



July 27, 2026

U.S. Nuclear Regulatory Commission
11555 Rockville Pike,
Rockville, Maryland 20852

Subject: NIA Comment on Modernizing Security Rulemaking (RIN 3150-AL53; NRC-2025-1303)

Dear NRC Staff,

The Nuclear Innovation Alliance (NIA) is an independent, non-profit, non-partisan “think-and-do” tank whose mission is to help create the conditions for success for new nuclear energy so it can play a major role as an energy security and climate solution. Through policy analysis, research, outreach, and education, NIA is catalyzing the next era of nuclear energy. We focus on regulatory modernization, federal and state policy, and enabling private investment to support new reactor commercialization while meeting national environmental and energy security goals.

NIA appreciates the opportunity to comment on the proposed rule modernizing security requirements (Docket NRC-2025-1303), published June 26, 2026. NIA commends the NRC staff for publishing this draft rule incorporating innovative approaches to security requirements. The flexible framework proposed in this rulemaking achieves important objectives for addressing security for advanced reactors in a responsible manner without unnecessarily limiting the use of civilian nuclear technology for society’s benefit.

This letter makes one recommendation to further foster technology-inclusive regulations and provides NIA's input on the four NRC questions from the Specific Request for Comments section of the proposed rule package.

Comment to Further Technology-Inclusive Regulations

The proposed rule revises the timing of the three separate program-implementation milestones: operational Fitness For Duty (FFD) under 10 CFR §26.3(a) and (c); certain aspects of physical security under §73.55(a)(1)(ii) and (iii); and access authorization under §73.56(a)(3), as elaborated below.

- Current §26.3(a) requires that licensees authorized to operate under Part 50, and combined license (COL) holders under Part 52, “shall implement the FFD program under the requirements of part 26, except for subparts K and M, ... before the receipt of SNM [special nuclear material] in the form of fuel assemblies.” Current §26.3(c) requires that licensees and other entities constructing a nuclear power plant “must implement their

FFD program no later than receipt of SNM in the form of fuel assemblies.” The proposed rule changes both milestones to “before initial fuel load into the reactor.”

- Current §73.55(a)(4) requires that Part 50 operating license applicants and Part 52 combined license holders “shall implement the requirements of this section before fuel is allowed onsite (protected area).” The proposed rule restates this milestone, for licensees in the two tiers requiring full or partial design basis threat (DBT) protection, as “before initial fuel load into the reactor (or, for a fueled manufactured reactor, before initiating the removal of any of the features to prevent criticality).”
- Current §73.56(a)(3) requires licensees “to implement the requirements of § 73.56 before fuel is allowed onsite (in the protected area).” The proposed rule changes this milestone to the same formulation as above: “before initial fuel load into the reactor (or, for a fueled manufactured reactor, before initiating the removal of features to prevent criticality).”

The NRC’s rationale for these changes (i.e., that risk associated with unirradiated fuel does not increase when the fuel arrives onsite, and only begins to increase once fuel is loaded into its operating configuration) is sound and is applied reasonably consistently across all three proposed milestones. However, NIA is concerned that the proposed rule text in each section frames “initial fuel load” as the primary operative trigger, with the criticality-prevention-removal language appended only as a parenthetical exception for manufactured reactors under proposed part 57.

The NRC proposed language risks not being technology-inclusive by potentially inverting the actual relationship between the two concepts. As the NRC has already recognized in the Part 57 manufacturing license framework (proposed §57.197(d)(1)), a fueled reactor in which features to prevent criticality remain in place, is not in operation; operation commences upon initiation of the removal of those features. Fuel load is not itself the risk-relevant event; rather it is one specific, and potentially non-representative, means by which a reactor arrives at a fueled-but-not-yet-operating condition. For any reactor fueled away from the installation site, or for any design in which criticality control is achieved and removed by some mechanism other than the conventional, discrete act of loading fuel assemblies into a core, “initial fuel load” may not describe the actual risk-relevant milestone. In other words, whereas fuel loading likely constitutes the commencement of reducing criticality prevention measures, not all reduction criticality prevention measures may involve loading fuel.

