# THE OBLIGATION OF MULTINATIONAL

# COOPERATION TO PROMOTE AND

# ADVANCE THE SAFETY OF SPENT FUEL AND RADIOACTIVE WASTE MANAGEMENT

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**Abstract**

Safe, secure, and sustainable management of spent fuel is an international obligation for countries operating nuclear research reactors or nuclear power plants, as well as for potential newcomers. For countries either using nuclear power for electricity generation or using radioactive materials for medical, research or industrial purposes, the main concern relies in long lived radioactive waste requiring distinctive measures to ensure the decay of radioactivity to levels not presenting a significant hazard to the people and the biosphere.

The Kingdom of Morocco, as a Member State of the IAEA since 1957 and the first African country that ratified the Joint Convention in 1999, is fully aware that cooperation between countries is very crucial in radioactive waste and spent management. In this regard, The Moroccan Agency for Nuclear and Radiological Safety & Security (AMSSNuR) has committed itself to contribute to global nuclear safety regime , while fulfilling its international commitment under the IAEA auspices and sharing its experience regionally with African countries within the framework of African Regional Cooperative Agreement for Research, Development and Training related to Nuclear Science and Technology (AFRA) and Forum of Nuclear Regulatory Bodies in Africa (FNRBA) network, Formally recognized as a regional intergovernmental organization in September 2019 [1].

In this regard, AMSSNuR has developed a national policy and strategy on radioactive waste and spent fuel management, intended to address radioactive waste management in a coordinated and cooperative manner with all the concerned parties, in line with the international instruments signed and ratified by the Kingdom of Morocco, particularly the joint convention on safety of spent fuel management and safety of radioactive waste management.

To ensure the fulfillment of its regional and international commitment, AMSSNuR is actively involved in several international knowledge networks, notably the FNRBA chaired by the Director General of AMSSNuR.

This forum is a key instrument aiming to enhance, strengthen and harmonize, regulatory framework and practices associated to spent fuel, radioactive waste management radiation and waste safety. To ensure the safe and secure management of radiation, FNRBA has dedicated one of its six thematic working groups to radiation and waste safety.

The paper will address AMSSNuR contributions to FNRBA activities in the field of radioactive waste and spent fuel management among the African Member States and discuss the multinational cooperation as a tool to promote and advance the safety of spent fuel and radioactive waste management.

**Keywords:** AMSSNuR, FNRBA, Radioactive Waste Management, Spent Fuel, Multinational Cooperation, Regional Cooperation, International Cooperation.

1. INTRODUCTION

The safe and secure radioactive materials and disused sealed radioactive sources require a sound regulatory and technical infrastructure, as well as an appropriate legal, governmental, and regulatory framework to be in place in accordance with international safety standards and international obligations.

Over the past decades, several countries have made considerable progress in the development of radioactive waste and spent fuel management strategies. The Kingdom of Morocco, as an IAEA Member State since 1957, was among the first African countries to sign and ratify the Joint Convention on the Safety of Spent Fuel Management and the Joint Convention on the Safety of Radioactive Waste Management [2]. In this regard, the Moroccan regulatory body, created in 2016, intitled the Moroccan Agency for Nuclear and Radiological Safety and Security (AMSSNuR) has committed itself to global and regional nuclear safety regime, while fulfilling its international commitment under the IAEA auspices and sharing its experience with African countries within the framework of the Forum of Nuclear Regulatory Bodies in Africa and the framework of African Regional Cooperative Agreement for Research, Development and Training related to Nuclear Science and Technology (AFRA).

1. RADIATION AND WASTE SAFETY IN FNRBA

FNRBA, currently chaired by the Director General of AMSSNuR, was launched in 2009 to enhance, strengthen and harmonize the radiation protection, nuclear safety and security regulatory infrastructure and framework among the FNRBA members. The regional knowledge network functions as a platform facilitating sustainable regional cooperation focused on capacity building and infrastructure development. While regulation remains a national responsibility, FNRBA plays a key role in sharing and maintaining the knowledge in radiation protection, nuclear safety, and security [3].

Through its 6 Thematic Working Groups, FNRBA serves as a forum for dialogue to discuss and share common interest with the intention to develop innovative approaches.

Aware of the importance of the management of spent fuel, FNRBA has established in accordance with Article 8 of its Charter the Thematic Working Group on Radiation and Waste Safety (TWG). This group aims to ensure the establishment and implementation of radiation protection and waste safety infrastructure. It has been established with membership drawn from Experts in radiation protection and radioactive waste management to identify areas of improvement of the Members States.

* 1. **Objectives of the Radiation and Waste Safety Thematic Working Group**

The objective of the Radiation and Waste Safety TWG is to foster cooperation amongst the FNRBA members for the purpose of helping to enhance radiation protection and waste safety infrastructure in the different Member States. This group aims to:

* Promote the development and implementation of radiation protection and waste safety infrastructure in National Legislations and Regulations amongst the FNRBA members.
* Promote the alignment of radiation protection and waste safety requirements in National Legislation and Regulations with the IAEA Safety Standards [4].
* Promote the development and implementation of radiation protection and waste safety guides.
* Promote sharing of experiences, lessons learned and best practices in the implementation of radiation protection and waste safety measures amongst the FNRBA Member States.
* Promote cooperation amongst FNRBA members to help provide mutual support on the establishment of Radiation Protection and Waste Safety in National Legislations and Regulations.
	1. **Work Programme and Approach**

The TWG2 focuses on the need of members states to ensure that radiation protection and waste safety infrastructure are addressed in national legislations and regulation. It also encourages closed collaboration with the IAEA for the ultimate goal of aligning national legislations so that National Legislations and Regulations are well aligned with IAEA standards.

The TWG2 includes several African IAEA Member States: Burkina Faso, Egypt, Ethiopia, Ghana, Ivory Coast, Kenya, Nigeria, Mauritius, Morocco, and Zimbabwe, all committed to improve radiation protection and waste safety situation in African Member States through bilateral and multilateral cooperation.

* 1. **International and multinational cooperation**

The TWG2 cooperates with other regional initiatives to leverage resources, knowledge and benchmark approaches and engages with international partners as potential sources of training and capacity building and sharing information.

Aware that there is an increasing need for regional, international and multinational cooperation, FNRBA assigns high priority to this aspect by establishing an MoU with the African Commission on Nuclear Energy (AFCONE) to address the challenges faced by the African IAEA Member States.

1. CONLUSION

AMSSNuR is committed to share its experience in all its areas of expertise with all the other African Member States of the IAEA. It also strives to make them benefit from the assistance it receives from its international partners whose nuclear infrastructure is solid and developed, through different modalities and uses multinational cooperation as a tool to promote and advance the safety of spent fuel and radioactive waste management.

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