POLICY ISSUE
(Information)

December 16, 2025 SECY-25-0103

FOR: The Commissioners

FROM: Michael F. King
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SUBJECT: UPDATE ON DEVELOPMENT OF THE U.S. NUCLEAR REGULATORY COMMISSION'S ADVANCED REACTOR CONSTRUCTION OVERSIGHT PROGRAM

PURPOSE:

The purpose of this paper is to update the Commission on the U.S. Nuclear Regulatory Commission (NRC) staff's development of the Advanced Reactor Construction Oversight Program (ARCOP).

SUMMARY:

This paper informs the Commission of the status of development of a performance-based, technology-inclusive, risk-informed, and scalable ARCOP, including the adequacy of reactor manufacturing activities. Specifically, it provides information on the staff's planned approach for advanced reactor construction inspections, the inspection finding significance determination process (SDP), enforcement, and project quality assessment. The staff is finalizing ARCOP guidance documents and will be ready to implement the program when construction or manufacturing activities warrant regulatory oversight. The regulatory oversight envisioned in the ARCOP will provide bases for an NRC finding that the acceptance criteria in the inspections, tests, analyses, and acceptance criteria (ITAAC) in a combined license (COL) are met or that an operating license (OL) can be issued. This paper does not address any new commitments or resource implications.

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BACKGROUND:

To fulfill the requirements of the Atomic Energy Act of 1954, as amended (the Act), NRC regulations allow license applicants to construct and operate production or utilization facilities pursuant to (1) a two-step licensing process (construction permit (CP) followed by an OL), or (2) a one-step licensing process (i.e., COL). These processes require NRC to verify that the facility has been constructed and will operate in conformity with the approved design described in the application, as amended, either to issue an OL in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.57(a)(1) or, for a COL, to find that the acceptance criteria in 10 CFR 52.103(g) are met.

In the case of Vogtle Electric Generating Plant, Units 3 and 4, the staff verified that the licensee completed the required inspections, tests, and analyses and that the associated acceptance criteria were met through implementation of the Construction Reactor Oversight Process (cROP). The cROP provides effective oversight for construction of large light-water reactors (LWRs) licensed under 10 CFR Part 52. Since cROP development and implementation, new reactor construction interest has evolved to include large LWRs and advanced reactors, including small modular reactors (SMRs) and microreactors using both LWR and non-LWR technologies. In view of the expected diversity of advanced reactor projects and deployment models, the staff informed the Commission of the their intent to improve construction oversight through development of the ARCOP in SECY-23-0048, "Vision for the Nuclear Regulatory Commission's Advanced Reactor Construction Oversight Program," dated June 6, 2023 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML23061A086).

The staff applied the guiding principles discussed in SECY-23-0048 and the lessons learned documented in "10 CFR Part 52 Construction Lessons-Learned Report," dated January 16, 2024 (ML23325A202), to develop proposed approaches for the ARCOP elements of performance monitoring, issue evaluation and dispositioning, and performance assessment. The staff held public workshops to seek feedback on the various approaches. Enclosure 1 provides a synopsis of the potential approaches for each element, stakeholder feedback on the approaches, and the selected approach. The staff is developing inspection manual chapters to provide guidance on the selected approach for each element. Limited work remains to develop approaches for operational programs, including emergency preparedness, safeguards and security, and safety culture. Enclosure 2 provides information on the staff's plans to address these and other future topics.

Development of the ARCOP is consistent with Administration priorities discussed in Executive Order (EO) 14300, "Ordering the Reform of the Nuclear Regulatory Commission" (90 FR 22587; May 29, 2025), and was also developed consistent with direction in the Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024 (ADVANCE Act).

DISCUSSION:

As described in SECY-23-0048, advanced reactor construction under the purview of the ARCOP will include commercial power microreactors and SMRs incorporating both LWR and non-LWR technologies. Further development of the ARCOP as discussed in this paper has resulted in a program that fully meets the guiding principles of being risk-informed, performance-based, technology-inclusive, scalable, and informed by lessons learned from past construction oversight experience, and as such has been determined to also be appropriate for future construction oversight of large LWRs as well.

