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Security Management of Research Reactors and Associated Facilities

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The title "RRAF"represents a diverse category of non-power reactors that can include a wide variety of co-located facilities that can complicate a security system. These facilities may include:
• Nuclear reactor
• Radioisotope production facilities
• Fuel research and fabrication facilities
• Storage of fresh fuel, spent fuel, or radioactive sources
• Radioactive waste storage and disposal
• Laboratories and hot cells
• Irradiation facilities
• Other non-nuclear related facilities and activities
RRAFs, due to their diverse objectives, settings, funding, and staffing present a unique set of challenges to the implementation and maintenance of an effective nuclear security programme and management.
These diverse objectives for the security system in the RRAF include drivers such as country-specific security demand for "critical" infrastructure, security demands coming from the need to protect assets other than the nuclear and radiological materials, and their associated facilities and activities in the research centre or from the need to mitigate other than radiological consequences, such as reputation damage or disadvantageous political consequences such as losing public opinion support for the activities in case a security event would happen and create a perception that the security system was incomplete, imperfect or deficient.
The overall objective of a State's nuclear security regime (as per NSS#13 and NSS#14) is to protect persons, property, society, and the environment from malicious acts involving nuclear and other radioactive materials.
In line with the objectives of the IAEA Nuclear Security Series, the objective of the Technical Document, Security Management for Research Reactor Operators is to develop a comprehensive, systematic, and focused approach to assist research-reactor operators in Member States to establish, enhance, and sustain appropriate nuclear security management at RRAF sites.
Nuclear security management is a term used to describe the roles and responsibilities that must be effectively performed and the programmes or functions that must be successfully implemented in order that the RRAF nuclear security programme meets the objectives laid out in the international instruments, IAEA recommendations and guidance, and the State's regulatory requirements.
RRAF reactor facility management require operator-centric guidance that focuses on assisting operators to implement an effective security management system. The TecDoc provides guidance to management in demonstrating the effectiveness of their security programme to the Competent Authority. The Competent Authority may also find the TecDoc useful in the licensing and inspection of the operator's nuclear security system.
A RRAF Nuclear Security Management System (NSMS) includes roles, responsibilities and programmes for management of security at a facility in three topical areas: Security operations, Security Processes and Security Forces, and its relationship with the State's nuclear security regime.
There are also many security related activities, relationships as well as governance and organizational interfaces that drive a NSMS i.e. legislation, regulations, processes, and plans that will enable a State to effectively regulate the use, storage, and processes of nuclear and radioactive materials and facilities.
At any facility, there should be an overall organizational Facility Integrated Management System (FIMS) that integrates all the organization's systems and processes into one complete framework, enabling an organization to work as a single unit with unified objectives. An integrated system provides a clear, holistic picture of all aspects of the organization as well as how they affect each other and their associated risks. A FIMS allows a management team to create one overall structure that can help to effectively and efficiently deliver an organization's objectives.
It is important that the management structure for nuclear security at a RRAF be clearly defined. It is the facility nuclear security management that must define roles, responsibilities, and accountabilities for each level of the organization, including security and other interfaces. This would also include an explicit, specific assignment of accountability for nuclear security to an individual (or individuals) along with the necessary

authorities, autonomy, and resources to successfully implement this role. The individual(s) must report to the top manager or appropriate senior manager of the organization and the responsibilities of their position must be defined/documented in sufficient detail to prevent ambiguity.
Managers are responsible for ensuring that appropriate standards of behaviour and performance associated with security are set and that expectations as to the application of these standards are well understood. They must also ensure that there is a clear understanding within the organization of the roles and responsibilities of each individual involved in security, including clarity concerning levels of authority and lines of communication.
Managers should also establish a formal decision-making mechanism that is well understood within the organization and involve their staff in decision making processes, where appropriate. The quality of a decision is improved when the individuals involved are able to contribute their insights, ideas, and experiences. The security system must be in a continuous state of readiness in order to handle security events at any time.

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