



STATUS OF NIGERIAN NUCLEAR POWER PROGRAM

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NIGERIAN NUCLEAR REGULATORY AUTHORITY

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INTRODUCTION



- ▶ Nigeria is embarking on a nuclear power program and has established the Nigerian Atomic Energy Commission as the promoting agency for the nuclear power program.
- ▶ The Nigerian Nuclear Regulatory Authority (NNRA) is established by the Nuclear Safety and Radiation Protection Act 19 of 1995 and is the regulatory body responsible for nuclear safety, security and safeguards.
- ▶ Nigeria is in Phase 2 of the IAEA Milestone Approach. In bid to enhance Nigeria's commitment towards the NPP programme



FUNCTIONS OF THE NNRA

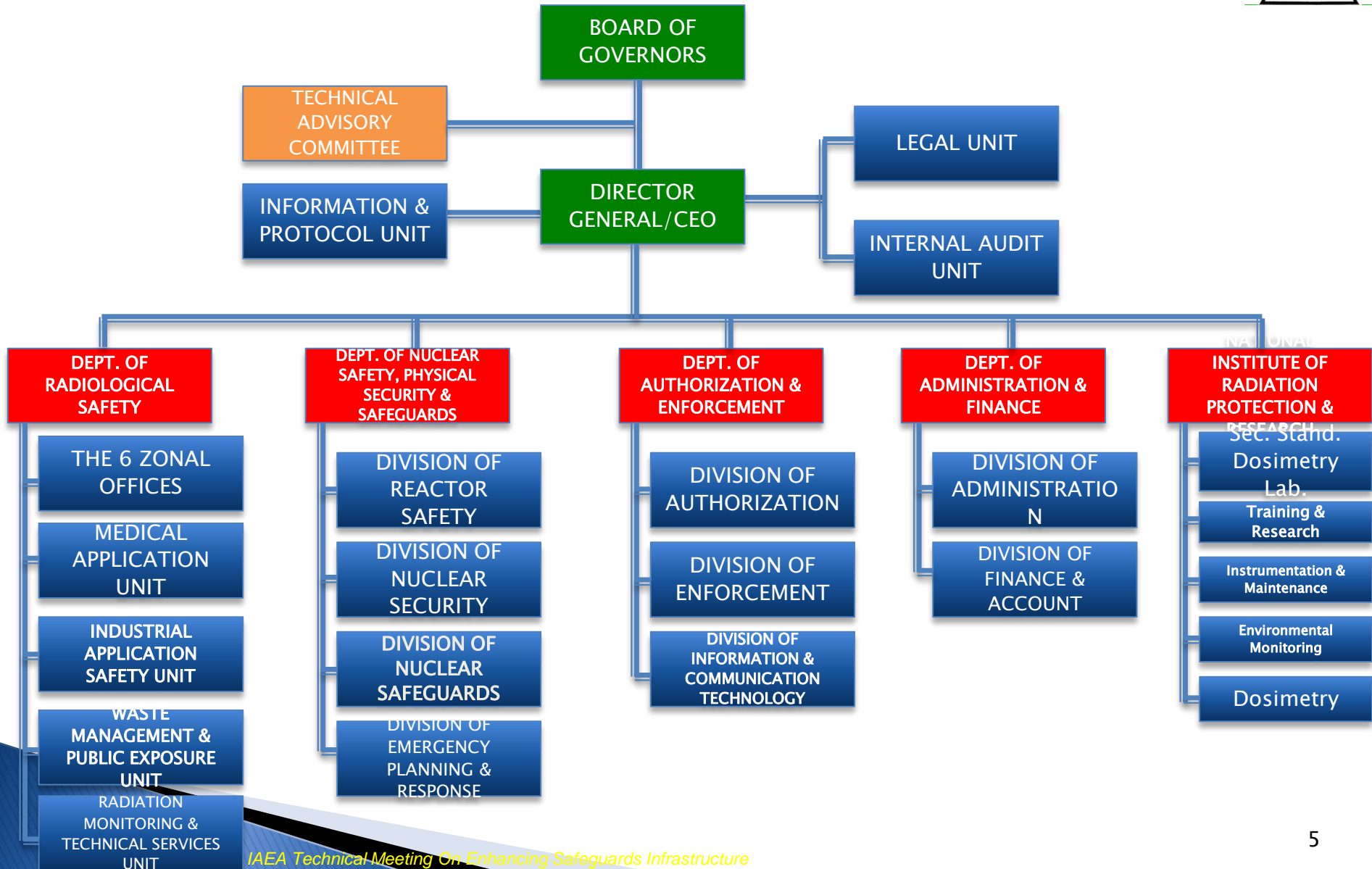
The functions of the NNRA includes:

- ✓ Protection of life, health, property and the environment;
- ✓ Enable Nigeria meet its **International and National safeguards and safety** obligations in the application of nuclear energy and ionizing radiation;
- ✓ Advice the Federal Government on nuclear security, safety and radiation protection matters;
- ✓ Liaise and foster co-operation with International and other organizations having similar objectives; etc