Various business models associated with new reactor technologies assume the increased use of factory manufacturing, and many activities that were historically conducted onsite will be shifted to factories off site. A similar shift in NRC oversight activities will be necessary. The staff envisions three scenarios to which it will apply the ARCOP:

- offsite manufacturing of power reactors by a manufacturing license (ML) holder, with a reduced extent of NRC-licensed construction activity on the deployment site;

- offsite fabrication and assembly of nearly complete reactor plants by a project vendor under contract with a COL or CP holder, with a greater extent of NRC-licensed construction activity on the deployment site to complete the reactor and install it; and

- offsite fabrication of many plant structures, systems, and components (SSCs), but with most power reactor construction activities performed onsite by a COL or CP holder.

The ARCOP refers to an entity holding an ML as a "manufacturer." An ML authorizes a manufacturer to construct complete reactor facilities in a factory. Pertinent NRC oversight activities associated with factory manufacturing will fall within the scope of ARCOP. Some prospective vendors, however, have proposed business models under which the vendor would fabricate and assemble nearly complete reactor plants in a factory. If these activities do not amount to "manufacturing" of a utilization facility under NRC regulations and the Act, they may be performed without an ML; a vendor would normally perform such activities under a contract with an NRC licensee (e.g., a holder of an ML, CP, or COL). The NRC staff determined it would be more efficient and effective for the staff to oversee factory fabrication and assembly of incomplete utilization facilities under ARCOP to ensure the activities are performed in accordance with NRC requirements, including the requirements of the license held by the licensee that contracted with the vendor to perform the work.

The staff anticipates that for many advanced reactor applications, fewer risk-significant construction activities will occur onsite compared to those inspected under the cROP. Including manufacturers and project vendors under the ARCOP ensures appropriate NRC oversight of pertinent activities and provides for increased efficiency by scaling inspection footprints of individual projects. It also provides for increased efficiency by providing the ability to scale back inspections at project vendors performing fabrication and assembly of N^{th}-of-a-kind designs as NRC gains confidence of the quality of components being manufactured.

ARCOP Regulatory Oversight Framework

The ARCOP is technology inclusive and scalable, commensurate with the design features of the various new and advanced reactor technologies prospective vendors and applicants have described. The ARCOP can be adapted to a range of plant designs to inform and scale the scope of construction oversight needed to ensure adequate protection of public health and safety once operation begins. The ARCOP employs risk insights and performance-based approaches to the oversight of commercial advanced reactor manufacturing and construction. The ARCOP framework includes a means to monitor performance and verify quality, determine the significance of issues, and provide an appropriate NRC response.

In this paper, "quality" refers to the application of quality assurance measures during the design, fabrication, manufacture, construction, and testing of SSCs. Application of these measures during construction ensures that nuclear plant SSCs are built according to their approved licensing bases (i.e., "predetermined requirements") and will perform satisfactorily in service.

Similar to the development of the operating Reactor Oversight Process (ROP) and the cROP, the staff used a hierarchical approach to develop the ARCOP framework as shown in Figure 1. The regulatory framework for the ARCOP consists of three key strategic performance areas: quality of reactor plant construction, security and safeguards, and operational readiness. Within each strategic performance area are cornerstones that reflect the essential safety and security aspects of construction underpinning the finding prerequisite to facility operation. These five cornerstones are: reactivity control, heat removal, and radionuclide retention -- under the quality of reactor plant construction strategic performance area; security programs -- under the security and safeguards strategic performance area; and operational programs -- under the operational readiness strategic performance area. Satisfactory licensee performance in the cornerstones provides reasonable assurance that advanced reactors will be built and will operate in accordance with their licensing and design bases and, ultimately, that the NRC's public health and safety mission is being accomplished. Each cornerstone will be inspected using a risk-informed, performance-based sampling methodology scaled to the design.

