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## Floating Nuclear Power Plants: Legal and Regulatory Gap Analysis

Floating Nuclear Power Plants (FNPPs) present a novel approach to install small modular reactors (SMRs) on floating barges or platforms to provide clean electricity and heat for remote coastal locations, to decarbonize offshore oil and gas or mining activities, or even to provide grid scale electricity production. Their mobility offers advantages over traditional land-based plants, but also pose unique transport-related legal and regulatory challenges. The international legal and regulatory framework for the peaceful use of nuclear energy has evolved over time to govern the diverse applications of nuclear technology and achieve nuclear safety worldwide. However, specific requirements for floating reactors are still missing in the legal instruments governing nuclear safety. For example, the Convention on Nuclear Safety (CNS) primarily addresses only land-based facilities. On the other hand, deficiencies also exist in the legal regime of maritime safety regarding the definition of FNPPs as nuclear ships. In addition, there is a need to evaluate the existing IAEA safety standards for nuclear installations such as SSR 2/1 GSR Part 4, and SSR-6 in the light of peculiar safety aspects of FNPPs.

This paper will highlight the gaps in the existing international nuclear safety regime with regard to FNPPs. Based on the gap analysis, the paper aims to contribute to the safe and responsible deployment of FNPPs, facilitating their potential as a clean energy source.

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

Yes

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