POWERS OF THE NNRA

- ✓ Issuing codes of practice which shall be binding on all users of radioactive and prescribed substances, and of sources of ionizing radiation;
- ✓ Categorize and license activities involving exposure to ionizing radiation; the import, export of nuclear material and radioactive waste;
- ✓ Reviewing and approving safety standards and documentation;
- ✓ Providing training, information and guidance on nuclear safety and radiation protection;

NNRA ORGANOGRAM





REGULATORY CONTROL REGIME

- ▶ NNRA has established a regulatory control regime for all activities and facilities involving the use of nuclear materials and ionizing radiation

Regulations and
Guides

Authorizations

Function
(Inspection,
Review &

Emergency Planning
and Response

Ancillary Function

The NNRA is developing the following regulations and guides for the construction of NPP in Nigeria



- Nigerian Safety of Research Reactors Regulations, 2021
- Nigerian Uranium Exploration Mining and Processing Regulations, 2021
- Nigerian Physical protection of Nuclear Materials and Facilities Regulations, 2021
- Nigerian Nuclear Safeguards Regulations, 2021
- Draft Guidance Document on Nigerian Nuclear Safeguards
- Draft Guidance Document on Nuclear Material Accounting for and Control
- Nigerian Safety Regulations for Licensing of Site for Nuclear Power Plants, 2021

The NNRA is developing the following regulations and guides for the construction of NPP in Nigeria



- ▶ Draft Guidance on the Licensing Process for NPP in Nigeria
- ▶ Draft Safety Regulations on the Design and Construction of NPP in Nigeria
- ▶ Draft Regulations on Integrated Management System for Nuclear Facilities
- ▶ Draft Safety Regulations on: - Commissioning of NPPs; - Operations of NPPs; - Decommissioning of NPPs; - Licensing of Reactor Operators

SITE SURVEY PROCESS FOR NIGERIA NPP

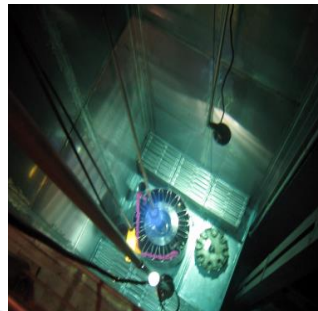
- ▶ Nigeria Atomic Energy Commission (NAEC) conducted initial site survey and evaluation of 7 locations in Nigeria
- ▶ Four candidate sites were designated for detailed characterization, investigation, evaluation and recommendation to government.
- ▶ The sites are located in the areas around:
 - ✓ **Geregu/Ajaokuta, Kogi State, North Central Zone**
 - ✓ **Itu, Akwa Ibom State, South-South Zone**
 - ✓ Agbaje, Okitipupa, Ondo State, South West Zone
 - ✓ Lau, Taraba State, North-East Zone.



USES OF NUCLEAR AND RADIATION SOURCES IN NIGERIA



- ☐ Health Sector
- ☐ Petroleum Industry,
- ☐ Mining Sector,
- ☐ Manufacturing Sector,
- ☐ Construction Industry,
- ☐ Agriculture and Water Resources,
- ☐ Education and Research
- ☐ Customs and Security Screening



Nigerian Nuclear Research Reactor



- ▶ Nigeria has a 34kw miniature neutron source research reactor that became critical in 2004. The reactor is for:
 - Training and Research
 - Neutron Activation Analysis
- ▶ The Reactor core was converted from using HEU to LEU fuel in 2018
- ▶ This reactor has is used to provide basic training in nuclear technology and manpower development for the nuclear power program.

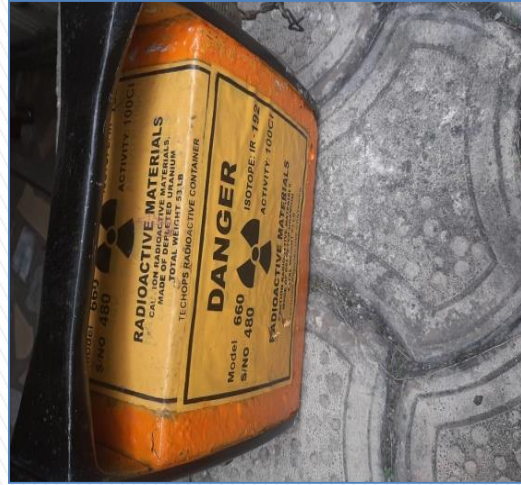
DOMESTIC SAFEGUARDS INSPECTION



➤The inspection is carry out in Industries and Hospitals using Depleted Uranium for radiation shielding purposes.

➤Depleted Uranium used in Transport container, Radiography camera and Medical Tele-therapy head shield.

➤Physical Inventory Verification are carried out on quarterly bases.



Conclusion



- ▶ Nigeria is an embarking country for nuclear power program regulatory infrastructure is been put in place
- ▶ IAEA assistance and other international related organization is further required to cement the infrastructure that has been developed
- ▶ A systematic assessment of regulatory competence needs for nuclear safety has been conducted and strategies to bridge the identified gaps has been developed
- ▶ We therefore required further assistance in implementing these areas to enable Nigeria get to the level that is required in NPP



***THANK YOU FOR YOUR
ATTENTION!!!***