



Contribution ID: 77

Type: Poster

Safety Analysis of Small Modular Reactors in the context of the Polish regulatory framework

Small Modular Reactors (SMR) gained a lot of interest in the Polish industry with their potential to provide a baseload carbon-free source of electricity and other commodities like process heat. Poland has a few nuclear facilities, including a research reactor (MARIA) and a licensing framework with the regulatory body, the National Atomic Energy Agency (Państwowa Agencja Atomistyki - PAA). Nevertheless, there are no commercial nuclear power plants, and this creates specific challenges for both the regulatory body and the nuclear industry. One of the challenges is applying the current licensing framework for advanced reactor technologies, including SMRs. Another is to improve the current framework or build a new framework that will be suitable for new technologies. Safety analysis of innovative reactors (e.g., SMRs) is one of several critical topics within regulatory process. This work focuses on the current Polish regulations related to safety analysis in the context of advanced reactors and especially SMRs. In the paper, selected topics related to safety analysis are discussed, potential obstacles are identified, and conclusions that can be useful for PAA or other involved organizations are drawn.

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YES

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Track Classification: Topical Group B: Legislative and Regulatory Frameworks: Track 7: Regulatory Considerations for SMRs