



**NIGERIAN NUCLEAR REGULATORY AUTHORITY  
(NNRA)**

**DEVELOPMENT OF REGULATORY  
FRAMEWORK FOR THE NUCLEAR  
POWER PROGRAMME**

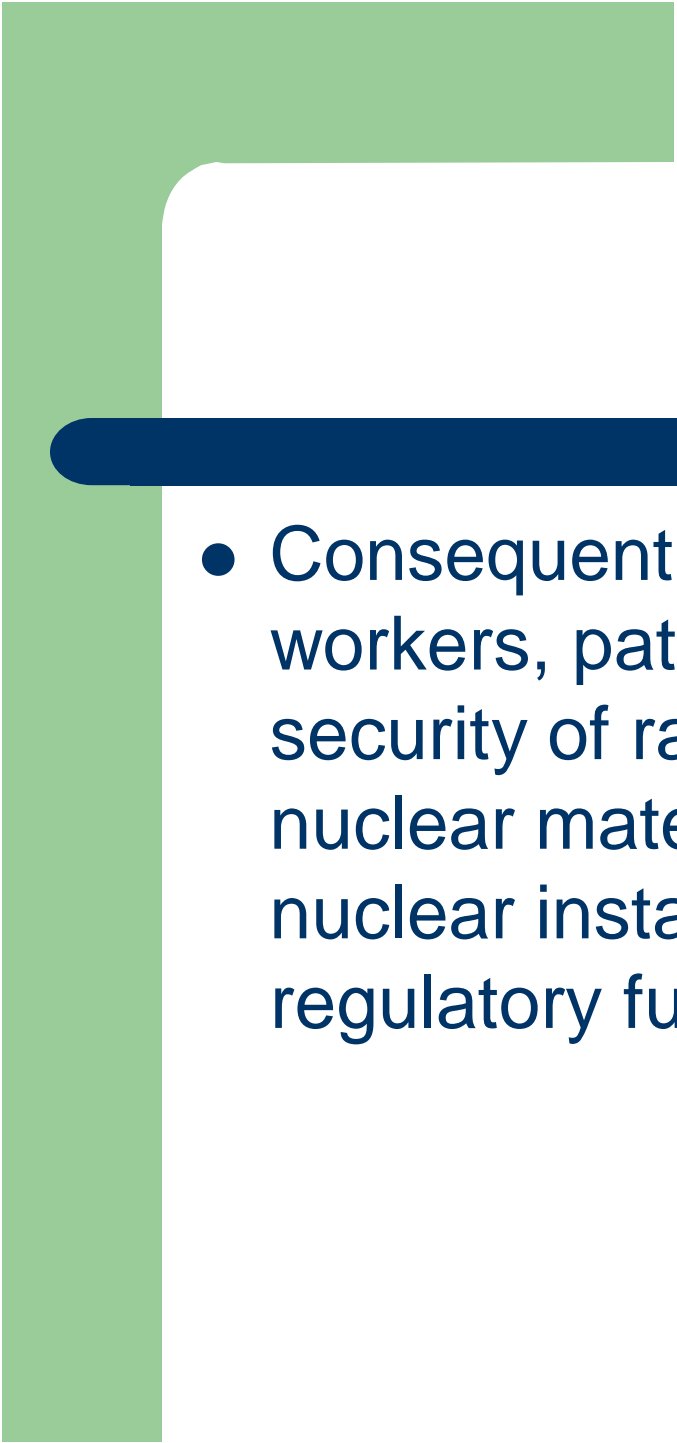

**BY  
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**NNRA IN-HOUSE SEMINAR**

# Introduction



- The Nigerian Nuclear Regulatory Authority (NNRA), was established in 2001 by the Nuclear Safety and Radiation Protection Act, No19 of 1995 (Act) with the responsibility for nuclear safety and radiological protection regulation.