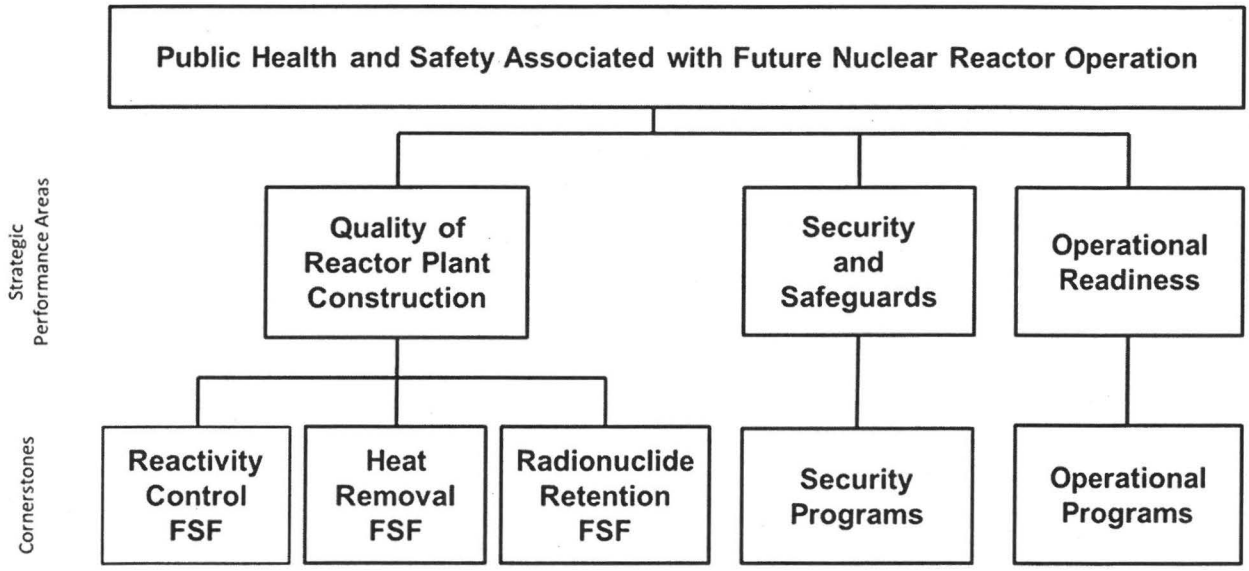

Figure 1: ARCOP regulatory oversight framework

The staff modified the three cornerstones in the quality of reactor plant construction strategic performance area from those initially discussed in SECY-23-0048. Specifically, the cornerstones are the three fundamental safety functions (FSFs) common to all reactor technologies, ensuring a technology-inclusive framework, of reactivity control, heat removal and radionuclide retention. Orienting the cornerstones within the quality of reactor plant construction strategic performance area around the FSFs enables efficient and effective scoping by integrating inspection efforts, whether on or off site. Additionally, orienting the cornerstones around the FSFs allows simple, risk-informed screening of inspection issues that accounts for unique features of advanced reactors. The staff anticipates that SSCs that can affect reactor safety described in license applications will align well with the FSFs based on existing regulatory requirements.[1]

[1] All CP and COL applications are required to identify principal design criteria (PDC) for the proposed facility. For a water-cooled design, the general design criteria (GDC) specified in 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," set the minimum requirements for the PDC. These GDC are organized by

The two other cornerstones of security programs and operational programs complete the ARCOP framework. They are essential for ascertaining plant operational readiness and for ensuring appropriate operational and security programs are implemented before the NRC's findings pursuant to 10 CFR 50.57, "Issuance of operating license," or 10 CFR 52.103(g).

ARCOP Elements

Like other NRC reactor oversight programs, the ARCOP includes the elements of performance monitoring, dispositioning findings, including through a risk-informed SDP and application of the NRC Enforcement Policy, and performance assessment. The following discussion of ARCOP elements applies to manufacturing, project vendor activities, and onsite construction activities in the quality of reactor plant construction strategic performance area. As discussed earlier, development work remains in the operational readiness and safeguards and security strategic performance areas.

Performance Monitoring

The NRC staff primarily monitors performance during construction through the construction inspection program. Inspectors will consider key construction activities and then select critical elements of the design in a risk-informed and performance-based sampling approach to verify that cornerstone objectives are met.

The staff developed the ARCOP baseline inspection program (BIP) to be scalable so that it will result in a planned inspection footprint that is commensurate with the expected risk posed by advanced reactor facilities and, based on lessons learned from implementing the cROP, allow for more efficient execution by providing necessary flexibility. The ARCOP BIP is the minimum inspection effort necessary to verify the cornerstone objectives are met, thereby ensuring that the facility has been constructed and will operate in conformity with the licensing bases. The BIP will be completed for each unit under construction to inform the Commission's findings under 10 CFR 50.57 or 10 CFR 52.103(g), or pursuant to future operational requirements in 10 CFR Part 53, as applicable. The ARCOP BIP will, in part, provide the insights necessary to assess performance in the three cornerstones regarding the quality of reactor plant construction (refer to Figure 1).

