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Status of the Gen-IV Proliferation Resistance and Physical Protection (PRPP) Evaluation Methodology

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Methodologies have been developed within the Generation IV International Forum (GIF) to support the assessment and improvement of system performance in the areas safeguards, security, economics and safety. Of these four areas, safeguards and security are the subjects of the GIF working group on Proliferation Resistance and Physical Protection (PRPP). Since the PRPP methodology (now at Revision 6) represents a mature, generic, and comprehensive evaluation approach, and is freely available on the GIF public website, several non-GIF technical groups have chosen to utilize the PRPP methodology for their own goals. Indeed, the results of the evaluations performed with the methodology are intended for three types of generic users: system designers, program policy makers, and external stakeholders. The PRPP Working Group developed the methodology through a series of demonstration and case studies. In addition, over the past few years various national and international groups have applied the methodology to inform nuclear energy system designs, as well as to support the development of approaches to advanced safeguards. A number of international workshops have also been held which have introduced the methodology to design groups and other stakeholders. In this paper we summarize the technical progress and accomplishments of the PRPP evaluation methodology, including applications outside GIF, and we outline the PRPP methodology's relationship with the IAEA's INPRO methodology. Current challenges with the efficient implementation of the methodology are outlined, along with our path forward for increasing its accessibility to a broader stakeholder audience –including supporting the next generation of skilled professionals in the nuclear non-proliferation field.

Country or International Organization

Generation-IV International Forum (GIF)

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