

SUSTAINING THE SECURITY OF RADIOACTIVE SOURCES THROUGH COMPLIANCE WITH REGULATORY REQUIREMENTS

Radioactive sources are used, stored and handled for diverse nature of peaceful applications/purposes in Pakistan. Radioactive sources either sealed or unsealed are used in Nuclear Powers Plants, Nuclear Medical Centers, Food Irradiation, Industry, Agriculture and Research Institutes. Security measures for these sources are vital so that they may not become vulnerable target for adversaries. If these sources are not managed properly, loss, theft or mishandling of sources may lead to accidental exposure to workers and public.

This paper will highlight the sustainability of security measures for special form of radioactive sources i.e. Sealed Radioactive Sources (SRS) by ensuring compliance with regulatory requirements. The basis for these measures is National Regulations on Security of radioactive Sources –PAK/926 and IAEA guidance level documents i.e. Nuclear Security Series. These measures have been implemented through a comprehensively organized programme viz. Accountability & Control Programme for SRS. Key elements of Accountability & Control Programme include development of SRS database, physical inventory verifications, periodic inspections for compliance evaluation, assessment of measures for detection, delay, response, implementation of two persons rule and recommendations for improvement of security management measures. The main purpose of Accountability & Control Programme is to maintain knowledge of the radioactive sources, for the purpose of deterring and detecting any action that could lead to its unauthorized removal or misuse. The essence of this programme is to ensure the sustainability of these measures through regular inspections and verifications by corporate level of Pakistan Atomic Energy Commission (PAEC).

The compliance with regulatory requirements is the fundamental tool for accountability & control programme. This programme also oversee measures related to management responsibilities to ensure security, risk assessment, Categorization system for SRS, receipt, labeling, inventory management, storage, leak testing, key control, record keeping and retention and effectiveness of physical protection system. The implementation of accountability and control programme is carried through assigning responsibilities to respective personnel i.e. operators, carriers, shippers, institutes heads etc. which are continuously in contact with the corporate management. It is ensured that the background checks, for all personnel authorized to access SRS, are proportional to the security level of the radioactive source and are in accordance with the national regulations.

The SRS data is collected from all radiation facilities on the prescribed form “Accountability and Control of SRS Form” covering the necessary information regarding each source that includes source identification number, physical form, date of purchase, initial activity and category etc. On the basis of the information collected, a comprehensive data base is being maintained at corporate level. The physical verification of SRS is being conducted using the physical verification checklists which are based on the national regulations and IAEA guidelines. Risk of loss and theft of SRS is managed by using robust physical protection measures i.e. detection, delay, access control using the concept of defense in depth and graded approach. It is ensured that the security measures, for each category of radioactive sources, should be consistent to applicable security levels. The sustainability of required security measures is ensured through periodic inspections and verifications. It is ensured that the tracking of SRS from its import to final disposal/return to supplier is properly maintained and are under strict regulatory control. Security culture is being promoted and periodic trainings & awareness programs are conducted in order to guide the relevant personnel having responsibility for use, storage and handling of SRS.

Key words: *Accountability & Control for SRS, Nuclear Security Series, Inventory, Security Management*

State

Pakistan

Gender

Male

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