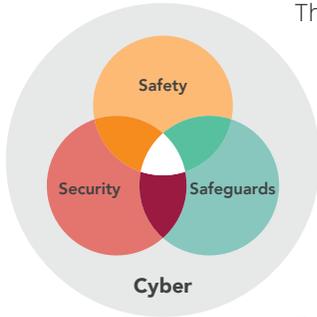




Nuclear Energy Safeguards, Security, Safety, and the Cyber Dimension (3SC)



The importance of nuclear energy safeguards, safety, security, and cyber dimension (3SC) thinking has been recognized internationally. Sandia's efforts to date offer a small step toward providing a more centralized approach to support the necessary 3SC technology, expertise, and capabilities in order to more effectively address the national security challenges associated with global nuclear expansion.

As nuclear technology advances and geopolitics change, Sandia National Laboratories is helping the United States government lead today's nuclear energy expansion in developing a new integrated 3SC systems framework to help resolve tomorrow's nuclear energy challenges.

SC Analyses

Due to the complexity and interactions of the 3SC, Sandia's comprehensive analysis is devoted to understanding and mitigating 3SC risks, which will enhance U.S. national security objectives. Additional analyses include:

- The gaps, conflicts, interdependencies, and leverage points between the 3S (Safeguards, Security, and Safety)
- The role that Cyber plays as a cross-cutting element for 3S

Related Study

- Analyzing the possible integration of 3S into the design and operation of nuclear facilities
- The current state of 3S Integration at U.S. nuclear power plants
- A proposed systems approach to integrate 3S
- The integration of 3S into the U.S. government's international engagement

Future Sandia Efforts

- Formal inclusion of cyber-based evaluation into the larger 3S analyses
- Inclusion of the cyber dimension into a formalized analysis of comprehensive risk
- Better understanding of the interactions between the 3SC of a nuclear power plant—including new challenges introduced by digital controllers on legacy systems

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