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Preparation of Regulatory Framework for SMR Deployment in Ukraine

Small modular reactors (SMRs) is widely considered as an essential part of an energy mix portfolio to reach the climate goals. In addition to their announced ability to generate clean, affordable and reliable power, Ukraine looks at SMRs also for decentralization the power system and to reduce its vulnerability to external impacts. International experience shows the benefits of early involvement of the regulatory body into the licensing process that could take different forms (design certification, generic design assessment, pre-licensing assessment, etc.) and the necessity for the regulator to advance prepare the framework for further regulating of new technologies.

The Ukrainian national regulator SNRIU has been implementing a set of measures to prepare the national regulatory framework for SMR deployment. There are continued efforts on revising the national regulations moving from prescriptive to performance-based and technology neutral regulations. Furthermore, considering the current best international practice, the specific guidance “Provisions for Pre-Licensing Review of Nuclear Facility’s Design”(2023) was issued to outline a technical frame for pre-licensing review. The guidance was developed under cooperation between the US NRC and the SNRIU.

SSTC NRS, as a SNRIU’s technical support organisation, is performing a basic study and pre-licensing review of a SMR design promising for further deployment in Ukraine. SSTC NRS applies the national regulations as well as international standards and safety assessment methods for deriving principle judgments on the SMRs documentation. The review enables SSTC NRS experts to acquaint with a SMR design and to reveal the regulatory and technical challenges which could appear in the future licensing.

The paper presents the overview of the guidance on pre-licensing review, experience in its application and respective lessons learned to be shared on the SMR Conference.

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Yes

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