



THE APPROACH TO NUCLEAR SECURITY EDUCATION IN GHANA

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OUTLINE OF PRESENTATION

- **Introduction**
- **Establishment of National Strategy for Nuclear Security Education**
- **Challenges to introduction of MSc nuclear security programme**
- **Approach to nuclear security education**
- **Gains made**
- **Challenges to be addressed**
- **Conclusion**

INTRODUCTION

- In recent times, the **security challenges** associated with nuclear materials, facilities, and technologies **are emerging** at an **increasing** rate, necessitating corresponding **counter measures**.
- Every organization including **nuclear regulator** needs highly skilled, qualified, and experienced professionals to meet **challenging** tasks to ensure a **smooth performance**
- Establishing **education** and **training** which are key Components Needed to Develop and Maintain **Technical Expertise** for Effective **Nuclear security regime** is paramount

INTRODUCTION CONT.

- The Department of Nuclear Safety and Security(NSAS) is one of the Departments of the School of Nuclear and Allied Science established in 2006 by the Ghana Atomic Energy Commission in collaboration with the University of Ghana.
- The **mandate** of the Department is to develop human capability and capacity in Radiation Protection, **Nuclear Safety and Security**
- Department offers **MPhil and PhD** Degree programmes in Health Physics and Radiation Protection and also recognised and endorsed as **IAEA Regional Designated Centre (RDC):** Radiation Protection in October 2011 for PGEC

ESTABLISHMENT OF NATIONAL STRATEGY FOR NUCLEAR SECURITY EDUCATION

- Faculty Development
- Analysis of **Education and training needs**; Msc. Versus certificate programme ?
- **Design** of a national education **programme** in a realistic time frame to meet identified needs;
- Development and **implementation** of a national Education and training programme after the necessary approvals given;
- **Evaluation of the effectiveness** of the national strategy and its individual components.

CHALLENGES TO INTRODUCTION OF MSC NUCLEAR SECURITY PROGRAMME

- **Accreditation requirements**
- **Employment of Graduate**
- **Sustainability**
- **Trained Faculty**

APPROACH TO NUCLEAR SECURITY EDUCATION(1/3)

- In the short to medium term approach
- Introduction of Nuclear security Modules to existing MPhil and PhD Degree programmes in Health Physics and Radiation Protection Curricula as both
 - Core course
 - Elective course
- Nuclear Security modules developed following Technical Guidance of IAEA Documents e.g NSS 12

APPROACH TO NUCLEAR SECURITY EDUCATION(2/3)

- **Additionally, Introduction of Nuclear security Modules to existing MPhil and PhD Degree programmes in**
- **Nuclear Engineering**
- **Computational Nuclear Sciences and Engineering**
- **Applied Nuclear Physics**
- **Nuclear and Radiochemistry**
- **Nuclear and Environmental protection**
- **Radiation Processing**
- **Medical Physics as both**
 - **Core course and Elective course**

APPROACH TO NUCLEAR SECURITY EDUCATION(3/3)

Certificate programme in Nuclear security for Personnel from

- Government agencies,
- Operators of nuclear facilities and radioactive sources,
- Security and law enforcement personnel,
- Border, maritime and customs personnel,
- Line officers and first responders,
- Academic institutions and Media

GAINS MADE

- **Over 80 MPhil and PhD graduates have been trained by the Department during the last decade**
- **Most of these Graduates now constitute the young generation of Staff for the Nuclear regulator and Technical support organisations in Ghana**

CHALLENGES TO BE ADDRESSED

- **Funding** for (i) Participants from Nominating Institutions (ii) Faculty upgrading
- Fixing of **realistic fees** for the course to make it sustainable.
- Upgrading of infrastructure at the Nuclear Security Support Centre (NSSC) to accommodate essential practical and project work .
- Access to external lecturers to assist in some of the areas where local expertise do not exist.
- Development of the relevant **regulations** to **require** Education and training in Nuclear Security for Nuclear Installations and materials and facilities that use radioactive materials .

CONCLUSION

The department is determined to continuously provide an appropriate national nuclear security human resource development programme which is essential in order to **guarantee the sustainability** of nuclear security **knowledge and skills** in Ghana and neighbouring countries



THANK YOU