

SAFETY-SECURITY INTERFACE DURING NUCLEAR MATERIAL TRANSPORT OPERATIONS

Abstract. Peaceful nuclear programs demand transport capabilities that can provide safe and secure Nuclear Material Transport according to the fuel cycle facilities location. This paper will show that countries embarking in nuclear programs should take into account that Transport Operations are inherent to the fuel cycle and should have requirements previously established related to the conveyance and packages, regarding safety features, and a threat assessment, and physical protection system (PPS) regarding security. The paper will demonstrate that both safety and security during transport have the utmost purpose of protecting the population and the environment against the harmful effects of ionizing radiation. Moreover, they should complement each other. In this respect, it is mandatory to address their interface in a comprehensive approach identifying all possible interactions in order to solve conflicts. The paper will include the different modal conveyances used to transport nuclear material, emphasizing that it must be implemented a PPS similar to a facility supported by the three functions: detection, delay and response. The paper will highlight that transport security occurs in the public domain and involves intermodal transfers. Due to this vulnerability, transport security involves many national and international authorities and safeguards provisions and is therefore one of the most complex aspects of nuclear material control. The paper will address the governance established by the Convention on the Physical Protection of Nuclear Material (CPPNM) and the recommendation security measures specified in INFCIRC/225 (IAEA NSS-13). The study will also address the various stakeholders involved in nuclear material transport and the need to create a coordinating body at the national level to address all security aspects, including response forces; information security; cyber security; personnel security; Intelligence; nuclear forensics; and nuclear security culture. The paper will address the importance of exercises as an invaluable tool to evaluate with a comprehensive approach all the provisions established for nuclear security. Contingency response exercises are a critical component of an effective physical protection system, providing a unique insight into the state of readiness of the security organizations responsible for the physical protection during transport of nuclear material.

Country or International Organization

Instructions

Author: Mr ROMAO, CESAR (SYSTEM FOR THE PROTECTION OF THE BRAZILIAN NUCLEAR PROGRAM DEPARTMENT)

Presenter: Mr ROMAO, CESAR (SYSTEM FOR THE PROTECTION OF THE BRAZILIAN NUCLEAR PROGRAM DEPARTMENT)

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