Under the cROP, the staff selected, or targeted, specific ITAAC for inspection, and these ITAAC had to be inspected to complete the BIP. As stated in the "10 CFR Part 52 Construction Lessons-Learned Report," this practice, coupled with NRC reviews of ITAAC closure notifications, provided the staff reasonable assurance that the facilities were built and would operate in accordance with their approved designs and licensing bases for Vogtle Units 3 and 4. However, a key lesson was that the NRC's process for targeting ITAAC was too prescriptive and did not provide a flexible and efficient means to make adjustments when planned inspections could not be performed due to unexpected complications (e.g., construction schedule changes). For the quality of reactor plant construction strategic performance area, the ARCOP will not identify a set of targeted ITAAC or SSCs to inspect. Instead, ARCOP will provide a range of inspection opportunities from which the staff can select, informed by risk

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sections, and the GDC associated with reactor safety align well with the FSFs. Regulatory Guide 1.232, "Guidance for Developing Principal Design Criteria for Non-Light-Water Reactors," discusses how GDC may be adapted for non-LWR designs to develop PDC. Like the GDC for LWRs, the non-LWR PDC included in Regulatory Guide 1.232 are well-aligned with the FSFs. The FSFs are also consistent with international standards described in International Atomic Energy Agency Specific Safety Guide 30, "Safety Classification of Structures, Systems and Components in Nuclear Power Plants," issued May 2014.

insights and availability during the scheduled inspection. This approach is expected to result in more efficient use of staff resources while ensuring that a representative sample of construction activities is inspected to verify that cornerstone objectives are met. This methodology draws on the experience from the ROP, where guidance is provided for sample selection, and inspectors are provided with the flexibility to select the specific items to sample.

Flexibility is provided by a scoping and planning tool referred to as an "inspection scoping matrix" that organizes construction and manufacturing activities into inspection areas based on SSC and construction or manufacturing process commonalities. For each unique advanced reactor design, the staff will develop a design-specific inspection scoping matrix. It will be used to develop project-specific inspection scoping matrices that take into consideration site-or project-specific information and will include all offsite project vendor and manufacturing activities along with any onsite construction activities that have a significant impact on plant safety. Applicant and licensee insights into the design and specific fabrication techniques are used to gauge the complexity and industry experience associated with specific activities and will be considered when developing the inspection scoping matrix.

Scalability is achieved in the inspection scoping matrix through the number of inspection areas and adjustment of the minimum and maximum sample sizes assigned to each inspection area. For example, the NRC expects that advanced reactors will have significantly fewer risk-significant SSCs than a large LWR, and therefore, an advanced reactor's inspection scoping matrix will include significantly fewer SSCs with correspondingly fewer inspection areas and minimum inspection samples necessary to verify reasonable assurance of construction quality. Additionally, as experience is gained with constructing a particular design, the inspection scoping matrix will integrate with the assessment program, which is discussed later, to allow reductions in overall inspection scope for N^{th}-of-a-kind deployments as confidence is gained with the quality of manufacturing and assembly.

The NRC will continue to implement its vendor inspection program (VIP) to verify that reactor applicants and licensees are fulfilling their regulatory obligations with respect to providing effective oversight of the supply chain. The vendor inspection staff monitors the supply chain by performing various oversight activities (e.g., inspections and inspection support, audits, and observations) intended to verify the effective implementation of vendors' quality assurance programs (QAPs). The NRC will use non-compliances identified through the VIP to inform the ARCOP inspection program. However, when a project's planned construction approach includes the integration of SSCs into a complete or substantially complete reactor assembly at an offsite location by a project vendor or manufacture of a complete reactor plant by a manufacturer, those activities will be within the scope of the ARCOP and not the VIP. By including manufacturers and project vendors under the ARCOP, the staff is establishing a delineation between vendor inspection and ARCOP inspection to limit duplication of effort and improve program efficiency.

