear electricity generation.

However, the over-representation (10 persons) of the Executive arm of the Government on the proposed seventeen member Commission may hamper its performance as regards independence as will be outlined below and our prayer is that recommendations provided are considered. Additionally, housing the Commission in the Ministry responsible for Interior where the enforcement of all legal instruments done by Parliament may stifle matters to do with nuclear science and technology research as well as institutions in education, human health, agriculture, industry, water resource management and energy will be compelled to relate with the Commission with perception of being policed, an environment that may not be conducive for the nuclear applications in those thematic areas.

2 THE ENVISIONED LEGAL BENEFITS AND BACKING THE NUCLEAR REGULATORY BILL, 2018 (NATIONAL ASSEMBLY BILL NO. 27) WILL ACHIEVE.

2.1 Establishment of a Nuclear Regulatory Body (The Nuclear Regulator)

Nuclear application worldwide must be regulated by a competent, independent and legally established entity. The Nuclear Regulatory Bill 2018 seeks to establish a regulatory body (Nuclear Regulator) with the legal powers and technical competence necessary to ensure that operators of nuclear facilities and users of nuclear material and ionizing radiation operate and use them safely and securely. The bill in Clause 8.1 of Part II proposes a 17 members commissions, 10 from the Executive Arm of the government. Nevertheless by having 10 members of the Executive arm of government out of the 17 member Commission, the technical competencies may be severely compromised as only three (Energy, Health, Education) of the ten members from the Executive arm may have knowledge of nuclear matters while the remainder (Chairperson, Interior, Treasury, Attorney General, National Intelligence, Defence Forces and Revenue) may all not be conversant with nuclear science and technology. Moreover the standard practice of most Ministries appointing Administrators to represent the Principal Secretary may even dilute the technical competencies of the three (Energy, Health, Education).

The Bill also expressly codifies the principle of regulatory independence by providing for effective separation of the functions of the regulatory body and those of any other body or organization concerned with the promotion or utilization of nuclear energy in the country which is lacking in the current legal status. High performing regulators are a key control to inspire innovation across the economy and foster productivity growth, through timely approval processes, flexible styles to new issues and a service focus. Good regulatory outcomes rest on more than well designed rules and regulations.

Once the Bill is enacted the assurance and confidence building to the public and the international community in respect to the application of nuclear science and technology will be enhanced once the nuclear regulator is entranced in the law. Transparency International ranks Kenya 154 out of 182 countries that were surveyed on the Corruption Perception Index. Our overall score improved only a fraction of a percent from last year, despite a zero-tolerance campaign by the current government administration in Kenya. The Kenyan police scored an 81 percent corruption rate, gaining the infamous title of the most corrupt institution in Kenya, as well as reaching in the top ten bribery-prone institutions within all of East Africa. After the police, the Ministry of Lands, and the Judiciary branch fell among the most corrupt institutions within Kenya. Domiciling the Commission in the Ministry of Interior will not improve its Public perception.

2.2 Radiation Protection

The Nuclear Regulatory Bill 2018 seeks to ensure that the facilities and activities that give rise to radiation risks must yield an overall benefit. This is expressly indicated to provide that the benefits from the use of a nuclear technology must outweigh the radiation risks to which they give rise. For the purposes of assessing benefit and risk, all significant consequences of the operation of facilities and the conduct of activities have to be taken into account as stipulated in the law. EAARP is involved in regular review on radiation protection measures and making recommendations to implement improvements and develop protocols within various practices, foremost being reference dose levels for patients undergoing common diagnostic X-ray examinations. The main and primary uses of effective dose in radiological protection for both occupational workers and the general public are:

- 50 50 prospective dose assessment for planning and optimization of protection; and
- 50 50 retrospective dose assessment for demonstrating compliance with dose limits, or for comparing with dose constraints or reference levels.

Thus, effective dose and equivalent dose have been used for regulatory purposes worldwide, and the latter is used in the current dose compliance formalism. In essence, the calculation of effective dose for external exposure, as well as dose coefficients for internal exposure, are based on absorbed dose, weighting factors, and reference values for the human body and its organs and tissues. Baseline studies have been done in many regions of Kenya and data obtained is available to RPB and should be enhanced when the Nuclear Regulator will be in place before the introduction of nuclear power plants.