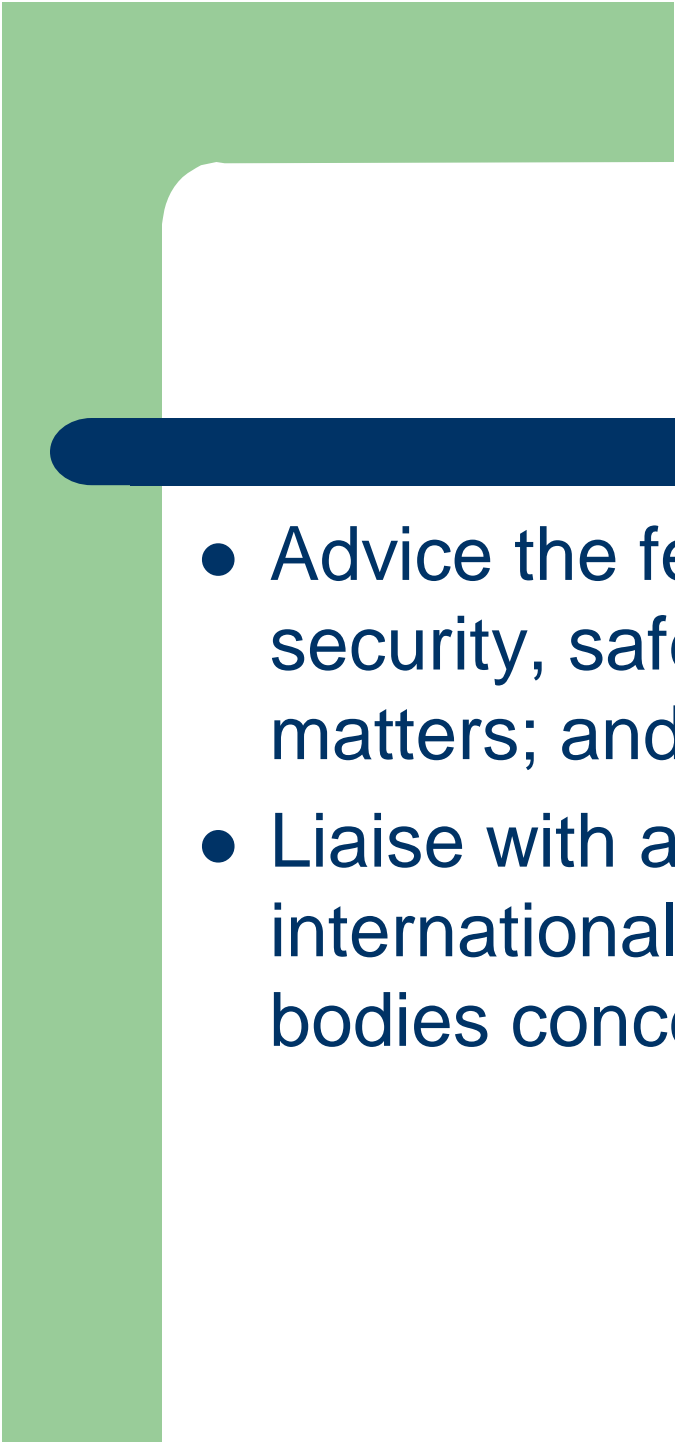

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- Consequently, radiation protection of workers, patients and the public, safety and security of radioactive sources, safeguard of nuclear materials and physical protection of nuclear installations constitute the major regulatory functions of NNRA.