NIA’s Recommendation

The rule should restate all three milestones around a single, common, technology-neutral trigger: the initiation of removal of the features or measures relied upon to prevent criticality. “Initial fuel load into the reactor” could be retained in the rule text but repositioned as an illustrative example of that trigger for reactors fueled with discrete fuel elements at the installation site, rather than as the primary operative standard with criticality-feature removal as a manufactured-reactor exception. NIA suggests the following restatement, to replace the parallel formulations currently proposed in §26.3(a) and (c), §73.55(a)(1)(ii)/(iii), and §73.56(a)(3):

“...before initiating the removal of any features or measures relied upon to prevent criticality (for example, before initial fuel load into the reactor, for a reactor fueled at the installation site).”

This single formulation would apply without modification across FFD, physical security, and access authorization; would require no separate manufactured-reactor parenthetical, as the manufactured-reactor case would simply be a direct application of the general rule rather than a carve-out from it; and would extend cleanly to future designs that achieve fueled-but-non-critical status through means other than discrete fuel assembly loading. Adopting a single trigger across all three programs would also simplify licensee implementation, as a licensee currently must track three textually distinct (though substantively identical) milestone formulations across Parts 26, 73.55, and 73.56. A shared trigger, stated once in substance and cross-referenced or restated identically in each section, would eliminate any risk of the three milestones drifting apart in future rulemakings or being interpreted inconsistently across programs.