The NRC will perform supplemental inspections beyond the BIP when it identifies safety-significant inspection findings. The supplemental inspections will typically occur at the location where the safety-significant finding was identified (i.e., either off site or at the construction site). The NRC may also perform reactive inspections in response to specific safety-significant construction events (e.g., a report of significant breakdown of a portion of the QAP per 10 CFR 50.55(e)). The NRC will include specific criteria for initiating these inspections in the ARCOP guidance documents.

Dispositioning Findings

The staff will disposition ARCOP findings using a process consistent with the NRC Enforcement Policy, Section 2.2.3, "Assessment of Violations Identified Under the ROP or cROP." Violations are divided into two categories: (1) those whose significance can be evaluated under the SDP because they have a direct impact on an ARCOP safety cornerstone, and (2) those that are outside the capability of the SDP that are evaluated under traditional enforcement. The staff anticipates that most violations will be dispositioned using the SDP. Violations outside the capability of the SDP are described in the NRC Enforcement Policy, Section 2.2.4, "Using Traditional Enforcement to Disposition Violations Identified at Power Reactors."

Once it is determined that a non-compliance exists, the staff will determine its potential significance to future plant operations if the non-compliance had not been identified during construction and persisted into operations.[2]

Using this foundation for significance determination as a guide, the staff is implementing new features in the ARCOP to further risk-inform the disposition of inspection issues. For example, if a license holder, manufacturer, or project vendor self-identifies and corrects a violation through its QAP, that issue would have no impact on plant operations. As such, the staff intends to introduce the concept of self-identified construction non-compliances (SCNs). SCNs will normally involve screening such non-compliances as minor violations, reflecting no potential impact on plant safety during future operations and implementing no formal enforcement action.

The NRC will determine the significance of more than minor violations attributed to a manufacturer or license holder using the ARCOP SDP. The ARCOP SDP will be complimentary to the ROP and will include criteria that seek to balance the priorities of predictability, efficiency, and public transparency with the need to preserve effective oversight and enable early detection of performance issues. Inspection findings processed through the SDP, including associated violations, will be documented in inspection reports and, as in the ROP and described below, assigned a color representative of their significance.

Project vendors are unlicensed entities. Therefore, inspection findings of more than minor significance identified at an offsite advanced reactor project vendor facility will normally be dispositioned as notices of nonconformance (NONs) to the project vendor. NONs do not have a severity level or color assigned to them to represent significance. However, the NRC will use the ARCOP SDP screening tool to inform decision-making on inspection follow-up. This process is only applicable to project vendors inspected under the ARCOP and is not used to screen traditional vendor findings, which will continue to be covered under the VIP.

ARCOP Significance Determination Process

The significance of findings in the quality of reactor plant construction strategic performance area will be based on the finding's potential impact on the FSFs during future operations. The staff intends to assign categories by color, similar to the categories in the ROP, to represent the safety significance of more than minor findings, as shown in Figure 2. (Minor findings have no potential impact on FSFs during operations.)

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[2] SRM-SECY-10-0140, "Staff Requirements—SECY-10-0140—Options for Revising the Construction Reactor Oversight Process Assessment Program," dated March 21, 2011, required the staff to factor into the SDP whether a licensee's inspections, plant tests, or other means, such as the ITAAC process, would have revealed and allowed for correction of the deficiency before incurring any actual risk (i.e., during operations with irradiated fuel).

Finding Safety Significance	Criteria
Yellow	Moderate potential impact on FSFs during operations
White	Low potential impact on FSFs during operations
Green	Very low potential impact on FSFs during operations

Figure 2: ARCOP finding safety-significance criteria

As previously directed by the Commission,[3] the staff has based the ARCOP significance determination process on a finding's potential to adversely affect reactor operations. However, the staff acknowledges that deficiencies identified during construction are not associated with a direct radiological risk to the public. Therefore, the staff proposes to scale the significance of construction findings accordingly and does not plan to use the red category, as employed in the ROP, for construction findings. As discussed later in this paper, the ARCOP will include a performance assessment process that describes NRC actions in response to a performance level that is unacceptable.

