SECRETARY

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 19, 2018

COMMISSION VOTING RECORD

DECISION ITEM: SECY-18-0076

TITLE: OPTIONS AND RECOMMENDATION FOR PHYSICAL SECURITY FOR ADVANCED REACTORS

The Commission acted on the subject paper as recorded in the Staff Requirements Memorandum (SRM) of November 19, 2018.

This Record contains a summary of voting on this matter together with the individual vote sheets, views and comments of the Commission.

Annette L. Vietti-Cook
Secretary of the Commission

Enclosures:
1. Voting Summary
2. Commissioner Vote Sheets

cc: Chairman Svinicki
Commissioner Baran
Commissioner Burns
Commissioner Caputo
Commissioner Wright
OGC
EDO
PDR

VOTING SUMMARY – SECY-18-0076

RECORDED VOTES

	APPROVED	DISAPPROVED	ABSTAIN	NOT PARTICIPATING	COMMENTS	DATE
Chrm. Svinicki	X				X	10/30/18
Cmr. Baran	X				X	10/05/18
Cmr. Burns	X				X	10/12/18
Cmr. Caputo	X				X	11/01/18
Cmr. Wright	X				X	10/30/18

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: CHAIRMAN SVINICKI

SUBJECT: SECY-18-0076: Options and Recommendation for Physical Security for Advanced Reactors

Approved XX **Disapproved** ____ **Abstain** ____ **Not Participating** ____

COMMENTS: **Below** XX **Attached** XX **None** ____

I approve the staff's recommended Option 3, to initiate a limited-scope revision of regulations and guidance related to physical security for advanced reactors and approve the enclosed rulemaking plan, subject to the attached edits. This effort by the staff is part of the agency's broader efforts to align regulatory requirements with the risks potentially posed by advanced reactor designs currently under development by designers. A limited-scope rulemaking to establish a risk-informed, performance-based, and consequence-based approach to this issue is more likely to be timely to need than a broad-scope rulemaking, while also providing advantages over other options considered, such as use of exemption processes or modification of current guidance documents. Because the rulemaking would be limited in scope, I propose that the regulatory basis be completed within 12 months. I also appreciate the staff's continued recognition, as it undertakes this rulemaking effort, that the concept of "high assurance" of adequate protection found in our security regulations is equivalent to "reasonable assurance" when it comes to determining what level of regulation is appropriate.

SIGNATURE

10/30/18
DATE

Entered on "STARS" Yes ✓ No ___

KLS Edits

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~~12 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). Another potential area is the prescriptive requirements in 10 CFR 73.55 for onsite secondary alarm stations.

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.

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: Commissioner Baran

SUBJECT: SECY-18-0076: Options and Recommendation for Physical Security for Advanced Reactors

Approved X Disapproved ____ Abstain ____ Not Participating ____

COMMENTS: Below ____ Attached X None ____

Entered in STARS
Yes X
No ____

Signature

1/15/18
Date

Commissioner Baran's Comments on SECY-18-0076,
"Options and Recommendation for Physical Security for Advanced Reactors"

In this paper, the NRC staff recommends initiating a limited-scope rulemaking to establish different physical security requirements for non-light-water reactors and small modular reactors (SMR) than those that apply to the existing large light-water reactor fleet. The staff is anticipating that non-light-water reactor and SMR vendors will seek to demonstrate that their designs justify distinct physical security requirements because they "include attributes that result in smaller and slower releases of fission products following the loss of safety functions."[1] Currently, an applicant's request for alternate physical security requirements would be reviewed on a case-by-case basis as an exemption or as part of a design certification or license application. Although the staff has not yet determined the particular focus of the recommended rulemaking, the staff indicates that the rulemaking would likely focus on developing a technology-neutral, performance-based approach for determining the required minimum number of armed responders for the various non-light-water reactor and SMR designs. The staff explains that the rulemaking could also examine whether the requirement for onsite secondary alarm stations should be revised for these types of reactors.

There are strong reasons to proceed with a rulemaking but also some potential challenges. In my view, the two main advantages of the rulemaking would be to provide regulatory certainty to potential applicants and offer the public an opportunity to comment on novel approaches to physical security. Without a rulemaking, potential applicants likely would seek case-by-case exemptions from or alternatives to NRC's existing physical security requirements. Relying on these processes would result in NRC making important and potentially controversial security decisions without hearing the views of interested stakeholders. These processes also would not provide regulatory clarity and transparency to future applicants and other stakeholders.

Another advantage of a rulemaking is that it could examine the possible incorporation of physical security considerations into reactor designs in ways that could enhance security. As the Commission explained in its 2008 advanced reactor policy statement: "NRC also believes that it will be in the interest of the public as well as the design vendors and the prospective license applicants to address security issues early in the design stage to achieve a more robust and effective security posture for future nuclear power reactors."[2] A well-crafted rule could clarify how this goal can be achieved.

However, the staff correctly recognizes that this rulemaking may be complex and challenging. Reactor vendors are contemplating a wide range of very different designs. And there are substantial uncertainties about the attributes of those designs, which, with the exception of the Nuscale design, are not currently before the agency. Yet technology-neutral, performance-based standards would likely need to account for significant differences in multiple design attributes, including the number and nature of target sets, fuel type and enrichment level, source term, safety features, and physical footprint. Such standards could end up requiring so much design-specific regulatory guidance that the desired regulatory certainty benefits of a rule would not be realized.

