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1. Background and Goal of the present work

Nigeria seeks to meet future energy needs and develop a diversified, steady, secure and sustainable electric power supply for sundry use for industrial and socio economic development through the use of nuclear science and technology. Electricity generation in Nigeria is very low to the extent that it could hardly support Nigeria’s quest for industrial and economic growth. 80% of power generation comes from gas; most of the remainder comes from oil, 20% hydro, solar, wind and other renewable sources. Proper management of spent nuclear fuel and radioactive wastes from planned and existing nuclear installations is essential for ensuring radiation safety, protection of human health and the environment.

2. National Development Objective and Strategy

Nation’s economic prosperity has variously been articulated by national developmental plans in order to guarantee a sustainable future.

-Pre-Independence Plans under Colonial Administration

The colonial administration in Nigeria first made an attempt to draw up a blue print as a comprehensive development plan in Nigeria as the **Ten-Year Development and Welfare Plan** (1946-55), revised (1951-55) and followed by the (1955-60) plan.

-Post-Independence Plan

HOWEVER, after independence, the promotion of high-quality, effective and inclusive economic and social development for the stabilization of society became expedient. The first post-independent National Development Plan was the (1962-68), Second National Development Plan (1970-74), Third National Development Plan (1975-80), and Fourth Development Plan (1981-85). The three-year "rolling plan" was introduced 1990-92, Followed by 1991-93 rolling plan.

2.1 Alignment of National Development Plan to SDGS

Other Development Objectives include: National Economic Empowerment and Development Strategy (NEEDS) (2003- 07), Nigeria Vision 20:2020 (NV20:2020), Nigeria Industrial Revolution Plan (NIRP: 2014 – 2019), Economic Recovery and Growth Plan (ERGP: 2017 – 2020).

Nigeria’s National socioeconomic development programmes are aligned with relevant sectoral, national, and international development strategies in Food and Agriculture, Health and Nutrition, Water and Environment, Manufacturing, Industry and Energy Planning and Development including: United Nations Sustainable Development Cooperation Framework (UNSDCF), United Nations Development Assistance Framework (UNAF), Sustainable Development Goals - SDGs Goals, International Atomic Energy Agency (IAEA)

2.2 Nations commitment to safety in Management of RW & SF

The challenge associated with the operation of nuclear power plants, research reactors and other facilities that use radioactive sources is that they all generate radioactive wastes, spent fuel and disused sources.

- Nigeria recognizes the potential hazards of RW & SNF to human health and the environment; and the need for safe, secure and sustainable management of Radioactive waste & Spent Nuclear Fuel for the protection of the environment, present and future generations.
- Therefore, Nigeria is committed to ensuring that the management of radioactive waste, spent nuclear fuel and other radioactive sources will be conducted in a safe, secure and transparent manner. The commitment will be demonstrated by making sure that management of RW, SNF, DSRS and spent radioactive materials are carried out in line with international best practices.

This will demonstrate Nigeria’s commitment to safety, security and complete operational transparency required to gain domestic support and assure the international community, potential bilateral partners and international nuclear supervisory bodies of the peaceful intentions of any nuclear program undertaken by the country.

2.3 Legislative and Regulatory Framework

- Nigeria Atomic Energy Commission Act no. 46 of 1976 (Cap N91 LFN, 2004) established NAEC for the development and promotion of atomic energy and all matters relating to the peaceful use of atomic energy.
- *Nuclear Safety and Radiation Protection (NS&RP) Act no. 19 of 1995 (Cap N142 LFN, 2004)*, established the Nigerian Nuclear Regulatory Authority (NNRA) as an independent regulatory body and the *National Institute for Radiation Protection and Research*.

4. Conclusions and Acknowledgements

Nigeria has over the decades joined other member states of IAEA in peaceful uses of Nuclear Science & Technology for socio economic development. The country recognizes that the waste and spent nuclear fuel generated from the operation of its Nuclear Installation needs to be safely and securely Managed in order to guarantee a sustainable future.

International Conference on the Safety of Radioactive Waste Management, Decommissioning, Environmental Protection and Remediation: Ensuring Safety and Enabling Sustainability, CN-318
 Vienna, Austria; 6-10 November 2023

3. Radiation Safety

The Nigerian Radioactive Waste Management Regulations 2006 is the chief regulatory instrument - "reference document" for the regulation of radioactive waste management in Nigeria. Other regulations include:

- Nigerian Transportation of Radioactive Sources Regulations 2006;
- Nigerian Safety Regulations for the Management of Naturally Occurring Radioactive Materials (NORM) Regulations 2008; and
- Nigeria Ionizing Radiation Regulations 2003

The Nigerian Nuclear Regulatory Authority (NNRA) has fully adopted the Regulatory Authority Information System (RAIS) and has established the System of Authorization, Inspection and Enforcement.

NNRA has also established the "Nigeria Safety and Security of Radiation Sources Regulations (2006)" where it domesticated the "Code of Conduct on the Safety and Security of Radioactive Sources".

3.1 Regional Training Course on Conditioning of Disused Sealed Radioactive Sources

- A Regional AFRA Training Course was held in Zaria Nigeria 24 -28 October 2022 for the demonstration of conditioning of category 3-5 disused sealed radioactive sources (DSRS) under the project RAF9068.
- The purpose of the training is to provide hands-on training, knowledge and skills for handling and managing category 3 to 5 DSRS safely and securely
- It was also used to provide information and demonstrate procedures for Members States to use to prepare their facilities and practice the procedures and make available all requirements to conduct their operation in the future.



Dismantling of Source



Operation

3.2 JOINT CONVENTION AND OTHER INTERNATIONAL INSTRUMENTS

Nigeria is committed in the enthronement of a strict safety, security and safeguards regime in the implementation of its nuclear power programme in full compliance with all relevant treaties and international conventions and in partnership with the international community.

- Nigeria has been participating at meeting of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.