Based on lessons learned during the implementation of the cROP for the AP1000 plants and past Commission direction,[3] the staff will include a feature in ARCOP to credit a licensee's QAP for identification of certain NRC-identified non-compliances when the QAP likely would have identified the issue prior to plant operation. The staff labels this as a "QAP backstop," which refers to a situation where a normally scheduled QAP activity is designed to detect SSC deficiencies or non-compliances and would likely identify the condition that gave rise to a finding. To credit a QAP backstop, the activity must be (1) reasonably defined or contained in a procedure, (2) planned to occur before a finding on the adequacy of an OL application or whether the acceptance criteria in the ITAAC are met, and (3) likely to detect the deficiency or non-compliance described by the finding. If a QAP backstop exists and the ARCOP SDP screening indicates the issue could have more than minor significance, the staff would document the issue as green because there is high likelihood that the deficiency or non-compliance would be identified during the QAP backstop activity and would not affect operations. For example, if an NRC inspector identified a valve that was not installed in accordance with a procedure, but the licensee had already scheduled a preoperational test that would likely identify the error, then the non-compliance would not have greater-than-green risk significance.

The staff developed specific draft SDP guidance for very low, low, and moderate potential impact on FSFs during operations. In public workshops, the staff presented examples of hypothetical inspection findings and met with stakeholders in small focus groups to exercise the draft SDP guidance. The staff received positive and constructive feedback during these exercises that the processes were simple and accurately reflected the risk significance of issues. The exercises identified some areas for additional clarification that will be resolved through the development of formal inspection guidance and training.

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[3] SRM-SECY-10-0140, "Staff Requirements—SECY-10-0140—Options for Revising the Construction Reactor Oversight Process Assessment Program," dated March 21, 2011.

Traditional Enforcement

The staff will continue to use traditional enforcement for violations outside the capability of the SDP, such as for willful violations, violations that may impact the ability of the NRC to perform its regulatory oversight function, and violations that result in actual safety or security consequences.

Proposals for dispositioning ARCOP issues are consistent with the current Enforcement Policy, and the staff anticipates that only minor revisions to the Policy will be necessary. For example, Enforcement Policy changes to add the ARCOP to the applicability of section 2.2.3, "Assessment of Violations Identified Under the ROP or cROP," section 2.2.4, "Using Traditional Enforcement to Disposition Violations Identified at Power Reactors," and section 2.3.2, "Noncited Violation," may be needed. The staff will ensure that proposed Enforcement Policy revisions follow established internal procedures regarding Commission review and approval.

Performance Assessment

The ARCOP assessment program allows the NRC to integrate various information sources relevant to advanced reactor construction quality, make objective conclusions regarding the significance of findings, take actions based on these conclusions in a predictable manner, and effectively communicate these results to the licensee and the public. Like other NRC oversight programs, the ARCOP assessment program will include performance reviews, program reviews, and public stakeholder involvement.

A lesson identified in the "10 CFR Part 52 Construction Lessons-Learned Report" is that an annual assessment frequency is potentially too long for fast-paced projects, such as advanced reactor manufacturing and deployment, and a shorter assessment frequency is recommended. Additionally, a key difference between operating reactors and reactors under construction is that reactor operations are cyclical and conducive to a yearly assessment, while construction is linear and is more efficiently evaluated as inspection activities are completed. Therefore, the NRC plans to conduct ARCOP performance reviews after the completion of each baseline inspection, and the respective inspection report will include the assessment results for the inspection areas sampled. The frequency of completion of these inspections will be driven by the inspection scoping matrix and could range from infrequent (quarterly or less), to more frequent (e.g., monthly or more), depending on the complexity of the construction project and amount of activity occurring. The ARCOP continuous performance reviews are designed to assess inspection results to determine if the cornerstone safety objectives have been and will continue to be met. During the continuous assessment process, the staff can adjust the baseline inspection plan. For example, as a design evolves during construction, more or fewer inspection areas or samples may be needed. This would be reflected in adjustments to the baseline inspection scoping matrix through the addition or removal of inspection areas or adjustments to the minimum and maximum sample expectations. These changes could also be made in response to performance, such as the identification of multiple inspection findings in a specific inspection area. Appropriate management controls will ensure adjustments to the inspection scoping matrix are done in a manner which is appropriate for the circumstances and the history and basis for any changes are retained to support continuous improvement.

