OPTIONS AND RECOMMENDATION FOR PHYSICAL SECURITY FOR ADVANCED REACTORS - RULEMAKING PLAN

Estimated Schedule

Initiate regulatory basis phase — upon receipt of staff requirements memorandum (SRM)
Complete regulatory basis — 18 months following Commission's SRM
Deliver proposed rule to SECY — 13 months following regulatory basis
Deliver final rule to SECY — 13 months following publication of proposed rule

Preliminary Priority

The staff is in the process of updating the Common Prioritization of Rulemaking (CPR) prioritization method to align with the U.S. Nuclear Regulatory Commission's (NRC's) Strategic Plan: Fiscal Years 2018–2022 (NUREG-1614, Volume 7) issued in February 2018. Based on the existing CPR prioritization method, staff has determined that this activity would be a medium-priority rulemaking because (1) it would be a moderate contributor toward attaining the NRC's Safety Strategic Goal of ensuring the safe use of radioactive materials, and Security Strategic Goal of ensuring the secure use of radioactive materials, (2) it would be a moderate contributor toward attaining the NRC's Strategic Plan's strategies to further risk inform the regulatory frameworks for safety and security, (3) it would significantly support an NRC licensing initiative with a future regulatory benefit, considering Commission and congressional interest in advanced reactors including small modular reactors (SMRs) and non-light-water reactors (non-LWRs), and (4) there is substantial public interest in this topic.

Description and Scope

The major objective of revising Title 10 of the *Code of Federal Regulations* (10 CFR) Part 73, "Physical Protection of Plants and Materials," is to enhance regulatory effectiveness by providing a stable and predictable process for implementing physical security for advanced reactors. The revision would consider technological advancements in reactor designs and their associated design features impacting the possible loss of safety functions from malicious acts and any resulting consequences. The rulemaking would permit future applicants and licensees to demonstrate their safety case and technical basis to meet alternative requirements for a risk-informed, performance-based approach for designated portions of the physical security program. The resultant physical security requirements would be more commensurate with the risks posed by advanced reactors.

This rulemaking would retain the current overall framework for security requirements but would provide alternatives for advanced reactors to specific regulations and guidance related to physical security. The staff would interact with stakeholders to identify specific requirements within existing regulations that would play a diminished role in providing physical security for advanced reactors while at the same time contributing significantly to capital and/or operating costs. The most likely focus of this limited-scope rulemaking would be to evaluate an alternative to the prescribed minimum number of armed responders currently defined in 10 CFR 73.55(k).

The benefits of changing the regulations for physical security for advanced reactors include (1) fewer future exemption requests as compared to those required under current regulations, (2) fewer security staff or other security features compared to those currently required by 10 CFR 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors against Radiological Sabotage," commensurate with offsite consequences and radiation risks to public health and safety, (3) consistent regulatory applicability in the review of physical security plans in accordance with 10 CFR Part 73, and (4) potential use of a more risk-informed, performance-based approach to address alternative physical security requirements.

Relationship of the Work to the U.S. Nuclear Regulatory Commission's Strategic Plan

The staff expects that the rulemaking would support the safety and security goals of the NRC's Strategic Plan: Fiscal Years 2018-2022 (NUREG-1614, Volume 7) by further risk informing the regulatory frameworks for SMRs and non-LWRs. The most significant impact of the intended rulemaking to revise 10 CFR Part 73 would be the enhancement of regulatory effectiveness by providing a stable and predictable process for implementing new physical security requirements for advanced reactors. This approach supports the Principles of Good Regulation, including openness, clarity, and reliability.

Cost and Benefits

The proposed action is estimated to involve a medium magnitude of costs, largely from developing a regulatory basis and guidance supporting the methodology for possible alternatives for physical security for advanced reactor designs. The estimated benefits of the proposed action include (1) fewer exemption requests as compared to those made under current regulations, (2) fewer security staff or other security features compared to those currently required by 10 CFR 73.55 commensurate with offsite consequences and radiation risks to public health and safety, (3) consistent regulatory applicability in the review of physical security plans in accordance with 10 CFR Part 73, and (4) potential use of a more risk-informed, performance-based physical security framework.

