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Content:

Understanding the Regulation of Small Modular Reactors in Armenia: Key Legal Framework, Licensing Procedures, and Practical Implications for Future Nuclear Projects

ARMENIA'S NUCLEAR ENERGY LEGAL FRAMEWORK AND THE REGULATION OF SMALL MODULAR REACTORS

On February 9, 2026, Armenia and the United States took a major step forward in their energy partnership, as U.S. Vice President and Armenia's Prime Minister signed a joint statement confirming that negotiations on an Agreement on Cooperation in the Field of the Peaceful Uses of Nuclear Energy (often referred to publicly as a "123 Agreement") had been completed. A "123 Agreement" is a U.S. statutory term for a civil nuclear cooperation agreement under Section 123 of the U.S. Atomic Energy Act, which provides a legal framework for significant U.S. non-defense nuclear cooperation and exports.

This milestone for 2026 adds a positive step following the May 2022 U.S.-Armenia memorandum on civil nuclear cooperation. It also aligns with Armenia's ongoing efforts to extend the life of the Metsamor Nuclear Power Plant, a facility from the Soviet era that was commissioned in 1976. Back in March 2023, the government started working on extending the plant's operations by another 10 years, aiming to reach 2036. Then, in February 2026, the Prime Minister openly talked about the possibility of extending even further, maybe up to 2046, while also highlighting the importance of deciding what the new nuclear facility might look like within that period.

Armenia is currently looking over proposals from U.S., Russian, Chinese, French, and South Korean companies for the design, financing, construction, and operation of new nuclear power plants, including the possibility of large-scale reactors. For a more in-depth look at the strategic goals and legal details behind this effort, please check out our earlier client note on Armenia's nuclear future and the U.S. collaboration.

Given this context, there's a growing conversation about including Small Modular Reactors (SMRs) in Armenia's future energy plans. This naturally raises an important legal question about how this new technology should be regulated within the current regulatory framework.

WHAT AN SMR IS AND WHY "SMR REGULATION" IS STILL "NUCLEAR ENERGY REGULATION"

SMRs are compact nuclear units whose components and systems can be factory-fabricated and transported to the installation site as modules. They are smaller than conventional large nuclear power plants and are designed to generate a moderate level of electricity, typically up to 300 MW. Although not yet widely deployed or fully tested at scale, SMRs are generally regarded as a potential alternative to traditional energy production methods, offering greater flexibility, cost-efficiency, enhanced safety features, and shorter construction timelines. Given the potential introduction of this technology, an important legal question arises:

"Do Small Modular Reactors fall under Armenian regulatory oversight, and do they require licensing under national law?"

Under Armenian law, there is no separate SMR category. Any reactor, large or small, falls under the same atomic energy regime. By definition, SMRs are nuclear reactors that sustain controlled

fission to generate power, so they are treated as "nuclear installations" subject to the Armenian Law on the Safe Use of Nuclear Energy for Peaceful Purposes (hereinafter the "Law"). In fact, Armenia's Environmental Impact Assessment law explicitly lists "nuclear power plants or other structures using nuclear reactors" as Category A projects, triggering the strictest EIA and expert review requirements. In short, the mere fact that a reactor is smaller or modular does not create a legal loophole: it still requires the full suite of nuclear safety licenses and oversight.

THE GENERAL LICENSING SCOPE FOR NUCLEAR ACTIVITIES

Armenia regulates nuclear energy activities through a comprehensive legal framework grounded in its atomic energy legislation. The statutory regime applies throughout the lifecycle of a nuclear installation, from site approval and design review through operation and decommissioning. Its purpose is to ensure sustained safety oversight, technical integrity, and protection of the public and the environment.

In the field of atomic energy use, the responsible licensing authority in Armenia is the Nuclear Regulatory Authority (ANRA). This authority issues licenses and conducts safety oversight of nuclear facilities, materials, and activities. In practice, Armenian law casts a wide net: *virtually every phase of a nuclear project* must be licensed. This includes site selection, design approval, construction, commissioning, operation, and even the decommissioning of a reactor. Each stage is a legal checkpoint that must be cleared before proceeding.

- **Site Licensing:** Any proposed reactor site must first obtain a site selection permit. Applicants submit detailed studies on seismic and geological safety, population impact, and emergency preparedness, a particularly critical requirement given Armenia's earthquake history. ANRA evaluates whether the site can safely host a nuclear installation.
- **Design Approval:** The reactor's technical design must be formally approved. Engineers must provide safety analyses and system specifications to ANRA. The regulator reviews these against national and IAEA safety standards. Any innovative SMR feature (e.g., passive cooling, modular coolant systems) would still undergo rigorous scrutiny. Novel designs may require additional technical consultations or test data.
- **Construction Permit:** Once the design is approved, a construction license is required before any nuclear-related building begins. ANRA reviews the detailed construction plan and quality assurance measures. Inspectors typically monitor construction to ensure compliance with the approved design. Significant deviations require regulatory approval.
- **Commissioning and Fuel Loading:** After construction, the plant enters commissioning. Regulators must consent to initial fuel loading and criticality. Armenian rules treat commissioning as a licensed stage: ANRA reviews startup tests and must approve each milestone (e.g., reaching first criticality). Only after thorough testing does the plant move to commercial operation.
- **Operating License:** To generate power beyond commissioning, the plant requires an operating license from ANRA. This license is time-limited and conditional. During operations, the plant is subject to continuous oversight, including regular safety drills,

environmental monitoring, maintenance checks, periodic peer reviews, and on-site inspections. Noncompliance can result in fines or shutdowns.

- **Decommissioning Permit:** When the reactor reaches end-of-life, decommissioning is tightly controlled. A dedicated decommissioning license is required, supported by a detailed plan for dismantling and managing radioactive waste. ANRA (often with IAEA or international guidance) oversees every step of decommissioning.

In addition to nuclear permits, any reactor operator must also obtain standard **energy-sector licenses**. The Public Services Regulatory Commission (PSRC) issues electricity generation licenses and sets tariffs; the plant requires PSRC approval for grid connection and commercial operation. Environmental approval is also mandatory: an EIA certificate from the Ministry of Environment is required before site work can begin.

IMPLICATIONS FOR SMR PROJECTS

Because Armenia's framework is technology-neutral, SMR projects would largely follow this established path. A new SMR plant would first require a government policy decision and likely a parliamentary act to authorize the project. The developer would then pursue the same sequence of licenses as above. The modular nature of SMRs does not exempt any step. In fact, regulators might demand additional analysis. For example, staged multi-module deployment (adding reactor units over time) could prompt additional reviews each time a new module is built or fueled. Regulators may issue design approvals module-by-module.

However, practical questions could arise. For instance, the Armenian regulator might need to issue interpretive guidance on how existing rules apply to modular or factory-built components. The need may arise to clarify whether, for example, a single factory-built SMR module requires its own license if multiple identical modules are planned for one site. Such details may need to be addressed on a case-by-case basis. Fundamentally, any SMR counts as a "nuclear reactor" under the existing legislation. Its deployment will trigger all the safety, security, and export-control obligations that Armenia has under its nuclear laws and international agreements.

Finally, Armenia is at a decisive moment in its nuclear development. The legal framework already allows for the regulation and licensing of advanced reactor technologies, but effective implementation will depend on strong institutional capacity and coordinated oversight. With credible regulation, alignment with international standards, and transparent decision-making, innovation can move forward without compromising safety. If managed responsibly, SMRs can strengthen energy security while preserving public trust and accountability.

#123 Agreement #SMR #metsamor #nuclearenergy #nuclearsafety #energylaw #nuclearregulation #renewables #smalmodularreactors