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Nuclear Industry Views on the Security of Small Modular Reactors

Small Modular Reactors (SMR) present a range of novel characteristics which have the potential to create security considerations. These characteristics can be categorised according to six areas: (1) Power Capacity and Modular Manufacture and Construction, (2) Reduced Capital and Operating Costs, (3) Increasing Automation and Remote Operations, (4) Advanced Reactors and Fuels, (5) Deployment and Siting Options, and (6) Developer Business Models and Marketing Approaches. Prior work in this field has identified a range of security considerations unique to novel advanced reactors and SMRs. In order to build upon this, during March and April 2024, the World Nuclear Association's 65-member Nuclear Security Working Group was surveyed to collect views on nuclear security considerations for SMR and other advanced nuclear power plant designs. The Working Group's members are distributed globally, with a wide range of experiences and expertise in nuclear security. The paper will present and discuss the results of this survey. A number of novel security considerations were identified by the Working Group members, and these will be explored, with potential mitigation approaches presented.

Country OR International Organization

United Kingdom of Great Britain and Northern Ireland

Email address

ross.peel@kcl.ac.uk

Confirm that the work is original and has not been published anywhere else

YES

Authors: PATERSON, Nathan (World Nuclear Association); CAVELLE, Ronan (World Nuclear Association); Dr PEEL, Ross (King's College London)

Presenter: Dr PEEL, Ross (King's College London)

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