Contribution ID: **216** Type: **Oral**

SECURING SMALL MODULAR REACTORS IN URBAN ENVIRONMENT

Current small modular reactor (SMR) deployment use cases consider both rural and urban deployments depending on the operational need and in-country needs for clean and reliable sources of energy. Many studies have been conducted analyzing security in more rural and remote deployment locations, but this study looks at the physical security implications of an SMR placed in an urban environment and its uses for electricity production, district heating, and process heating.

SMRs used for electricity production, district heating, and process heating may be key sources of both energy infrastructure and commercial infrastructure within a city. Therefore, operators may consider further security applications to protect an SMR plant from physical attacks against both radiological sabotage and sabotage acts that could result in the SMR facility going down for a significant amount of time. These long-term shutdowns of an SMR facility may have a serious impact on the overall energy production or commercial production in a country.

In this study, the team will design and analyze a physical security system for securing an urban SMR facility against acts of radiological sabotage and sabotage acts that could disrupt the facility's long-term operation. Additionally, this work will analyze the nuanced security issues related to siting an SMR near an urban environment versus in a rural environment. Finally, this work will include recommendations for physical security for urban SMR facilities used for energy production, district heating, and process heating.

Country OR International Organization

United States of America

Email address

cjevans@sandia.gov

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

YES

Author: EVANS, Collin

Presenter: EVANS, Collin

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