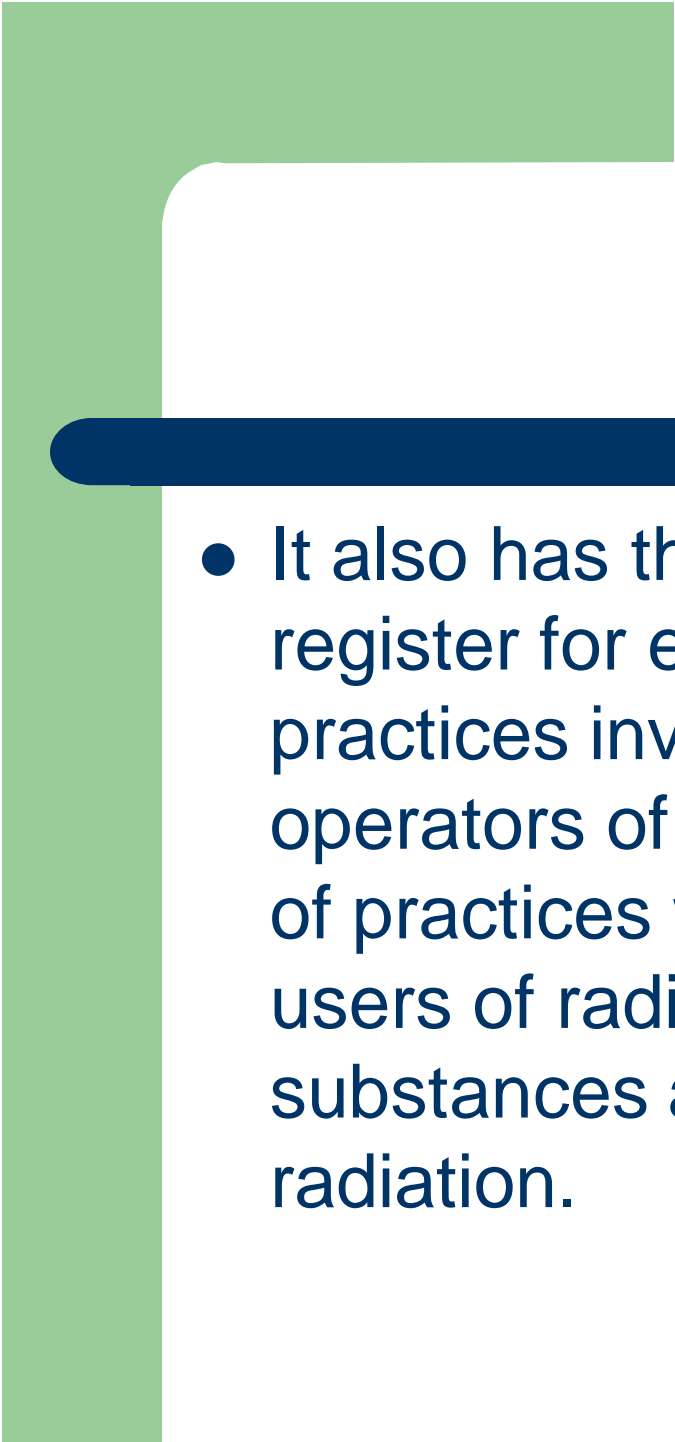

# Functions

The Act provide specifically the following functions for the NNRA;

- Regulate the possession and application of radioactive substances and devices emitting ionizing radiation
- Ensure protection of life, health, property and the environment from harmful effects of ionizing radiation while allowing beneficial practices involving exposure to ionizing radiation

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- Regulate the safe promotion of nuclear research and development and the application of nuclear energy for peaceful purposes
  - Perform all necessary functions to enable Nigeria meet its national and international safeguards and safety obligation in the application of nuclear energy and ionizing radiation

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- Advise the federal government on nuclear security, safety and radiation protection matters; and
  - Liaise with and foster cooperation with international and other organizations or bodies concerned having similar objectives.

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- It also has the power to establish appropriate register for each category of sources or practices involving ionizing radiation, licence operators of practices and also issue codes of practices which shall be binding on all users of radioactive and prescribed substances and of source of ionizing radiation.

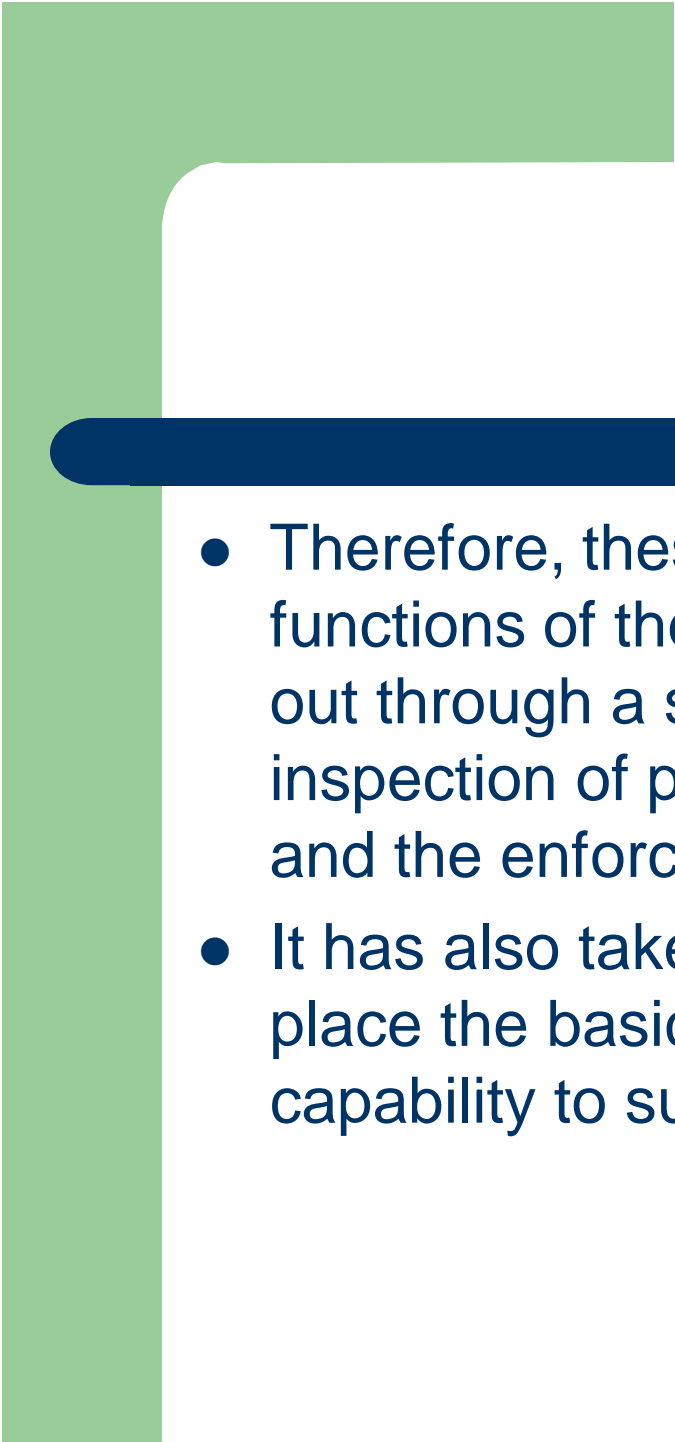

# Our Mandate

- To set requirements and insure compliance, the NNRA:
- Sets and documents clear requirements, using a process that includes consultation
- Cooperates with other organizations and jurisdictions to foster the development of consistent regulatory requirements
- Indicates acceptable ways to meet regulatory requirements