NIA Responses to NRC Specific Request for Comments

Q1	<i>Requirements for Vital Areas</i> The NRC seeks stakeholder input on whether to revise or remove the term "vital areas" for power reactor facilities. Please explain the basis for your response.	NIA appreciates the NRC's observation that the current focus on the use of target sets may or may not involve vital equipment and that evolving plant design changes, digital modernization, and operational practices could obviate the benefit of designating vital areas (VAs). Designating a physical boundary <i>may</i> be of benefit for a licensee's strategy for protecting target sets, but the licensee should have the flexibility to establish the means for accomplishing that protection, and the administrative layer of prescriptively designating that boundary seems potentially redundant and unnecessary. NIA suggests eliminating the "vital area" definition in §73.2 (and associated conforming changes), subject to the following caveats: (1) Conforming changes within Part 73 would presumably convert current VA-related requirements to be applicable either to access control or to target-set equipment locations (as appropriate); changes also would be appropriate to applicable guidance such as Regulatory Guides (RGs) 5.66 and 1.114. (2) It could be important to maintain the use of "vital area" as an option a licensee may employ in meeting requirements around protection of target sets (i.e., some licensees may choose to invoke the VA concept as an administrative control). (3) It is absolutely essential that, if this change is made, existing licensees have the option to adopt the change (or not) and not be required to amend their licensing bases to conform to the new definitions.
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Q2	<i>Performance Objective</i> The NRC is proposing to change the performance objective from protecting against significant core damage and spent fuel sabotage to a broader goal of preventing release of radionuclides from any source that exceeds the dose reference values defined in §50.34(a)(1)(ii)(D)(1) and (2), §52.79(a)(1)(vi)(A) and (B), or §53.210, as applicable. ... The NRC seeks stakeholder input on the following: a. How would this change impact the security programs of current licensees? b. Would changing the performance objective in §73.55(b)(3) provide any benefit to future licensees given that §73.100 already offers a flexible, technology-inclusive performance objective for new reactors?	a. At the public meeting on July 13, 2026, the NRC stated that the intent of the rule is to allow existing licensees to maintain their security plans unchanged if the licensee desires. NIA agrees with this intent. Changing the performance objective of existing security plans could entail significant effort, at least for reanalysis of the existing plan against the revised objectives. To allow existing licensees to maintain current security plans unchanged if desired, the current language of 10 CFR 73 should ensure that an existing licensing basis need not be revisited if the licensee does not choose to amend its security plan. This option could entail several paths to retain preexisting definitions and methodologies, an explicit allowance for a licensee with an NRC-approved physical security program as of the effective date of the rule to continue to implement that program, or some combination thereof. NIA suggests conferring with subject matter experts from existing licensees to ensure the new rule language does not result in further examples of unintended consequences. b. NIA agrees that new reactor designs should have adequate flexibility to allow use of performance-based security requirements that are graded depending on the nature of target sets applicable to that design. As security-by-design processes are incorporated into new reactor designs, it is not clear currently which licensing pathway every design will follow. Therefore, both 73.55 and 73.100 should allow for graded security requirements so that either licensing pathway is open to reactor designers.
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Q3	<i>Fitness-for-Duty Program Requirements</i> Are there additional changes that the NRC should consider to streamline or simplify FFD program requirements for NRC licensees? For example, are there specific requirements in 10 CFR part 26 or other related regulations that could be transitioned to regulatory guidance (e.g., to reduce prescriptiveness and allow licensees and applicants to propose alternate methodologies in their licensing applications)? Please explain the basis for your response and provide specific recommendations to the extent possible.	For advanced reactors, the on-site staffing is expected to be significantly smaller than current reactors. Also, for some advanced designs, operating personnel may be geographically separated from the site. While there may be other specific suggestions from other stakeholders for moving current Part 26 requirements to guidance, NIA also suggests that enabling adoption of other government-approved FFD programs could enhance regulatory efficiency. For example, U.S. Department of Transportation (DOT) programs are widely available, while the NRC-specific FFD program is limited to fewer vendors and generally is administered through licensee staff at an existing nuclear site. As such, maintaining a nuclear-specific FFD program, rather than accepting the results of more widespread Federal programs, like those of the DOT, results in higher costs. For new reactors with small operating staffs and geographic dispersion, requiring nuclear-specific FFD programs likely results in significantly higher administrative costs with no measurable security benefit. In comparable situations, the NRC has proposed several efficiencies by accepting existing non-nuclear programs (such as quality assurance, under Part 57); therefore, requiring a nuclear-specific FFD program is an extra expense that may be unwarranted. NIA proposes the NRC revise 10 CFR Part 26 to accept the results of any FFD program accepted by other Federal agencies, like DOT.
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Q4	<i>Applicability of Changes to New Reactor Licensees and Applicants</i> Several proposed changes (reduced tactical response drills/force-on-force exercises, elimination of annual waiver/fatigue reporting, reduced random testing rate) are based on operating experience and performance history of the existing fleet, which is experience new reactor licensees and applicants will not yet have. The NRC asks whether these changes should apply to all licensees and applicants as currently proposed, or whether NRC should develop criteria to limit applicability, and if so, what those criteria should be.	NIA opposes presumptive denial of improvements in regulatory efficiency to new applicants/licensees. In fact, as security-by-design processes are implemented, NIA expects new reactor designs to contain features that allow licensees to adopt security plans with additional efficiencies. Operating experience does not benefit only existing licensees and many of the changes made in the interest of increased regulatory efficiency are associated with prior requirements deemed not to be necessary (as opposed to “no longer required because of existing fleet performance”). While the existing fleet indeed enjoys exceptional performance, NIA expects that new licensees will incorporate such best practices into their security plans as appropriate. The regulation should establish the performance-based requirements uncolored by the expectation of the maturity of any given licensee.
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NIA thanks NRC staff, management, and the Commission for their continued efforts to modernize security regulations. If you have any questions, please contact Miranda McGuire at mmcguire@nuclearinnovationalliance.org.

Sincerely,

Judi Greenwald
President & CEO
Nuclear Innovation Alliance