2.3 Safety of Nuclear Facilities and Decommissioning

The Bill seeks to ensure that the prime responsibility of safety rests with the licensee. This is in line with the international best practice to ensure that the public and environment are protected from radiation hazards. The Nuclear Regulatory Bill 2018 also provides that the regulatory body is responsible for setting safety standards and for enforcing them (ensuring compliance by operators of nuclear facilities) within the legislative and regulatory framework. The prime responsibility for safety must rest with the person or organization responsible for facilities and activities that give rise to radiation risks. The licensee retains the prime responsibility for safety throughout the lifetime of facilities and activities, and this responsibility cannot be delegated.

The Bill has also provided for a well-defined framework under which all nuclear facilities are supposed to be decommissioned. The establishment of a decommissioning fund is a

welcomed idea and when properly and legally implemented it will ensure that the public and the environment is sustainably protected. The costs of decommissioning are generally spread over the lifetime of a facility and saved in a decommissioning fund. After a facility has been completely decommissioned, it is released from regulatory control and the plant licensee is no longer responsible for its nuclear safety.

2.4 Emergency Preparedness and Response

The Nuclear Regulatory Bill 2018 recognizes that nuclear and radiological emergencies and accidents may have a detrimental impact not only on the facilities in which they occur, but also on the environment. Radiological emergencies occur when there is, or is perceived to be, a hazard due to radiation exposure from radioactive sources. Although nuclear and radiological emergencies are quite rare occurrences, the impact of these emergencies can potentially be very high, and the response and recovery can be lengthy.

Nuclear and radiological events differ from most other emergencies in several ways:

- It is difficult to identify radioactive material and determine radiation levels without specialized equipment, which may cause delays in the warning of the public.
- Symptoms of exposure may not immediately be noticeable. Victims may therefore not seek treatment right away, and this can deteriorate their chances of recovery.
- The psychosocial effects of nuclear and radiological events can be substantial, with possible intense fear in the population and stigma surrounding the victims.

To this end, the Bill has put in place a system that is designed to reduce the risk of emergencies and to mitigate their consequences. The Bill has provided that arrangements are in place for an effective response at the scene and, as appropriate, at the local, regional, national and international levels, to a nuclear or radiation emergency; The Bill further seeks to ensure that, for reasonably foreseeable incidents, radiation risks would be minor; and for any incidents that do occur, to take practical measures to mitigate any consequences for human life and health and the environment.

Importantly, the Bill addresses on-site and off-site emergency preparedness through requiring an operating organization to prepare and maintain approved on-site and off-site emergency plans that are periodically reviewed and updated. The proposed nuclear regulatory body is also charged with advising and coordinating the response to radiological emergencies and nuclear accidents.

These assessments serve as a basis for physical protection planning for nuclear material and facilities and implementation, review and monitoring of measures to be taken by relevant governmental authorities.

2.8 Safeguards (Non-Proliferation)

The Nuclear Regulatory Bill commits exclusively to peaceful uses of nuclear technology in accordance with the obligations under the Treaty on the Non-Proliferation of Nuclear Weapons which Kenya has ratified.

The Bill prohibits direct or indirect control of nuclear weapons and other nuclear related explosive devices, as well as their manufacture or acquisition.

3 CONCLUSION

The Nuclear Regulatory Bill, 2018 (National Assembly Bill No. 27) provides a sound basis for developing a legal framework that is not only at par with advancements in the application(s) of radiation uses, but also fosters the stringent regulatory oversight required for nuclear electricity generation.

With the aforementioned key benefits and legal backing the Nuclear Regulatory Bill, 2018 (National Assembly Bill No. 27) intends to achieve, the EAARP strongly supports its enactment as it will foster public application of nuclear energy subject to inclusion of the recommendations below:


The radioactive waste management programme should be comprehensive and coherent in fostering safety. EAARP suggestions for further enhancing the programme to include good practices identified globally which should have the following elements:

- ☐ A clear government commitment to the national strategy and programme for waste management, including safe disposal.
- ☐ The development of a transparent national waste inventory.
- ☐ Deliberate efforts towards maintaining a high level of professional, competent staff.

EAARP further submits that the Nuclear Regulator should be empowered to:

- EO 41 Facilitate implementation of the requirement for decommissioning to take place in the shortest time possible.
- EO 41 Optimize management of very low level wastes.
- EO 41 Consider mechanisms to address disposal liabilities for small waste producers.