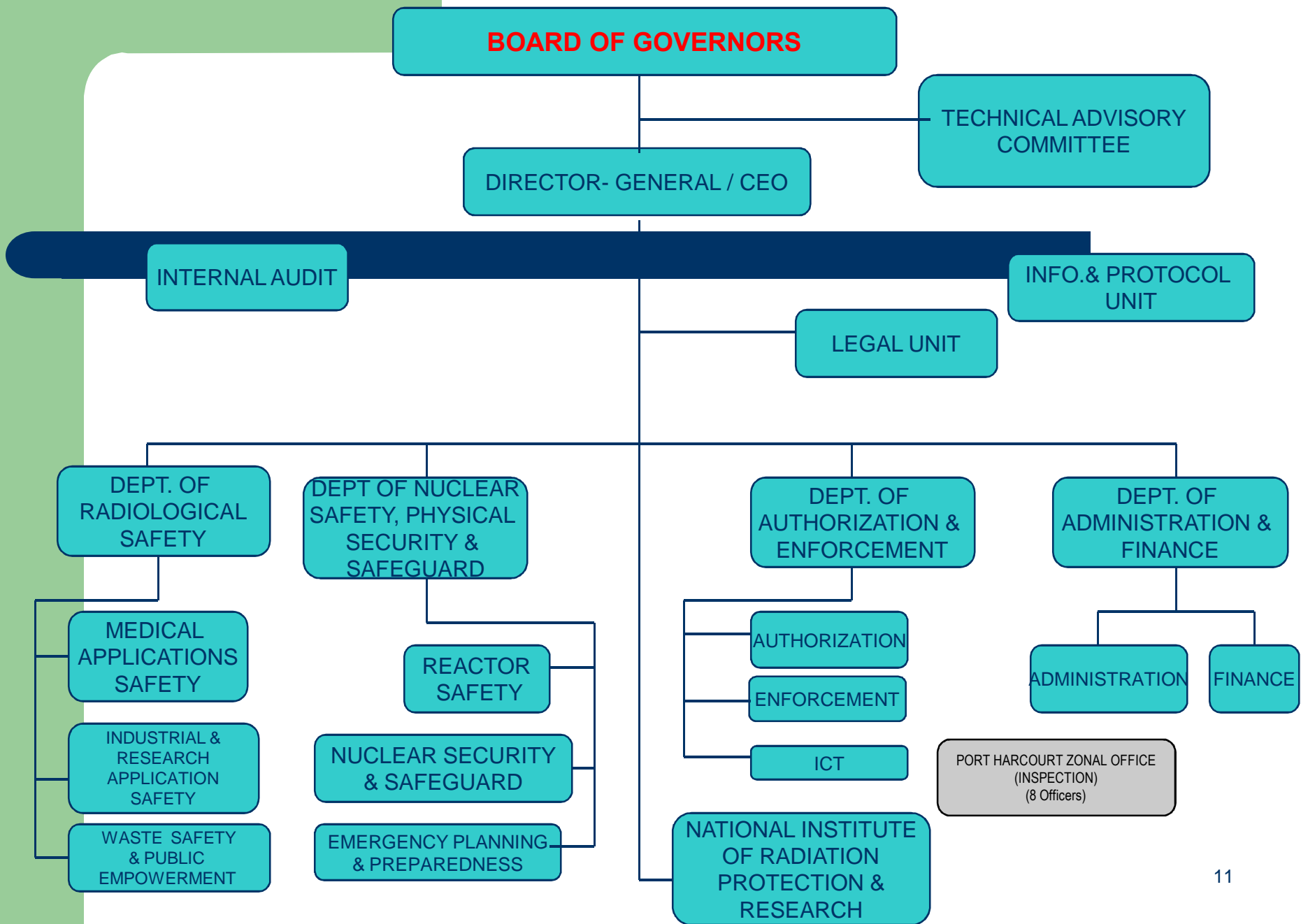


# Regulatory Activities

- Since its inception, the NNRA emplaced a regulatory framework within the context of the Act to effectively fulfill its primary regulatory functions, namely radiation protection, safety and security of radiation sources, safeguard of nuclear materials and the protection of nuclear installations.

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- Therefore, these constitute the five major regulatory functions of the NNRA. This it has been able to carry out through a system of registration, licensing and inspection of practices involving ionizing radiation and the enforcement of compliance with the Act.
  - It has also taken necessary measures to have in place the basic administrative and technical capability to support its activities.