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[1] SECY-18-0076 at 2.

[2] *Federal Register* Notice, Policy Statement on the Regulation of Advanced Reactors, 73 FR 60612; October 14, 2008 at 60616.

On balance, I think the potential advantages of a rulemaking warrant exploring this approach. I therefore approve the staff's recommendation to initiate a limited-scope rulemaking on physical security for SMRs and non-light-water reactors.

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

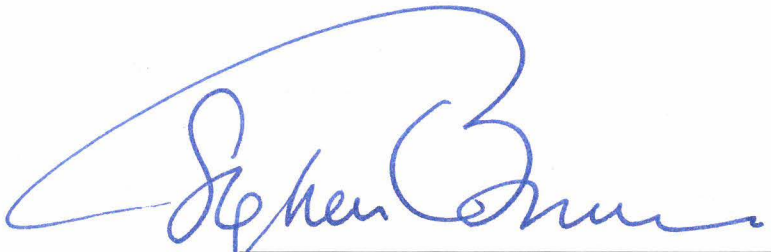
FROM: Commissioner Burns

SUBJECT: SECY-18-0076: Options and Recommendation for Physical Security for Advanced Reactors

Approved X **Disapproved** ____ **Abstain** ____ **Not Participating** ____

COMMENTS: **Below** X **Attached** ____ **None** ____

I approve the staff's recommended Option 3 to perform a limited-scope revision of regulations and guidance related to physical security for advanced reactors. I also approve the staff's rulemaking plan included as Enclosure 1 to SECY-18-0076. In presenting this issue to the Commission, the staff is following the Commission's direction related to new reactor designs to "think expansively about upcoming issues and to engage the Commission early." Proceeding with the rulemaking would provide incentive for advanced reactor designers to incorporate reactor attributes defined in the NRC's Policy Statement on the Regulation of Advanced Reactors. It was a specific goal of the Commission to include attributes related to physical security when it updated the policy statement in 2008.



Entered in STARS
Yes X
No ____

Signature
12 October 2018
Date

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: Commissioner Caputo

SUBJECT: SECY-18-0076: Options and Recommendation for Physical Security for Advanced Reactors

Approved __X__ Disapproved ____ Abstain ____ Not Participating ____

COMMENTS: Below ____ Attached __X__ None ____

Entered in STARS

Yes __✓__

No ____

Signature

11/01/18

Date

Commissioner Caputo Comments on SECY-18-0076

I approve staff's recommended Option 3, a limited-scope revision of regulations and guidance related to physical security for advanced reactors, and the rulemaking plan, as modified below, in Enclosure 1. I note in the rulemaking plan, that guidance documents would be developed by industry for review and endorsement by the staff. When interacting with industry during the development of guidance documents, the staff should work with them to use already developed standards and guidance that are available from the Department of Energy, Department of Defense, and other Federal agencies as well as available security industry best practices.

I support the view expressed by Chairman Svinicki that a limited-scope rulemaking to establish a risk-informed, performance-based, and consequence-based approach to this issue is more likely to be timely than a broad-scope rulemaking, while also providing advantages over other options considered, such as long-term use of exemption processes or modification of current guidance documents. However, I propose that, as the Commission has encouraged previously on topics such as financial qualification and emergency preparedness, the staff employ the use of exemptions, as needed, provided the regulatory basis is issued, until the final rule is implemented.

Because the rulemaking would be limited in scope and because there has been extensive stakeholder interaction on this topic, I support the Chairman's proposal that the regulatory basis be completed within 12 months and the additional Chairman edits to the rulemaking plan. I stress to the staff the continued recognition, as it undertakes this rulemaking effort, that the concept of "high assurance" of adequate protection found in our security regulations is equivalent to "reasonable assurance" when it comes to determining what level of regulation is appropriate.

In summary, I support the staff efforts to reduce reliance on operational requirements and staffing while encouraging the design process to resolve engineered security features early in the design process and assure that the necessary security protection is provided while reducing recurring operating costs.

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: Commissioner Wright

SUBJECT: SECY-18-0076: Options and Recommendation for Physical Security for Advanced Reactors

Approved X **Disapproved** ____ **Abstain** ____ **Not Participating** ____

COMMENTS: **Below** X **Attached** ____ **None** ____

I commend the staff for its efforts in presenting this complex and challenging issue to the Commission. In its paper, the staff thoughtfully considered the advantages and disadvantages of each option presented, and identified a recommended path forward that is consistent with previous Commission direction and established policy related to advanced reactors, the NRC's Principles of Good Regulation, and the agency's overall efforts to be more risk-informed.

I approve the staff's recommended Option 3 to initiate a limited-scope revision of regulations and guidance related to physical security for advanced reactors. I also approve the staff's rulemaking plan included as Enclosure 1 to SECY-18-0076. I appreciate the staff's efforts to engage with stakeholders to identify risk-informed, performance-based alternatives for certain portions of the physical security program. Identifying these alternatives should: result in requirements commensurate with the risks posed by advanced reactors; allow for timely support of critical design decisions needed by current reactor developers; enhance regulatory effectiveness by providing a stable and predictable process for implementing physical security for advanced reactors; and allow the public and other stakeholders an opportunity to comment on novel approaches to physical security.

Entered in STARS
Yes ✓
No ____

Signature

10/30/18
Date