As concerns the over representation by the Executive arm of Government the EAARP recommends that *Mwongozo*, the Code of Governance for State Corporations be adhered to. *Mwongozo* incorporates the principles of corporate governance in the management and governance of State Corporations in Kenya. EAARP emphasizes that *Mwongozo* is an integral part of the reform recommendations developed by the Presidential Task Force on Parastatal Reforms and should guide the number of membership to the Nuclear Regulator. By reducing the number of members from the Executive arm of Government to a minority the aims of *Mwongozo* to entrench principles and values of Public Service and best practices in management of the Nuclear Regulator will be assured, EAARP further submits.

EAARP recommends that the first principle is the establishment of clear roles and responsibilities. Distinction of the roles of the Commissioners (board members) and those of the Management should be clearly laid down in their functions. The Commission when discharging its fiduciary duties and when discharging leadership functions, EAARP submits, the difference should be clear. The Commissioners should come up with a Code on the Ethical Standard and then ensure its compliance. Members ought to access information and advice when they need the same. The Commissioners have to oversee the Nuclear  also incumbent on the Commissioners to ensure succession planning on Senior Management.

EAARP advocates the second principle that the Commissioners be recruited by a Nominating Committee. This would strengthen the composition of the Commissioners and EAARP further recommends that a majority of the Commissioners should be independent. The Nominating Committee should develop, maintain and review the criteria to be used in the recruitment process and annual assessment of the Commissioners since nuclear matters are sensitive.

EAARP strongly recommends a third principle that places responsibility on the Commissioners to reinforce independence. The Commissioners should have the duty to undertake an assessment of its independent members annually. Term limits should be imposed on the independent Commissioners to a cumulative term of 10 years. The

independent Commissioner may however continue to serve after the lapse of their term but after the re-designation as non-independent. The position of the CEO and the Chairman should be held by different individuals, whereby the Chairman must be a non-Executive member. EAARP emphasizes that the insistence on independence ensures independent and have to be assessed. Most Intelligence gatherers, EAARP submits, do not meet the foregoing and hence the National Intelligence Service should not sit on the Commission overtly.

EAARP recommends a fourth principle that the Commissioners foster commitment, where the Nuclear Regulator sets out expectations on time commitment for its members and the protocols for accepting new directorships. Very important, under this principle EAARP, submits the Commission should ensure that members have access to appropriate continuing education programmes.

EAARP submits the fifth principle is on integrity and financial reporting where the Audit Committee must ensure financial statements comply with applicable reporting standards. The Audit Committee should have policies and procedures to assess the suitability and independence of external auditors. The Audit Committee is called upon to observe the highest degree of integrity and ensure that the source of financial information is reliable.

EAARP recommends the sixth principle is for the recognition and management of risks where the Commissioners should establish a sound framework for risk management.

EAARP further submits a seventh principle on timely and high quality disclosure. The Nuclear Regulator, EAARP avers, should ensure appropriate disclosure policies and procedures and that leveraging on information technology for effective dissemination of information is in tandem with modern times.

With this our Hand we do endorse the Nuclear Regulatory Bill, 2018 (National Assembly Bill No. 27) and pray that the suggested recommendations are incorporated in the final Bill sent for accent to H.E. the President of the Republic of Kenya.