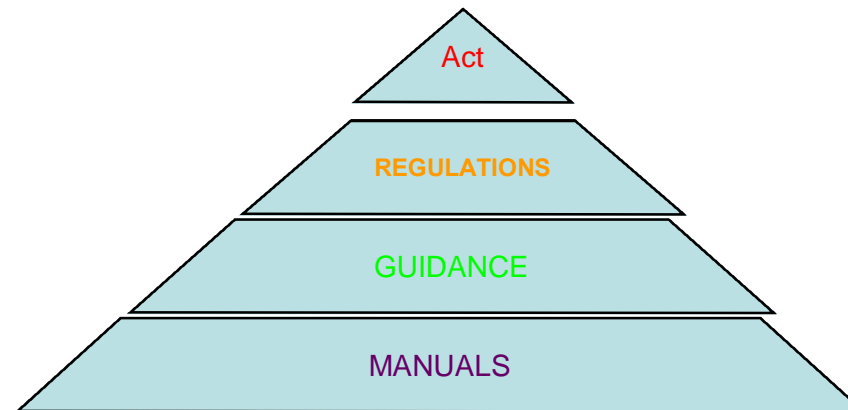
# STRUCTURE OF NNRA



## REGULATORY CONTROL PROGRAMME

- Regulations and Guidance
- Authorization
- Oversight Functions
- Ancillary Functions
- Emergency Planning and Response

# HIERARCHY OF NNRA REGULATORY DOCUMENTS



# Regulation completed

The Nigeria Basic Ionizing Radiation Regulations (NiBIRR) was issued in 2003. Additionally, the following have been developed and passed after approval by Mr. President:

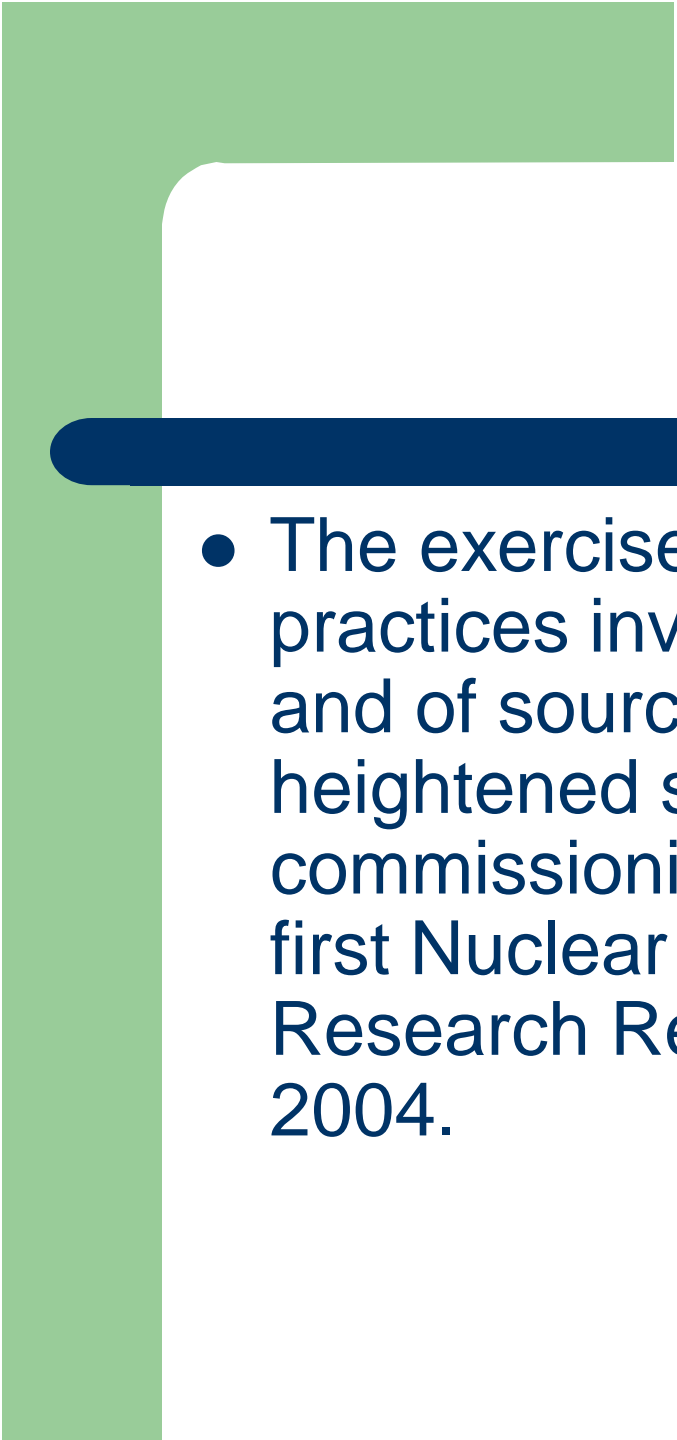

- **Nigerian Regulation Safety in Industrial Radiography Regulations, 2006**
- **Nigerian Safety and Security of Radioactive Sources Regulations, 2006**
- **Nigerian Transportation of Radioactive Sources Regulations, 2006**
- **Nigerian Radioactive Waste Management Regulations, 2006**
- **Nigerian Radiation Safety in Nuclear Medicine Regulations, 2006**

