



Contribution ID: 239

Type: Oral

## Research on Gaps in Domestic Regulatory Documentation Based on Security Regulatory Cases of SMRs in Other Countries

Small Modular Reactors (SMRs) are defined as reactors of small to medium size, producing up to 300 MW(e) (small-sized or small modular) or 300 to 700 MW(e) (medium-sized). More than 80 SMRs are under development worldwide, such as the U.S., Canada, Russia, the U.K., China, and others. Under SMR development, nuclear regulatory bodies in the U.S., U.K., and Canada have established close cooperation with SMR developers and are proceeding with the review process. As an illustration, the U.S. Nuclear Regulatory Commission (NRC) has initiated a rulemaking process referred to as Title 10 of the Code of Federal Regulations (CFR) Part 53 and Part 73.110, aimed at suggesting a new regulatory framework for advanced reactors along with accompanying regulatory guidance. During the pre-application reviews, the Design-Specific Review Standard (DSRS) for NuScale Design has been developed to provide guidance to the NRC technical staff for reviews not covered by the existing NRC standard review plan (SRP).

Currently, the Republic of Korea (ROK) is in the process of developing an innovative Small Modular Reactor (i-SMR) capable of producing up to 170 MW(e). The major milestones include finalizing the basic design and standard design by 2026 and obtaining regulatory certification by 2028. Conducting a gap analysis between domestic regulatory documents and international SMR security-related regulatory frameworks is essential to prepare for the development of i-SMR.

In this study, firstly, a review of security regulatory documents applicable to i-SMR in the ROK is necessary. Secondly, an analysis of regulatory documents developed and applied for SMR security abroad is required. Then, this study derives a development strategy for security regulatory documents through gap analysis between international and ROK security regulatory documents.

### Email address

sblee@kinac.re.kr

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

yes

### Country OR International Organization

ROK(the Republic of Korea)

**Author:** LEE, Subong (Korea Institute of Nuclear Nonproliferation And Control)

**Co-authors:** KWON, Kookheui (Korea Institute of Nuclear Nonproliferation And Control); LIM, Donghyuk (Korea Institute of Nuclear Nonproliferation And Control); CHOI, Sundo (Korea Institute of Nuclear Nonproliferation And Control)

**Presenter:** LEE, Subong (Korea Institute of Nuclear Nonproliferation And Control)

**Track Classification:** Topical Group C: Safety, Security and Safeguards: Track 11: Security of SMR: Physical Protection and Computer Security