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Regulatory Approach for Development and Implementation of Safety-Security Interface

The overarching objective of nuclear safety and nuclear security is to protect the public, property, society and environment from harmful effects of ionizing radiation. The focus of nuclear safety is to prevent nuclear accidents arising from the unintentional and inadvertent acts by implementing protection and mitigation measures at nuclear installation. Whereas, nuclear security aims to prevent accidents and other malicious acts involving nuclear and other radioactive material arising from intentional and criminal acts by taking deterrence, detection, delay, response and mitigation measures.

Safety is necessary, but not adequate alone to protect nuclear or other radioactive material from intentional and criminal acts. Similarly, security is essential, but not exclusively sufficient on its own to provide protection against radiological consequences arising from nuclear accident. Therefore, both nuclear safety and nuclear security is equally significant for the safe operation of a nuclear installation.

Pakistan Nuclear Regulatory Authority (PNRA), the national nuclear regulator, has adopted systematic approach and methodology to deal with the interfaces of nuclear safety and nuclear security. The systematic approach consists of the arrangements to ensure that both nuclear safety and nuclear security are mutually supportive and complement each other in minimizing the radiological risks. Legislative and regulatory framework has been established which defines roles and responsibilities for nuclear safety and security at national level. Regulations either developed or in developing phase address interface issues. Different aspects of security are covered in various safety Regulations such as "Regulations for Licensing of Nuclear Installations in Pakistan-PAK/909", "Regulations on Safety of Nuclear Power Plants Operation - PAK/913", etc. Specific requirement for assessing and managing interface between physical protection and safety is addressed in "Regulations on the Physical Protection of Nuclear Material(s) and Nuclear Installation(s)-PAK/925"which has been approved for promulgation.

Furthermore, the licensing process is also harmonized as PNRA issues single license/ authorization for both safety and security during lifetime stages of nuclear installations and such license/ authorization is issued only when the operator complies with both safety and security requirements. Joint inspections are conducted with a team comprising of both safety and security inspectors in order to identify and manage interface issues. A centralized emergency coordination and event reporting mechanism exists for both nuclear safety and nuclear security events. A rotation policy for PNRA employees has been adopted so that they learn about both safety and security of nuclear and radiation facilities by improving their skills and knowledge. Transparency with regard to safety related information, while confidentiality of security related information is ensured.

PNRA recognizes that both nuclear safety and security require their own expertise and methodology with understanding of each other's disciplines and requirements. For this, trainings are arranged for the staff working in nuclear safety to get familiarization with nuclear security and vice versa. PNRA regulations address requirements for safety and security cultures. It is pertinent to mention that PNRA has also established methodology to assess safety and security culture at organizational level.

Nonetheless, PNRA recognizes that safety and security interface is easier said than to be done and there are many associated challenges at implementation level. These challenges include the overlapping issues of safety and security cultures; enforcement and criminalization related to nuclear safety and nuclear security violations; interface with cyber security; diversified knowledge and experience requirements for personnel dealing in these two disciplines. Furthermore, at international level, few guidance documents are available to address technical areas of safety and security interface.

This paper will describe in detail the PNRA's approach to deal with the interface of nuclear safety and nuclear security. It will also address challenges faced in the implementation of nuclear safety and security interface.

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