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- **Nigerian Radiation Safety in Radiotherapy Regulations, 2006**
  - **Nigerian Radiation Safety in Diagnostic and Interventional Radiology Regulations, 2006**
  - . Nigerian Radiation Safety in Industrial Irradiator Regulations, 2008
  - . Nigerian Radiation Safety in Nuclear Well Logging Regulations, 2008
  - . Nigerian Naturally Occurring Radioactive Materials Regulations, 2008

## USES OF NUCLEAR MATERIALS AND IONIZING RADIATION SOURCES IN NIGERIA

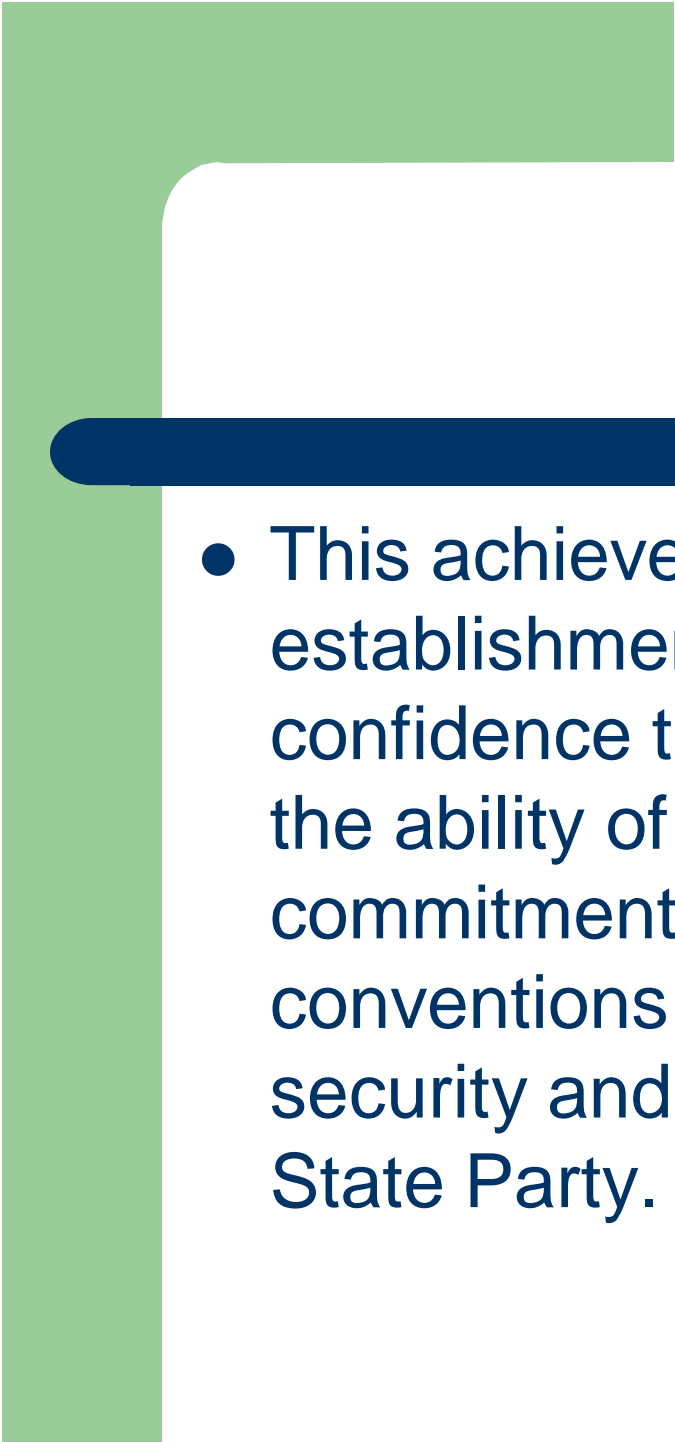

- Health Sector
- Petroleum Industry
- Manufacturing Sector
- Mining Sector
- Education and Research
- Agriculture and Water Resources
- Research Reactor Operation



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- The exercise of regulatory control over practices involving ionizing radiation sources and of sources within practices took a more heightened significance with the successful commissioning and operation of Nigeria's first Nuclear Research Reactor - the Nigeria Research Reactor-1 (NIRR-1) in September 2004.

