

Innovative Protective Monitoring Approaches for the civil nuclear industry: A Case for a New Approach to the Protective Security of Nuclear Facilities

The use of new and innovative monitoring technologies in the civil nuclear industry is being explored to enable more efficient and cost-effective security of material, facilities, and premises. These advancements are being strongly considered in relation to the nuclear renaissance, in particular with emerging Small Modular Reactor (SMR) technology. However, new protective monitoring approaches can also be utilised in decommissioning where the category of nuclear material has been reduced or nuclear material removed, justifying a proportionate reduction in security posture. The benefits of these innovations include better situational awareness, more effective deployment of security personnel, reduced insider risk, and cost savings.

States have obligations under the Convention on the Physical Protection of Nuclear Material (CPPNM) and its Amendment (CPPNM/A) to maintain appropriate physical protection of nuclear facilities and material in domestic use, storage, and transport. This means that security arrangements that include innovative protective monitoring technologies may be an option for licensees. The UK Government has indicated that these new monitoring approaches are within their risk appetite, subject to regulatory approval, and they may provide a solution to challenges regarding armed police resource for SMR development and eventual deployment. This paper will therefore make the case for innovative monitoring technologies to be considered more widely across the nuclear lifecycle. These technologies will be aligned to IAEA requirements such as the CPPNM/A and provide a vision of how innovations in security monitoring can enable the growth of civil nuclear.

Country or International Organization

Instructions

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