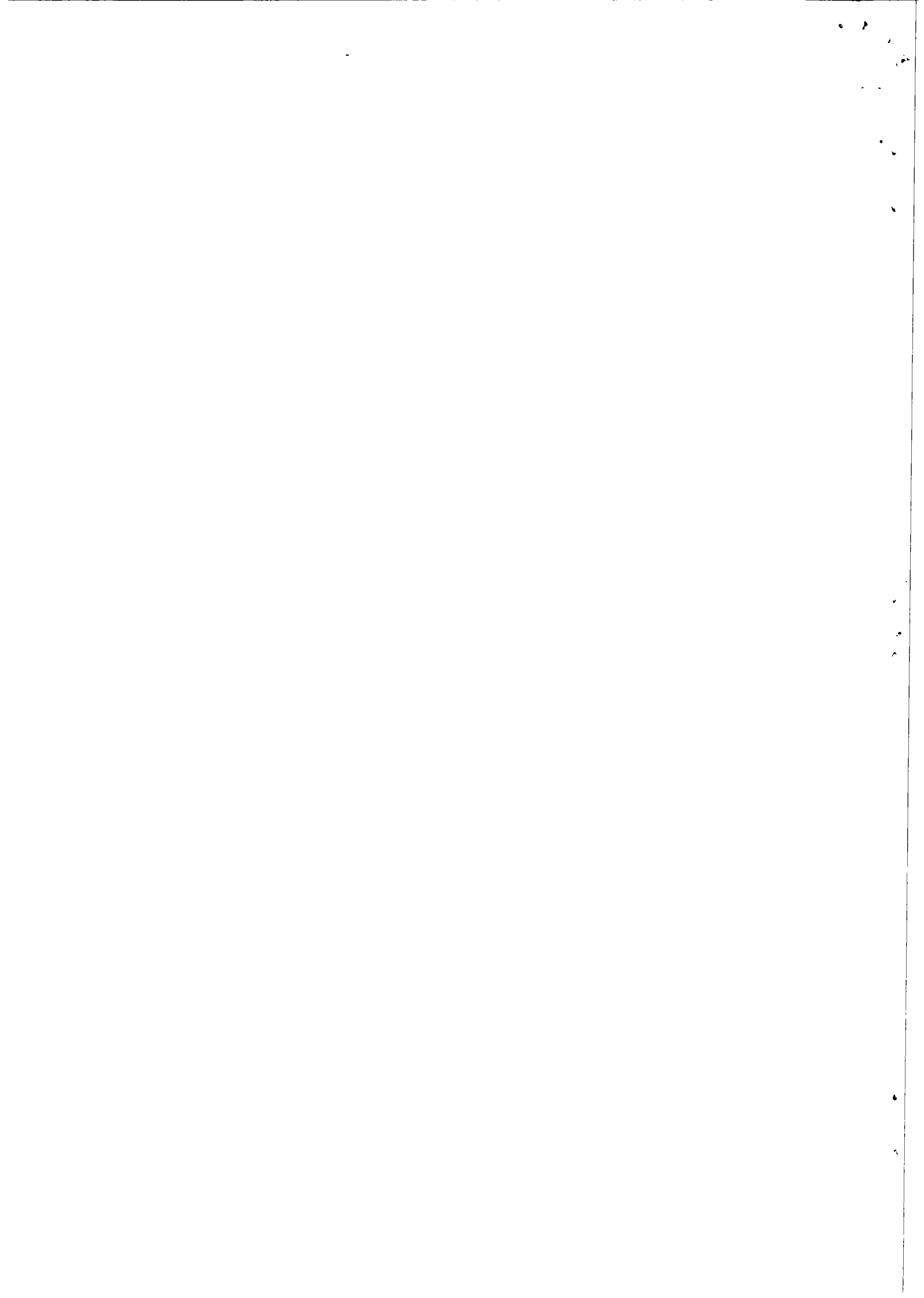
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	commencement of the financial year to which they relate and shall be submitted to the Cabinet Secretary for approval.	approval?
20	The Commission may invest any of its funds in securities, trust funds or banks which the National Treasury may from time to time approve for that purpose.	Is the Treasury to approve the decision to invest or the assets that the Commission decides to invest in? Clarity needed
21(1)	A person who intends to engage in any activity shall submit a notification to the Commission of his intention to carry out such activity.	Nuclear related or involving radioactive materials. Too general
22(1)(b)	A person shall not carry out an activity unless the activity has been exempted, wholly or partially from regulatory control, by the Commission	No provisions for exemptions, is it on application, or is it unilateral by the Commission?
23	Categories of authorization and reporting requirements	Exemptions not covered
26	A person aggrieved by a decision of the commission under this Part shall have the right to apply to the Commission for a review of the decision.	Should be an appeal, not review. There are very limited grounds within which a review may be granted
27	Statement on objectives of inspection and enforcement	Should provide that the Commission reserves the right to undertake inspection of authorized activities without notification to the authorized person. This right includes the right to undertake enforcement of the terms of the authorization.
29	Appointment of inspectors	What about conditions of authorization?
30	Enforcement by an inspector	Should detail the period within which the inspector can order for the temporary suspension of activities, say 2 weeks. Inspector should submit report no more than 3 days after the inspection, in any event he is accompanied by an employee of the Commission
31	Upon receipt of an inspection report under by section 28,	Should be under section 30 Should provide a time frame within which a decision should be made by the Commission

