

Rolls-Royce

Securing Small Modular Reactors A Case Study

Eddie Marrett



Agenda

- Introduction to the SMR Concept.
 - Integration of Security into engineering design from concept stage onwards.
- Opportunities following the release of the Security Assessment Principles.
 - What does this mean for international engagement?
- Industry Opportunities – SMR Approach.
- Addressing the future threats.
 - Innovative Technologies
- Questions.



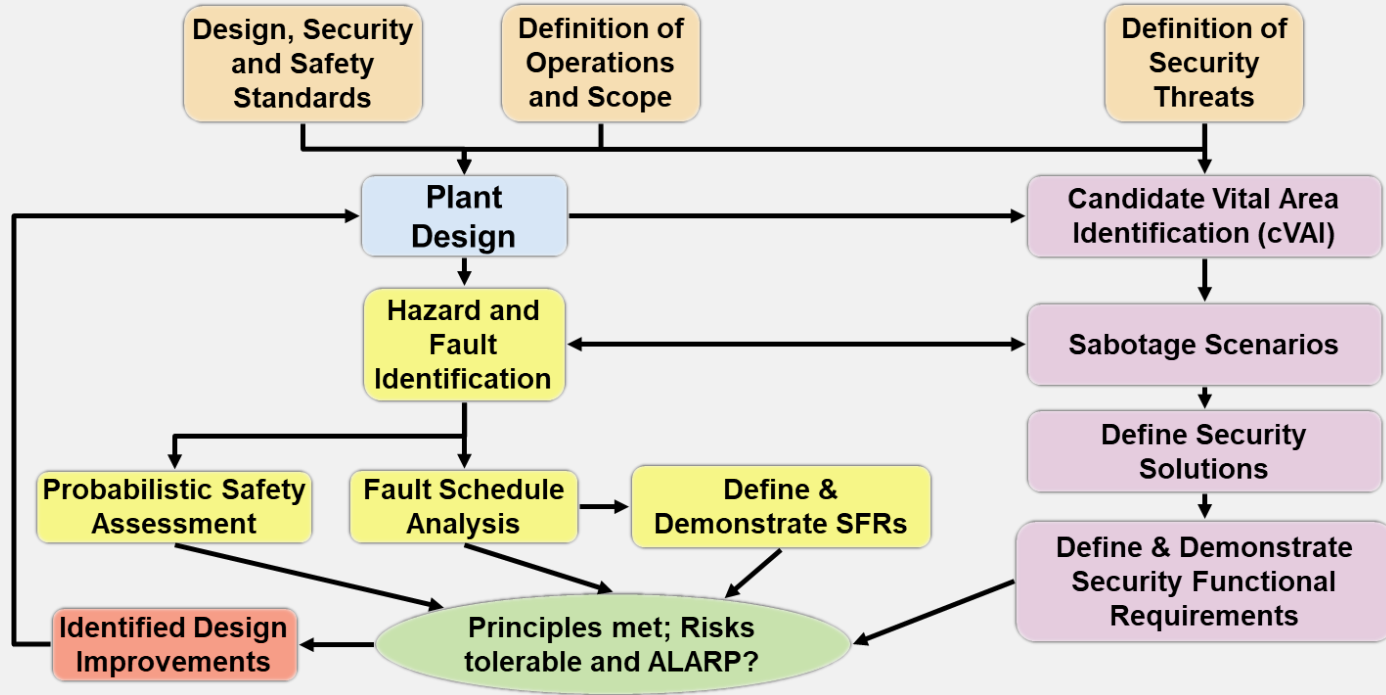
Overview of SMRs:

- Requirement driven by the need to decarbonise electricity generation.
- Manufacturing and assembly rather than a traditional construction approach.
- Implementation of a fleet solution with a common design.
- An optimised and enhanced use of proven technologies that presents an attractive market offering with minimum regulatory risk.





Integration of Security into Engineering Design





UK Nuclear Security – SMR Approach

Release of the Security Assessment Principles

- How can we best implement an outcome based approach?
- How does the UK Approach affect international engagement?

Defining the Threat

- What other approaches can we take to better understand the threat?

Understand the Insider threat

- How can we better understand the Insider Threat, and develop more effective mitigation strategies?

Implement a risk based approach

- Cost optimisation by increasing the effectiveness of security in the design in combination with innovative technologies.



Industry Opportunities – SMR Approach

Balance Regulatory vs Business requirements

- The security solution needs to be a balanced solution.

Provide synergy between Safety and Security functions.

- Alignment of categorisations and classifications.

Increased alignment with Safety and Engineering Functions

- Is there an equivalent of ALARP (As Low As Reasonably Practicable) for Security?

