



POLICY ISSUE **(Information)**

March 1, 2023

SECY-23-0022

FOR: The Commissioners

FROM: Andrea D. Veil, Director
Office of Nuclear Reactor Regulation

SUBJECT: ADVANCED REACTOR PROGRAM STATUS

PURPOSE:

This paper provides the Commission with an update on the U.S. Nuclear Regulatory Commission (NRC) staff's ongoing activities to make the safe use of advanced nuclear reactor technology possible. The paper informs the Commission about the progress made during 2022 on its advanced reactor licensing and readiness activities, such as the resolution of key technology-inclusive policy issues, development of risk-informed and performance-based licensing approaches, related rulemakings, and interactions with current and prospective applicants and other stakeholders. This paper does not address any new commitments or resource implications.

SUMMARY

In 2022, the NRC staff completed many activities related to licensing and regulating advanced reactor technologies, including rulemakings and associated guidance development. The staff is reviewing two construction permit (CP) applications and numerous topical reports and white papers, has developed a report on the lessons learned from the NuScale design certification review, and continues engagement and cooperation with domestic and international partners in areas like microreactors and small modular reactors (SMRs).

CONTACT: Ossy Font, NRR/DANU
(301) 415-4290

BACKGROUND:

To prepare to review and regulate a new generation of non-light-water reactors (non-LWRs), the NRC staff developed the report “NRC Vision and Strategy: Safely Achieving Effective and Efficient Non-Light Water Reactor Mission Readiness,” issued December 2016.¹ To achieve the goals and objectives stated in that report, the NRC staff developed the “Near-Term Implementation Action Plans,”² and “Mid-Term and Long-Term Implementation Action Plans,”³ dated July 12, 2017. The Implementation Action Plans identified specific activities in the near term (0–5 years), midterm (5–10 years), and long term (beyond 10 years) to facilitate regulatory decisions associated with non-LWRs. The NRC staff has made significant progress on these activities over the past year, many of which relate to requirements in section 103 of the Nuclear Energy Innovation and Modernization Act, which was signed into law on January 14, 2019 (Public Law 115-439).⁴

DISCUSSION:

As described in the plan, the NRC staff organized its non-LWR readiness efforts into six strategic areas:

- (1) staff development and knowledge management
- (2) analytical tools
- (3) regulatory framework
- (4) consensus codes and standards
- (5) resolution of policy issues
- (6) communications

Since issuing the plan, the NRC staff has made significant progress in all six areas. This paper summarizes the NRC staff’s key accomplishments during calendar year 2022. Enclosure 1 provides more details on the NRC staff’s activities in each strategic area during 2022, including detailed status updates for the 10 Code of Federal Regulations (CFR) Part 53 rulemaking (section 6.2.1) and the rulemaking on alternative physical security requirements for advanced reactors (section 6.2.5). Enclosure 2 describes the status of advanced reactor licensing actions. The NRC staff described earlier accomplishments and provided background information in five previous annual updates: SECY-18-0011,⁵ SECY-19-0009,⁶ SECY-20-0010,⁷ SECY-21-0010,⁸ and SECY-22-0008⁹.

Rulemaking and Guidance Development

In 2022, the NRC staff continued to place a high priority on activities to establish a technology-inclusive, risk-informed and performance-based regulatory framework and develop associated guidance for advanced reactors. The NRC staff made significant progress towards developing a transformative, clear, reliable, and appropriately flexible, framework with

¹ Agencywide Documents Access and Management System Accession No. ML16356A670

² ML17165A069

³ ML17164A173

⁴ See <https://www.congress.gov/bill/115th-congress/senate-bill/512>

⁵ ML17334B217

⁶ ML18346A075

⁷ ML19331A712

⁸ ML20345A239

⁹ ML21337A377

regulations encompassing various attributes of advanced reactor technologies. This rulemaking would create 10 CFR Part 53, keeping with the NRC vision and strategy report and the statutory provisions in the Nuclear Energy Innovation and Modernization Act section 103(a)(4). The 10 CFR Part 53 framework is being developed with recognition of technological advances in reactor design and allows credit in the form of operational flexibilities when an advanced reactor design can show increased margins of safety, including slower transient response times and relatively small and slow release of fission products.