Cumulative Effects of Regulation

This rulemaking would have a net positive impact on the cumulative effects of regulation because (1) it would potentially reduce the regulatory burden for applicants for advanced reactors, (2) there are no known activities that would significantly impact the implementation of the proposed change, and (3) the staff plans to hold public meetings at several key steps in the process and provide an extended public comment period.

The staff notes that a rulemaking effort, "Emergency Preparedness for Small Modular Reactors and Other New Technologies," is currently ongoing, as directed by the Commission in SRM-SECY-16-0069, "Rulemaking Plan on Emergency Preparedness for Small Modular Reactors and Other New Technologies," dated June 22, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16174A166). The scope of the ongoing rulemaking is limited to emergency preparedness for advanced reactors, but much of the rationale for pursuing the rulemaking, including recognizing the attributes of advanced reactor designs, and assessing the cumulative effects of regulation are similar to the current discussions related to possible alternatives to physical security requirements.

Agreement State Considerations

There are no Agreement State considerations for this rulemaking.

Backfitting and Issue Finality

The staff's expectation is that the backfitting and issue finality regulations do not apply to this rulemaking. The proposed revisions to physical security requirements would not represent backfitting because the revisions would contain new alternative requirements to design, construct, and operate new facilities. The intended rule defining the new physical security regulations and guidance for advanced reactor designs would be in place before an applicant applies for a license, and the existing regulations, including provisions to propose alternatives or exemptions, would remain available should any applicant wish to use them. The backfitting and issue finality regulations do not protect future applicants from the imposition of new or different requirements. Therefore, the staff would not be required to prepare a backfit analysis for the proposed rule.

Guidance

The staff estimates that one or more new guidance document(s) will be developed in parallel with this rulemaking. Current guidance for operating reactors would likely remain unchanged.

Advisory Committee on Reactor Safeguards Review

The staff will determine whether this rulemaking falls within the scope of the Advisory Committee on Reactor Safeguards (ACRS) Charter as the requirements and guidance are developed. The staff may consult with the ACRS on those matters associated with the progression and potential consequences of postulated terrorist actions and the assessment of the effectiveness of mitigation strategies.

Committee to Review Generic Requirements Review

The staff does not believe that review by the Committee to Review Generic Requirements is necessary because the backfit regulations do not apply, as described in the "Backfitting and Issue Finality" section of this paper.

Analysis of Legal Matters

The Office of the General Counsel (OGC) has reviewed this rulemaking plan for a rulemaking that considers a risk-informed, performance-based alternative to selected physical security requirements for advanced reactors. This rulemaking would reduce the need for case-by-case physical security exemptions for advanced reactors.

The regulations and associated guidance described in the rulemaking plan would not constitute backfitting as defined in 10 CFR 50.109(a)(1) because they would apply to specific new technologies only and not to currently licensed large LWRs. For this reason, the staff would not need to conduct a backfitting assessment for the proposed rule. The proposed rule would require preparation of an environmental assessment, as it appears that there are no categorical exclusions in 10 CFR 51.22(c) that would apply to this rulemaking.

The proposals in this plan would require licensees to generate and maintain records related to their physical security programs. Accordingly, the rule would require Office of Management and Budget review and approval for the purpose of the Paperwork Reduction Act.

OGC has concluded that there are no known bases for legal objection to the rulemaking.

Commitment

If the Commission approves initiation of the rulemaking, the staff would add the rule to the Common Prioritization of Rulemaking during the next budget formulation cycle and initiate the rulemaking effort described in this rulemaking plan.

Resources

Enclosure 2 includes an estimate of the resources needed to complete this rulemaking. Resource estimates in Enclosure 2 are not publicly available.