The ROP and the cROP specify the appropriate level of agency response to the licensee's safety performance using the guidelines in an action matrix. Each reactor is assigned to an action matrix column (e.g., Licensee Response Column, Regulatory Response Column), with specified agency actions for each column. In this way, the ROP and the cROP provide a

predictable response from the NRC in a risk-informed, performance-based manner. Additionally, the ROP action matrix reflects consideration of concurrent findings (i.e., existing at the same time) to determine if a higher level of response is needed. Under the ARCOP, the staff will assess results of NRC inspections of project vendors, manufacturers, and licensees associated with advanced reactor projects. Inspection inputs from multiple entities, potentially for multiple units under construction, complicate the ROP action matrix assessment program approach. Performance is more efficiently evaluated as inspection activities are completed. Therefore, the staff will determine the appropriate NRC response to ARCOP inspection results in accordance with guidelines in an ARCOP Finding Response Table, shown in Figure 3. Note that this also allows the supplemental inspection to be conducted at the location appropriate to the circumstances (e.g., conducting an inspection at a manufacturer for a significant deficiency that occurs under a manufacturing license).

RESULTS		GREEN INSPECTION FINDING	WHITE INSPECTION FINDING	YELLOW INSPECTION FINDING
RESPONSE APPLIED TO EACH FINDING	Regulatory Engagement Meeting Participants	None	Branch chief or division director	Regional Administrator or designee meets with licensee senior management
	Enforcement Action Recipient Response	Corrective Action Program	Causal evaluation and corrective actions	Causal evaluation and corrective actions
	NRC Inspection	Baseline Inspection	Supplemental Inspection and evaluation for additional baseline inspection(s) in area(s) of concern	Supplemental Inspection and evaluation for additional baseline inspection(s) in area(s) of concern
COMMUNICATIONS	Inspection Report or Letter	Branch chief review/sign inspection report. Inspection report posted on public website.	Division director review/sign inspection report (with inspection plan). Inspection report posted on public website.	Regional Administrator review/sign inspection report (with inspection plan). Inspection report posted on public website.

Figure 3: Example ARCOP Finding Response Table

The ARCOP Finding Response Table links regulatory actions to a finding's significance. The NRC response to inspection results under the Finding Response Table will range from implementing the baseline inspection program, when only very low significance issues are identified, to supplemental inspections for issues that have greater than very low significance. The table will also specify the level of communication normally warranted for the identified findings. The ARCOP Finding Response Table provides for the same type of predictable response from the NRC in a risk-informed, performance-based manner as the action matrix does for the ROP and the cROP. Similar to what was included in the cROP, through the assessment process, the NRC staff will also consider whether suspension of construction activities is warranted due to unacceptable construction quality issues, such as multiple examples where construction was determined to be outside of its design basis due to inappropriate modifications or the demonstrated lack of an effective corrective action program.

Details regarding this decision-making process, including more detailed actions in the finding response table, will be included in inspection manual documents.

Ultimately, the assessment process is intended to provide a basis for an NRC decision on whether to issue an operating license pursuant to 10 CFR 50.57 or to find that the acceptance criteria in the ITAAC are met in accordance with 10 CFR 52.103(g). Given that the staff plans to regularly communicate assessment results to each licensee in inspection reports, and because the ARCOP will not include assessment cycles, the staff does not plan to conduct mid-cycle or end-of-cycle performance reviews or issue midcycle and end-of-cycle letters, as is done for the ROP and cROP. Instead, the staff plans to conduct an annual review of the implementation of ARCOP across all advanced reactor project vendors, manufacturers, and licensees. This annual review will be documented in an annual report, which will support NRC management and external stakeholder awareness of advanced reactor projects to be discussed at the agency action review meeting, as well as other details regarding results from ARCOP implementation.

OTHER CONSIDERATIONS:

Legislative Direction

The staff developed the ARCOP to verify compliance of the design, fabrication, construction, manufacture, and testing of the SSCs of a facility with the regulations in 10 CFR Part 50 and 10 CFR Part 52,[4] while also using inspection resources in the most efficient and effective manner. The staff accomplished this goal by ensuring the ARCOP is technology inclusive and scalable to the risks posed by the varying advanced reactor technologies.

The ADVANCE Act, section 208, "Regulatory Requirements for Micro-Reactors," requires the NRC to develop and implement, among other things, risk-informed and performance-based strategies and guidance for microreactor oversight and inspections.[5] Consistent with section 208 of the ADVANCE Act, the ARCOP includes risk-informed and performance-based strategies that reduce redundancies and enhance efficiency for advanced reactor construction oversight. This is accomplished through the development and implementation of unique design-and project-specific inspection scoping matrices and the processes developed for dispositioning issues, including significance determination and enforcement, and performance assessment. Increased efficiency and elimination of redundancy is also accomplished by ensuring a delineation between the ARCOP and VIP responsibilities for oversight of offsite activities.

