

# **PRE-LICENSING REVIEW OF NEW NUCLEAR POWER DESIGNS, WHAT IT MEANS FOR UKRAINE AND THE WORLD**

*Roman Hrytsyk*

*Educational and Research Institute of Nuclear and Heat Power Engineering,  
National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”*

The pre-licensing review of novel nuclear power designations before licensing in Ukraine is one of the most important steps toward enhancing the energy independence of the country, at the same time answering global challenges on climate. Reviews regarding innovative technologies like Small Modular Reactors with the involvement of the best practices from countries such as Canada, the USA, and the UK will contribute to Ukraine’s effort for safe and sustainable development of nuclear energy in the future under the framework of the IAEA safety standards.

Modernization of the energy system is urgent for Ukraine, with the need to ensure energy security and international commitments to reduce greenhouse gas emissions. In this respect, nuclear energy becomes a priority, considering planned measures regarding the implementation of Small Modular Reactors (SMRs), which have improved safety and operational features.

A pre-licensing review is a preliminary analysis of the projects of nuclear facilities before the official licensing application. This allows the early identification of potential safety, technical, and regulatory issues so that the subsequent licensing process may be optimized, and the possibility of delays may be reduced.

Countries with developed nuclear energy sectors, such as Canada, the USA, and the UK, apply pre-licensing reviews to new nuclear projects. For example, CNSC has put in place the Vendor Design Review – VDR – but this is a process for preliminary assessment of the reactor project. In the USA, the Nuclear Regulatory Commission carries out pre-licensing consultations with reactor developers to bring

forth any potential issues at an early stage.

The State Nuclear Regulatory Inspectorate of Ukraine (SNRIU) has announced the introduction of the pre-licensing assessment system, developed according to Canadian experience. Special focus will be put on Small Modular Reactors, which, as mentioned, are part of Ukraine's energy strategy. That will increase the effectiveness of the licensing process and ensure that projects are within modern safety standards.

So, the pre-licensing review of new nuclear energy projects is one of the tools to ensure safety and efficiency in the development of nuclear energy in Ukraine. International experience and compliance with IAEA standards will increase the potential for sustainable industry development and energy independence in the country.

#### **References:**

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