On September 30, 2022, the NRC staff released a draft of the proposed rulemaking package that would add 10 CFR Part 53 to existing regulations and make associated conforming changes to other regulations.¹⁰ The draft rulemaking package, including the draft proposed rule language, associated preamble, and five implementing guidance documents, was publicly released to support the final Advisory Committee on Reactor Safeguards meetings on the proposed rule in October and November 2022. Since the inception of the rulemaking, the NRC staff has held 35 public meetings with external stakeholders and the Advisory Committee on Reactor Safeguards and has received over 260 public comment submittals on the preliminary proposed rule language. In response to stakeholder feedback, the NRC staff has made several changes in the draft proposed rule. Most notably, the staff developed additional options to provide traditional alternatives within 10 CFR Part 53, with the objective of providing additional flexibility for a wide range of reactor designs. The NRC staff developed the alternatives requested by stakeholders to complement the risk-informed and performance-based approach initially developed in 10 CFR Part 53, which is referred to as Framework A in the proposed rule. The alternative framework, referred to as Framework B, more closely aligns with licensing methodologies used in international standards and those currently in 10 CFR Parts 50 and 52 to allow flexibility for future applicants. Within Framework B, the NRC staff has also developed the alternative evaluation for risk insights (AERI) approach that allows for an alternative to the use of probabilistic risk assessment in developing the licensing basis, provided that specified entry conditions are met. The AERI entry conditions are designed to limit use of the approach to commercial nuclear plants whose designs are relatively straightforward and do not involve overly complex systems and interactions and, accordingly, would not warrant development of a probabilistic performance assessment to provide quantitative risk insights. It should be noted that the AERI entry conditions are not safety or siting criteria and, accordingly, do not establish the design basis of the facility; rather, they are a screening tool used to determine when an AERI may be performed in lieu of a probabilistic risk assessment.

As part of the 10 CFR Part 53 rulemaking, the NRC staff created a technology inclusive security framework for advanced reactors. The NRC staff is applying a graded approach to a comprehensive range of security areas, including physical security, fitness for duty, access authorization, and cybersecurity, commensurate with the risk to public health and safety and the common defense and security.

The NRC staff submitted to the Commission SECY-22-0001, “Final Rule: Emergency Preparedness for Small Modular Reactors and Other New Technologies,”¹¹ dated January 3, 2022. The rulemaking would amend the NRC’s regulations to add alternative emergency preparedness requirements for SMRs and other new technologies, including non-LWRs and non-power production or utilization facilities. The rule would create a new section, 10 CFR 50.160, “Emergency preparedness for small modular reactors, non-light-water reactors, and non-power production or utilization facilities,” which would adopt a scalable plume

¹⁰ ML22272A034

¹¹ ML21200A055

exposure pathway emergency planning zone approach and a risk-informed and performance-based, consequence-oriented, and technology-inclusive emergency preparedness framework.

The NRC staff also submitted to the Commission SECY-22-0052, “Proposed Rule: Alignment of Licensing Processes and Lessons Learned from New Reactor Licensing,”¹² dated June 6, 2022, which is also relevant to advanced reactors. This rulemaking to align 10 CFR Part 50, “Domestic Licensing of Production and Utilization Facilities,” and 10 CFR Part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants,” would ensure the consistency of technical requirements between both reactor licensing processes and would incorporate lessons learned from new reactor licensing into the regulations. This rulemaking would increase consistency between reviews of new reactor license applications, reducing the need for exemptions and license amendment requests.

The NRC staff also submitted to the Commission SECY-22-0072, “Proposed Rule: Alternative Physical Security Requirements for Advanced Reactors,”¹³ dated August 2, 2022. This rulemaking, which has a limited scope and is separate from the security portion of the 10 CFR Part 53 rulemaking, would establish voluntary alternatives to certain physical security requirements and opportunities to credit security by design under the existing regulatory framework in 10 CFR Part 50 and 10 CFR Part 52, commensurate with the potential consequences to public health and safety and the common defense and security.

Additionally, the NRC staff has developed an advanced nuclear reactor generic environmental impact statement and associated draft proposed rulemaking¹⁴ and anticipates issuing it for comment in 2023, pending Commission approval.

In October 2022, the NRC staff issued interim staff guidance (ISG) DNRL-ISG-2022-01, “Safety Review of Light-Water Power Reactor Construction Permit Applications,”¹⁵ for light-water reactor (LWR) designs. The ISG discusses the regulatory requirements for a CP and the level of detail required for a preliminary safety analysis report accompanying a CP application submitted under 10 CFR Part 50. The appendix to the ISG clarifies and supplements the NRC staff’s review guidance in NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition.” On November 14, 2022, the NRC staff published a notice in the *Federal Register* making this ISG publicly available (87 FR 68202).¹⁶ The development of the ISG was conducted in coordination with efforts to develop guidance for non-LWR applicants applying under the 10 CFR Part 50 and 10 CFR Part 52 licensing processes. Coordination of LWR and non-LWR guidance activities demonstrates how the NRC staff is implementing its vision across programs.