EO 14300, among other things, directs the NRC to "[r]evise the Reactor Oversight Process and reactor security rules and requirements to reduce unnecessary burdens and be responsive to credible risks." It also directs the NRC to "[e]stablish stringent thresholds for circumstances in which the NRC may demand changes to reactor design once construction is underway." The ARCOP supports these directives; specifically, it has been developed to be scalable, ensuring the only the minimum amount of inspection necessary to ensure safety is performed. This will

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[4] The staff will confirm that the ARCOP will also be sufficient to verify compliance with the regulations in 10 CFR Part 53 as they are finalized or make adjustments, as necessary.

[5] In keeping with the actions required in section 208, on July 10, 2025, the NRC submitted to Congress the report required by section 507 of the ADVANCE Act, "Improving Oversight and Inspection Programs" (ML25077A251). Section 507 required the report to identify specific improvements to the nuclear reactor oversight and inspection programs that the Commission may implement to maximize their efficiency through, where appropriate, the use of risk-informed, performance-based procedures; expanded incorporation of information technologies; and staff training.

reduce unnecessary burden on developers and will reduce the potential for time to be spent analyzing or addressing issues that are not important to safety. The staff has also learned many lessons from oversight activities performed during the construction of recent new reactor projects. These lessons have emphasized the importance of understanding the potential impacts of inspection outcomes on licensees. To that end, the ARCOP has been designed using a framework that ensures non-compliances and inspector observations/questions identified during construction will be dispositioned in a risk-informed manner. This approach will include use of the Very Low Safety Significance Issue Resolution process to provide timely disposition of issues that are not important to safety. By leveraging a risk-informed process for inspection and dispositioning non-compliances, the scope of matters that might lead a licensee or vendor to make changes to its design or operational programs as a result of issues identified during inspections will be appropriately focused.

ARCOP Implementation

The staff is developing ARCOP inspection guidance documents and will be ready to implement the ARCOP when construction and manufacturing activities begin. The ARCOP will assure quality in these activities and provide a basis for the NRC to make the required findings upon completion of unit construction. The staff currently anticipates that advanced reactor construction activity warranting NRC oversight will not occur until late in calendar year 2026. Should construction activities begin earlier than anticipated, the staff will adjust priorities as necessary to ensure its readiness for construction oversight through ARCOP implementation.

CONCLUSION:

In developing the ARCOP framework, the staff incorporated lessons learned from AP1000 construction projects; developed a significant portion of program and inspection implementation guidance; and presented the framework in its then-current form and solicited feedback from key stakeholders at multiple public meetings on the options that the staff considered for different ARCOP aspects discussed in this paper. The staff is finalizing ARCOP guidance documents and will be ready to implement the program when construction or manufacturing activities warrant regulatory oversight.

RESOURCES:
This paper does not address any new commitments or resource implications.

COORDINATION:
The Office of the General Counsel reviewed this Commission paper and has no legal objection.

Michael F. King
Acting Executive Director
for Operations

Enclosures
1. Planned Approaches and Options for ARCOP Elements
2. Planned Activities and Topics for Future Consideration

SUBJECT: UPDATE ON DEVELOPMENT OF THE U.S. NUCLEAR REGULATORY COMMISSION'S ADVANCED REACTOR CONSTRUCTION OVERSIGHT PROGRAM, DATED: December 16, 2025

ADAMS Accession Nos.:PKG ML25024A241, SECY ML25024A243, Encl. 1: ML25024A245 Encl. 2: ML25024A244

OFFICE	NRR/DANU/ UARP	QTE	OE	NRR/DRO	RGN II
NAME	MWentzel (POBryan for)	JDougherty	DPelton	RFelts	MFranke
DATE	01/26/2025	10/29/2024	01/31/2025	01/30/2025	02/05/2025
OFFICE	NRR/DANU	OGC/NLO	NRR	EDO	
NAME	JBowen (JGreives for)	DTaggert	GBowman	MKing	
DATE	02/05/2025	10/12/2025	10/20/2025	12/16/25	

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