# NIRR-1



The 30 kW Miniature Neutron Source Reactor (MNSR) installed in 1999 by IAEA at the Centre for Energy Research and Training, A. B. U. Zaria. The MNSR was commissioned in March 2004. It has since then been issued Operation Licence by the NNRA

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- This achievement was made possible by the establishment of the NNRA, which gave confidence to the international community on the ability of Nigeria to uphold its commitment to all international treaties and conventions in the area of nuclear safety, security and safeguards to which Nigeria was State Party.

# International treaties

In order to meet the international requirements Nigeria has ratified the following instruments among others;

- Nuclear Non -Proliferation Treaty
- Comprehensive Safeguards Agreement for the application of safeguards
- Protocol Additional to the Safeguards Agreement

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- Convention on Nuclear Safety
  - Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management
  - Convention on the Physical Protection of Nuclear Materials
  - Convention on Civil Liability for Nuclear damage

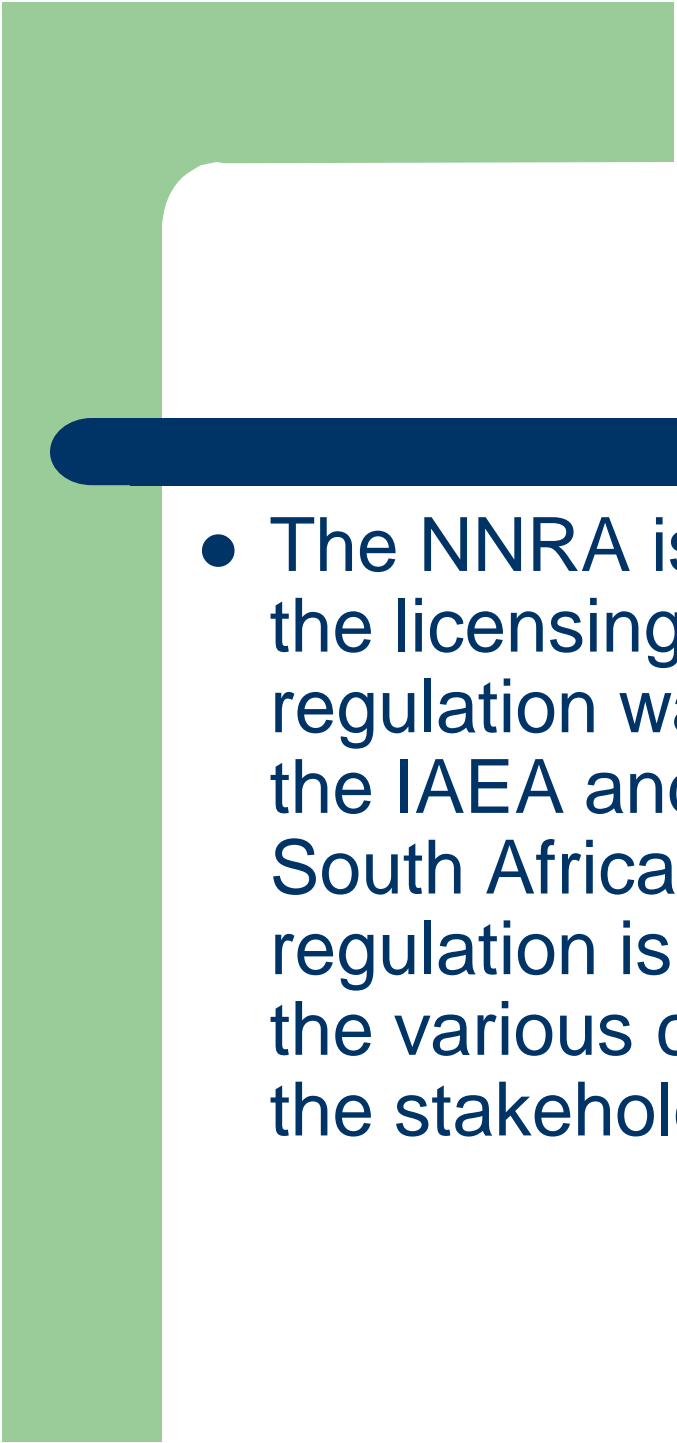

# The Nigeria Nuclear power programme

- Nigeria in 2005 made known its political commitment to the development of nuclear technology for electricity generation, thus increasing the responsibilities of the NNRA in the exercise of oversight on the nascent national Nuclear Power Programme (NPP).



## **Draft NSSS Bill**

- **With the commencement of our National Nuclear Power Programme (NPP) and the ratification of the necessary international treaties for a successful NPP, the *Nuclear Safety and Radiation Protection Act* has been reviewed and a Draft *Nuclear Safety, Security and Safeguards Bill* (Bill) developed. The Bill is now before the National Assembly for enactment into law.**

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- The NNRA is also developing a regulation for the licensing of NPP sites and the draft regulation was presented to Stakeholders, the IAEA and other experts from Russia and South Africa in October 2009. The draft regulation is being reviewed to incorporate the various comments and observations from the stakeholders.




