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Evaluation of the Molten Salt Reactor technology for the application of Floating Nuclear Power Plants

Floating Nuclear Power Plants (FNPP) present a promising pathway to broaden the acceptance of nuclear power by addressing critical challenges faced by land-based reactors, including high capital expenditures (CAPEX), prolonged construction timelines, and societal resistance. This paper provides a thorough assessment of the applicability of liquid-fueled Molten Salt Reactors (MSRs) within marine applications. It specifically delivers a comprehensive examination of the current MSR designs under development, evaluating their design attributes and capabilities in the context of the marine environment and the operational profile of floating platforms. Additionally, the research investigates the potential fuel cycles, focusing on the innovative approaches to refueling liquid fuel reactors. The paper is aimed at enhancing the overall understanding of advanced reactors suitability for marine deployment, paving the way for a more cost-effective and easily deployable nuclear power solution.

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

YES

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