In 2022, the NRC staff conducted two public meetings, presented at two Advisory Committee on Reactor Safeguards meetings, and briefed the Commission, on the development of regulatory framework options for fusion energy systems. In September 2022, the NRC staff issued a draft white paper, “Licensing and Regulating Fusion Energy Systems,”¹⁷ to support stakeholder and Advisory Committee on Reactor Safeguards interactions. On January 3, 2023, the NRC staff submitted SECY-23-0001, “Options for Licensing and Regulating Fusion Energy Systems,”¹⁸

¹² ML21159A055

¹³ ML21334A003

¹⁴ ML21222A044

¹⁵ ML22189A099

¹⁶ ML22189A097

¹⁷ ML22252A192

¹⁸ ML22273A178

providing options to the Commission for its consideration. The NRC staff recommended a limited-scope rulemaking to establish a regulatory framework for fusion energy systems that builds upon the NRC's byproduct material framework for near-term concepts and develops decision criteria to determine when a fusion energy system should be licensed using a utilization facility approach. This approach would ensure a systematic and risk-informed approach to the licensing and regulation of fusion energy systems and their associated hazards.

The NRC staff is also addressing micro-reactor licensing and other policy issues with industry and other stakeholders. The NRC staff is planning to engage stakeholders on potential policy issues related to factory-fabricated micro-reactors, such as those that may be fueled or tested in the factory and then transported to an approved site. The NRC staff is also addressing annual fees for non-LWRs and micro-reactors in the annual fee rule for fiscal year 2023.

In 2022, the NRC staff also continued several other activities that support advanced reactor licensing, including: issuance of the final NUREG-2246, "Fuel Qualification for Advanced Reactors,"¹⁹ and NUREG/CR-7299, "Fuel Qualification for Molten Salt Reactors."²⁰ NRC staff also awarded contracts to exercise the framework outlined in NUREG-2246 through generic assessments of metal fuel and tristructural isotropic fuel; issued an ISG for operator licensing²¹ and an ISG for staffing²²; and is developing guidance for content of applications, such as the Technology Inclusive Content of Application Project (TICAP) and Advanced Reactor Content of Application Project (ARCAP). Further, NRC staff reviewed an industry-developed change process similar to 10 CFR 50.59, "Changes, tests and experiments," for non-LWRs, and is developing a construction inspection and oversight framework for power reactors and research and test reactors.

Analytical Tools

The NRC staff continues to assess design information, experimental data, and analytical tools needed for non-LWR reviews. The NRC staff previously completed a series of five volumes and an introductory report documenting a comprehensive plan for developing computer code capabilities to support non-LWR reviews, further discussed in section 3.2 of enclosure 1. The NRC staff continues to develop proof-of-concept reference plant models for plant systems and accident progression and source term analysis, and the NRC staff expects to complete two additional models in 2023 beyond the 10 models already completed.

¹⁹ ML22063A131
²⁰ ML22339A161
²¹ ML22272A047
²² ML22272A049

Codes and Standards

The NRC staff released several documents related to industry consensus codes and standards in 2022. In March 2022, the NRC staff issued a *Federal Register* notice (87 FR 11490) requesting public comments on the additions to DG-1380, “Acceptability of ASME Code, Section III, Division 5, ‘High Temperature Reactors,’”²³ related to the endorsement of the Alloy 617 Code Cases. Also in March 2022, the NRC staff issued RG (For Trial Use) 1.247, “Acceptability of Probabilistic Risk Assessment Results for Non-Light-Water Reactor Risk-Informed Activities.”²⁴ In October 2022, the NRC staff issued RG 1.246, “Acceptability of ASME Code, Section XI, Division 2, ‘Requirements for Reliability and Integrity Management (RIM) Programs for Nuclear Power Plants,’ for Non-Light Water Reactors.”²⁵

Licensing Activities

The NRC staff is reviewing two CP applications for non-power non-LWRs and is increasing preapplication engagement with prospective applicants by reviewing numerous topical reports and white papers on advanced reactor issues, as well as having routine interactions with prospective applicants. As shown in Table 1, the NRC staff has completed the review of 21 topical reports and 28 white papers. Most of these reviews were completed during calendar year 2022. The NRC staff is actively reviewing an additional 22 topical reports and 14 white papers, alongside the 2 CP application reviews noted above.

Table 1: Preapplication Material Staff Statistics

	Topical Reports	White Papers
Active	22	14
Completed (2022)	21	28
Completed (Total)	26	43

²³ ML21091A277

²⁴ ML21235A008

²⁵ ML22061A244

Figure 1 provides an overview of the projected submittals of preapplication materials for NRC staff review within the coming years. In 2023, the NRC staff expects to receive an additional 22 preapplication submittals, most of which are expected to be topical reports.