Standardisation

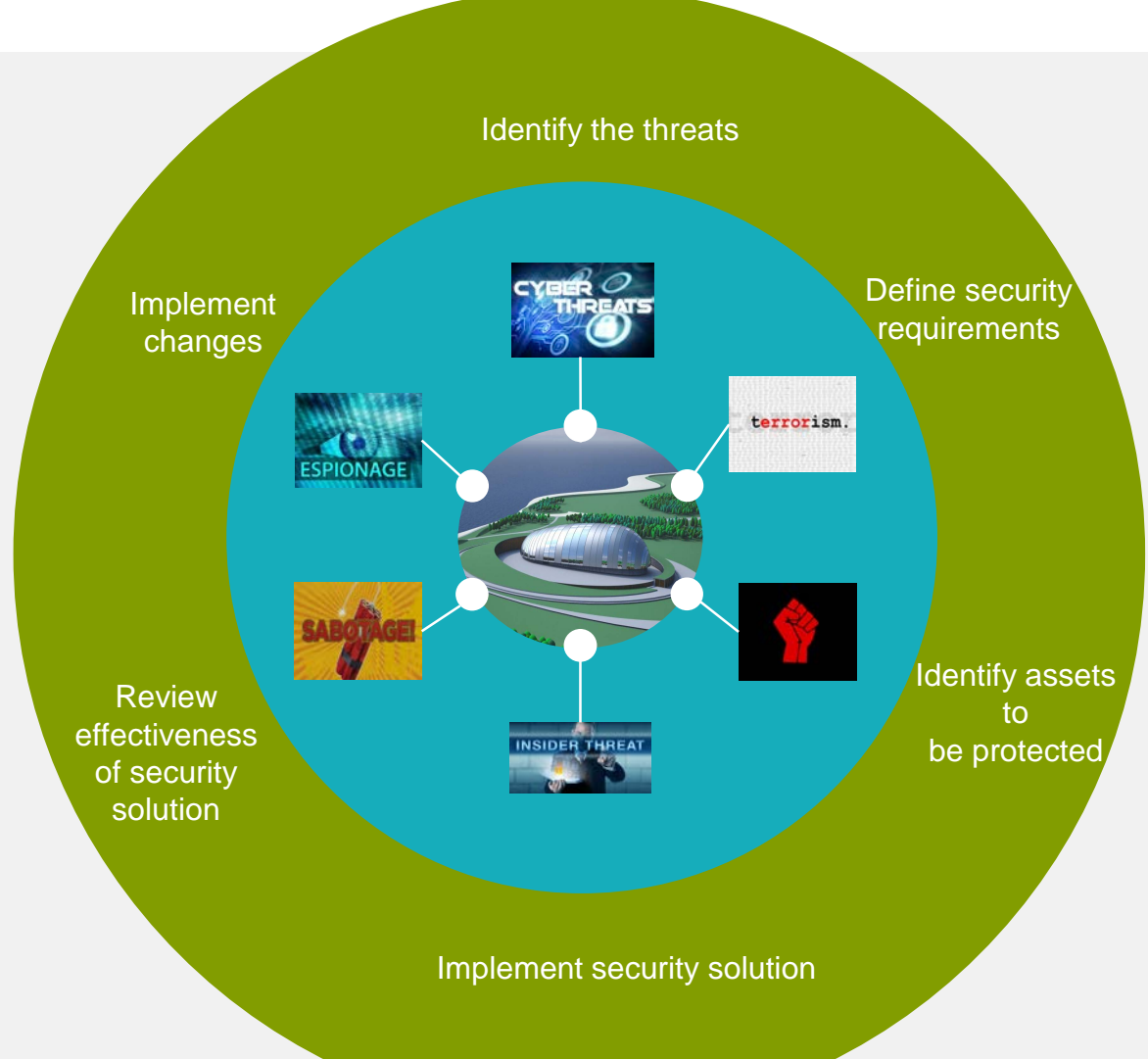
- How can we implement a level of standardisation that promotes deployment within evolving nuclear nations?

Optimisation of Cost

- How can we optimise on cost, whilst still meeting regulatory requirements?



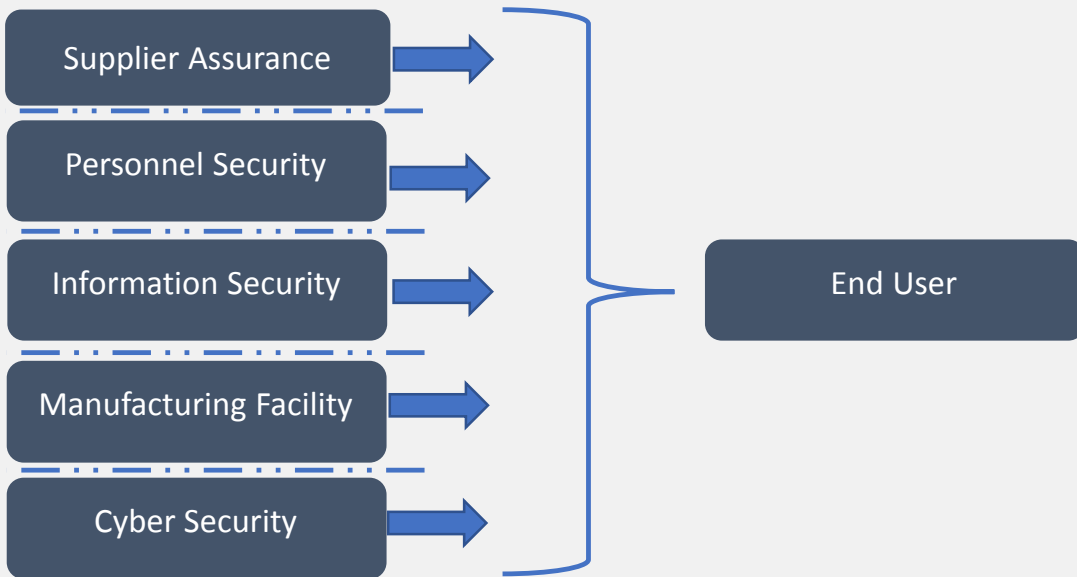
Addressing Evolving Threats





What are we trying to Solve?

- Implement a high level security management system comprising several different elements.
- This system will seek to make use of innovative technologies.





Thank you
for listening...



SMR – Leading Innovation

Eddie Marrett
Head of Security and Resilience - SMR
Email: eddie.marrett@rolls-royce.com