# Man power Development

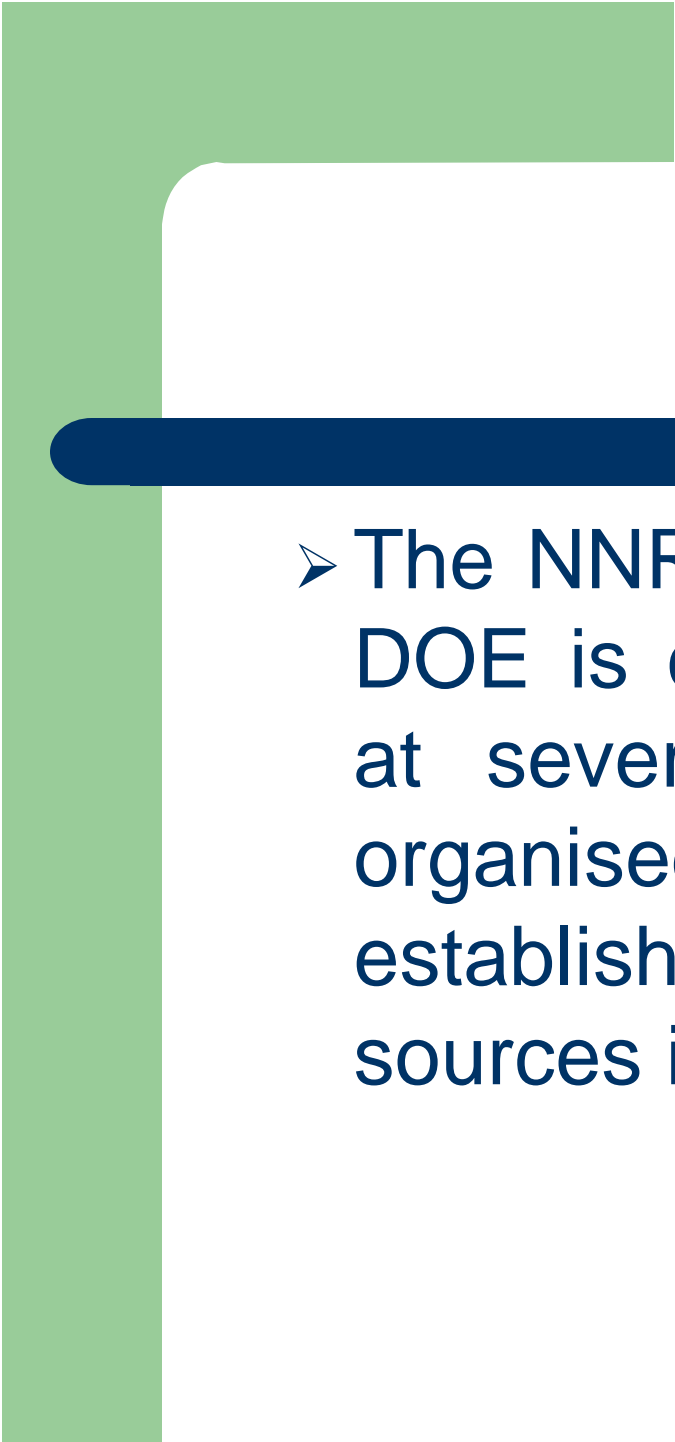

- Basic Professional Training Course
- On the Job training at CERT Zaria
- Inspectors undergoing post graduate programmes and various short courses



# Local/International Collaboration

- **Nuclear Security Committee:**
  - . Set up in early 2003 after the Halliburton incident on loss of control over high risk radioactive sources
  - . **Membership:**
    - i. **Federal Ministry of Justice**
    - ii. **Nigeria Police Force**
    - iii. **Department of State Service**
    - iv. **Nigeria Customs Service**
    - v. **Ministry of Defence**
    - vi. **Nigeria Immigration Service**
    - vii. **Ministry of Foreign Affairs**
    - viii. **Ministry of Energy (Petroleum)**

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- A **Memorandum of Understanding** (MOU) between the NNRA and the Nigerian Customs Service in respect of Import and Exportation, Safety and Security of radiation Sources in Nigeria
  - The MOU is being planned to be concluded with other organizations that are Members of the NSC

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- The NNRA in 2005 signed a technical cooperation agreement with the United States Department of Energy (US DOE) **Global Threat Reduction Initiative (GTRI)**

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- The NNRA in conjunction with the US DOE is carrying out security upgrade at several facilities in the country, organised training courses and established inventory of some legacy sources in the country

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- NNRA is into tripartite arrangement with IAEA and KINS (South Korea) for the training of regulatory officers on NPP licensing
  - Negotiations for bilateral cooperation are being concluded with Ghana, South Africa and Niger Republic
  - NNRA was at the fore front in the establishment of the Forum of Nuclear Regulatory Bodies in Africa (FNRBA) in 2008

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- THANK YOU FOR LISTENING