32	A licensee shall ... (2) regulatory exemptions	Licensee not defined. Is it the same as authorized person? Is the authorization a license? Unclear when regulatory exemption is granted
33	An authorization of an activity by the Commission under this Act	Regulatory issues, not necessarily part of the Act. Consistent use of terms; authorization or licensing
34	No consumer products shall be offered to the Consumer public unless their use by members of the public has been produced, justified and either their use has been exempted or their provision to the public has been authorized by the Commission.	What constitutes consumer products? Is this authorization different from the s.21 authorization?
35	Medical exposure	Too vague
36	Exposure to neighboring states	Reconcile with s. 21
38	An authorized person shall bear the primary Responsibility for responsibility for ensuring the safe and secure use of radiation sources.	See s. 25
42	The Commission shall develop guidelines to be additionally met before the issuance of mining and milling license in relation to uranium, thorium or other radioactive ores.	Mining of radioactive materials should not be subject, but be in addition, to the provisions of other written laws on mining
43	Authorization of nuclear activity	Reconcile with s. 21
44	Primary responsibility	See s. 25, 38
45	Site evaluation report for power plants	Too many vague requirements Can be done via Regulations
46	Authorization for construction and operation	Separate the section into two; one for construction, and another for operation
47	Technical preservation programme for extended shutdown for reactors	Deals with research reactor only? Commission should not assume responsibility for the safe management of a reactor in extended shutdown, it should be the authorized person
48	Decommissioning requirements	48(1)(b) should cross-reference to the relevant application for authorization

		49(3) "any other additional regulatory requirements" be replaced with all other regulatory requirements
49	Initial decommissioning plan	Synchronize with the application for authorization procedure
50	Decommissioning Responsibilities	Notification of intended decommissioning should be made to the Commission within a given time period to enable Commission prepare to monitor decommissioning activities.
51	Finances for decommissioning	Perhaps a bonding/insurance requirement will be more useful
52-56	Decommissioning fund	Reconcile with s. 51. Is this to be borne out of public funds or rather the authorized persons? The Commission is to assume financial responsibility for all "the management of radioactive waste and spent fuel" regardless of source.
57	Emergency preparedness and response	Refine role of Commission
58	The Commission shall not authorize any activity, operation, facility, or possession or use of a source unless an appropriate emergency preparedness and response plan has been developed by the applicant and approved by the Commission.	Plan should be prepared when seeking authorization. Can be updated upon construction
59	An on-site and off-site emergency plan shall be prepared in the prescribed form and manner for any facility, activity, or source <i>that could give rise to a need for emergency intervention.</i>	Italicized words limits need for a plan
62	Every authorized person shall regularly inform the public about the significant facts of its emergency preparedness and response plan.	They should also inform the Commission. The Commission should take the lead in communicating, not the authorized person
63	The Commission shall make regulations for transportation of radioactive material in accordance with international standards.	Relevant international standards?
64	64. (1) A person shall not - undertake the design of any packaging or	64(1)(a) &(b) unclear

	package; operate or maintain any packaging or package; Duty to exercise reasonable care by carrier		There should be a requirement for approval of a carrier by the Commission
65			Commission should approve
66	Radiation protection transport plan		The Commission should be informed asap of an emergency
67	Emergency response in transportation		Commission should approve transportation protocols
68	Segregation of materials		Revise, especially that the Commission will have no recourse in third state transfers
70	Export of controlled items to require licenses		Which authorization by the Commission?
71	A person shall not import a controlled item unless the designated recipient of the controlled item is holder of a valid authorization issued by the Commission		
72	Illicit trafficking		Refine
73	(1) The Commission can declare waste containing naturally occurring radioactive material as radioactive waste		Refine/define criteria or discretion that the Commission has on this declaration
76	Waste management plan		Suggests that the waste management plan is required after authorization, not before
78	In selecting a conditioning process, an authorized person shall ensure that safety will be improved from the use of a matrix material and compatibility of the radioactive waste with the selected materials and processes.		"Conditioning process" not defined
79	(1)(b) "... the activity discharged is confirmed to be below clearance level."		The Commission should establish clearance levels below which no clearance is required from the Commission

