

# **Safeguards by Design – The Early Consideration of Safeguards Concepts**

T. Killeen, B. Moran and E. Pujol  
International Atomic Energy Agency  
Wagramer Strasse 5, A1400, Vienna, Austria

## **ABSTRACT**

The IAEA Department of Safeguards is in the process of formalizing its approach to long-range strategic planning. As a result of this activity new endeavours are being identified. One of these endeavours is to develop a concept known as Safeguards by Design. Safeguarding nuclear material and facilities can be made more effective and cost efficient by improving the safeguardability of the system. By taking into account design features that facilitate the implementation of international safeguards early in the design phase, a concept known as safeguards by design, the proliferation resistance of the system can be improved. This improvement process requires an understanding by designers and operators of safeguards and its underlying principles. To advance the safeguards by design approach, the IAEA determined that there is a need to develop written guidance. This guidance would help the major stakeholders – the designers, operators, owners, and regulatory bodies – to better understand how a facility could be designed, built and operated in such a way that effective safeguards could be implemented at reduced cost and with minimal burden to facility operations. By enlisting the cooperation of Member States through the support programme structure, the IAEA is working to first develop a document that describes the basic principles of safeguards, and the fundamental design features and measures that facilitate the implementation of international safeguards. Facility-specific guidance will then be developed utilizing the resources, expertise and experience of the IAEA and its Member States. This paper will review the foundation for the development of this task, describe the progress that has been made and outline the path forward.