Contribution ID: **23** Type: **Poster**

ENHANCING THE COMPUTER SECURITY OF SMALL MODULAR REACTORS

Small Modular Reactors (SMRs), suitable for off-grid applications, offer more affordable and clean energy. One of the key obstacles to their implementation is accelerating technological development while maintaining compliance with safety and security standards throughout their lifecycle. This paper aims to address computer security challenges in the deployment of SMRs. SMRs rely heavily on digitalization, making them susceptible to cybersecurity threats that jeopardize their safety and functionality. Adequate measures must be put in place to mitigate the risk of insider threats, including employee training and strict access controls to limit access to critical systems and information. Regularly updating and patching software and systems can prevent Advanced Persistent Threats(APTs) from gaining long-term access. Encryption, multi-factor authentication, firewalls, and intrusion detection systems protect communication channels from cyber threats. Establishing a well-defined emergency response plan, a data recovery plan and regular backup procedures ensures data integrity and provides a means to recover quickly from a cyber incident. Adopting a proactive and multidimensional cybersecurity approach reduces the risk of cyber threats and enhances the overall resilience of the whole system. Addressing these challenges requires a multi-faceted strategy involving collaboration between stakeholders, cybersecurity experts, and governments.
KEYWORDS: SMRs, Computer Security

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Track Classification: Topical Group C: Safety, Security and Safeguards: Track 11: Security of SMR: Physical Protection and Computer Security