

Strengthening Transport Security for Radioactive Materials in Ghana: Challenges and Innovations

The secure transport of radioactive materials is essential for nuclear safety and security. This paper outlines Ghana's strategic approach to transport security, detailing regulatory frameworks, operational procedures, and technological measures. The paper outlines various regulatory requirements such as written procedures, shipper and carrier credentials, route selection, transport schedules notification and coordination among stakeholders, conveyance verification, detection measures used during transportation, and communication and response measures as stated in Nuclear Security Regulation Part IV on transport security.

It also emphasizes the applications of nuclear materials in medicine, industry, food preservation, and education while addressing the associated transport challenges and key legal instruments, including international conventions such as the Convention on the Physical Protection of Nuclear Material and its amendments as well as licensing and authorization processes.

The paper analyzes Ghana's new technical innovation of using a tracking system simulation tool to optimize routes, assess vulnerabilities, and develop escort protocols. Also, strengthening cooperation between government entities and private transport companies is an innovative approach to improving security. By leveraging private sector expertise, resources, and technology, Ghana can improve both security and efficiency in transporting radioactive materials.

The paper identifies operational challenges, including resource constraints, interagency coordination, infrastructure deficiencies, and emergency response readiness. These challenges are examined, alongside strategies for enhancing cybersecurity in transport systems. Additionally, shortages of key personnel, such as specialized security forces, emergency response teams, and trained drivers are a major transportation security challenge.

By sharing Ghana's experiences and proposed innovations, this paper informs the global discourse on improving the secure transport of radioactive materials.

The findings are particularly pertinent for policymakers, regulators, and practitioners aiming to fortify transport security systems amid evolving threats and resource limitations.

In conclusion, strengthening the transport security of radioactive materials in Ghana requires a multifaceted approach that combines infrastructure development, innovative technologies, enhanced regulations, and human resource capacity building. Overcoming these challenges through innovation will help ensure that Ghana can safely and securely manage radioactive materials, supporting both the peaceful use of nuclear technology and the public's confidence in its benefits.

Country or International Organization

Instructions

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