

PAMELA B. COWAN
Vice President, Regulatory Affairs

1201 F Street, NW, Suite 1100
Washington, DC 20004
P: 202.739.8093
pbc@nei.org
nei.org



December 14, 2016

Ms. Vonna L. Ordaz
Director
Office of New Reactors
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Proposed Physical Security Requirements for Advanced Reactor Technologies

Project Number: 689

Dear Ms. Ordaz:

The Nuclear Energy Institute (NEI)¹ is pleased to transmit the attached NEI white paper entitled *Proposed Physical Security Requirements for Advanced Reactor Technologies*, dated December 2016. This paper proposes new physical security requirements that are more appropriate for advanced reactor technologies, such as small modular reactors (SMRs) and non-light-water reactors (non-LWRs) with enhanced safety and security features. The proposed requirements would continue to provide assurance that activities involving special nuclear material are not inimical to the common defense and security and do not constitute an unreasonable risk to the public health and safety.

The NRC previously concluded that SMRs and other new technologies could comply with the current security regulatory framework, as stated in SECY 11-0184, *Security Regulatory Framework for Certifying, Approving, and Licensing Small Modular Nuclear Reactors*. While we acknowledge that these designs can meet existing requirements, we also recognize that existing security requirements were promulgated to apply to large light water reactors (LWRs) and are overly rigid and burdensome for advanced reactor technologies that incorporate enhanced safety and security features. Existing requirements also limit the extent to which designers are incentivized to provide security through engineered features and reduce reliance on human actions, contrary to the Commission's expectations in the *Policy Statement on the Regulation of Advanced Reactors* (73 Federal Register [FR] 60612, October 14, 2008).

¹ The Nuclear Energy Institute (NEI) is the organization responsible for establishing unified industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all entities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel cycle facilities, nuclear materials licensees, and other organizations and entities involved in the nuclear energy industry.

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Advanced reactor technologies are capable of significantly lowering the risk of radiological sabotage, while also reducing, or eliminating, the reliance on human actions. The new physical security requirements proposed in the attached white paper more appropriately address enhanced engineered safety and security features being incorporated into these technologies. While work is progressing on numerous advanced reactor technologies, we recognize that no design has yet been submitted for NRC review. Therefore, the proposed requirements are grounded in a set of "performance capabilities", allowing them to be established generically in advance of a design or site-specific application.

Establishing new physical security requirements now, rather than waiting to address these generic policy and technical issues through the review of an application, would enable plant designers to incorporate enhanced security features early in the design process, consistent with the NRC's Policy Statement on Advanced Reactors. Security is a key factor in the business case for the feasibility and development of advanced reactor technologies, because compliance with the security requirements is a large component of the facility's operating and maintenance costs. Rulemaking to establish security requirements for advanced reactor technologies is needed to eliminate the uncertainty associated with the use of alternative measures, exemptions, and license conditions and to facilitate necessary design and business decisions.

We request that the NRC use the white paper as a basis for initiating a rulemaking in 2017, which is similar to the approach the NRC took to initiate a rulemaking for emergency preparedness (EP) for advanced reactor technologies approved in NRC's SMR-SECY-15-0077, "Options for Emergency Preparedness for Small Modular Reactors and Other New Technologies." Proceeding with a physical security rulemaking in parallel with an EP rulemaking for advanced reactor technologies would also improve regulatory clarity, consistency and efficiency.

We request a meeting by February 28, 2017, to discuss the attached white paper and a path forward for establishing physical security requirements for advanced reactor technologies.

Questions concerning the white paper should be directed to David Young (202-739-8127; dly@nei.org) or Marc Nichol (202-739-8131, mrn@nei.org).

Sincerely,



Pamela B. Cowan

Attachment

c: Mr. Brian E. Holian NSIR, NRC
Ms. James W. Andersen, NSIR/DSP, NRC
Mr. Michael E. Mayfield, NRO/DEIA, NRC
Ms. Marissa Bailey, NSIR/DPR, NRC
NRC Document Control Desk