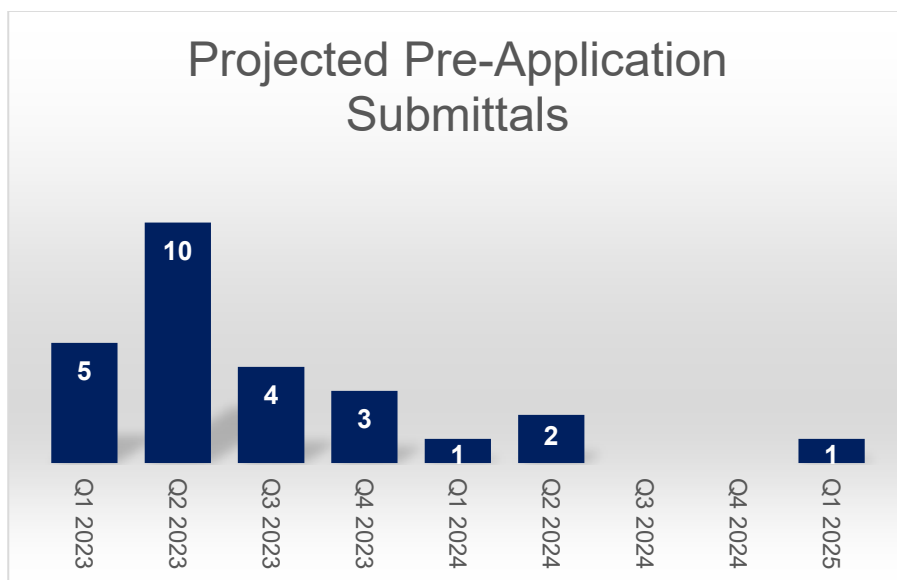


Figure 1: Projected Preapplication Submittals

In the past year, the NRC staff has participated in preapplication engagements with non-LWR developers to support the review of 4 white papers and 7 topical reports from X-Energy, LLC on its pebble bed high-temperature gas-cooled reactor design, 3 white papers from Terrestrial Energy USA, Inc. on its molten salt reactor design, 7 white papers and 2 topical reports from TerraPower, LLC on its sodium-cooled fast reactor design, 1 white paper from General Atomics on its helium-cooled fast reactor design, 1 white paper and 1 topical report from Oklo Power, LLC, on its advanced reactor design, and 25 white papers from Westinghouse Electric Company on the eVinci™ microreactor design. The staff continues to seek information from prospective near-term applicants to ensure that technology-inclusive readiness activities will be completed in time to support the staff's review of advanced reactor applications. The status of ongoing reviews is shared on publicly available dashboards, referenced below, intended to provide stakeholders updates on schedule, review progress, and the resolution of technical issues.

On January 6, 2022, the NRC denied, without prejudice, the Oklo Aurora combined license application because of Oklo's failure to provide information on several key topics for the Aurora design after continued NRC staff engagement.²⁶ Oklo has since initiated preapplication engagements with the NRC staff to support a future advanced reactor license application.

The Kairos Power, LLC Fluoride Salt Cooled, High Temperature Non-Power Reactor (Hermes) CP application was docketed for detailed review at the end of 2021. At the time of docketing, the NRC staff provided Kairos with an estimated 21-month review schedule for the application. This schedule was based, in part, on Kairos' substantial preapplication engagement on new and novel design features. The Hermes CP safety and environmental reviews are progressing on schedule, as tracked on the "Hermes - Kairos Project Status Dashboard."²⁷ As part of

²⁶ ML21357A034

²⁷ See <https://www.nrc.gov/reactors/non-power/new-facility-licensing/hermes-kairos/dashboard.html>

preapplication engagement with Kairos on the Hermes test reactor and Kairos power reactor technology, the NRC staff completed the review of eight topical reports from Kairos and developed an analytical reference plant model from publicly available information which can provide safety insights into plant performance. The NRC staff is nearing the completion of three more topical report reviews. These topical report reviews have contributed to enhanced predictability and efficiency in the Hermes CP application review and readiness for reviews associated with the future Kairos commercial reactor.

On February 14, 2022, the NRC staff approved Abilene Christian University's Quality Assurance Program Description Topical Report.²⁸ In a letter dated August 12, 2022, and supplemented on October 14, 2022, Abilene Christian University submitted an application for a CP for a molten salt (liquid-fueled) nonpower research reactor (MSRR) that would be located on its campus. The NRC staff completed its acceptance review of Abilene Christian University's application and docketed the application for detailed review on November 18, 2022.²⁹ The NRC staff provided Abilene Christian University with an estimated 18-month review, schedule based in part on the preapplication audit conducted for Abilene Christian University's application. The overall project status is available on the "MSRR – Abilene Christian University Project Status Dashboard."³⁰

There is additional interest in licensing new research reactors and testing facilities using advanced reactor technologies at other university sites. For example, the University of Illinois at Urbana-Champaign plans to submit a CP application for a high-temperature gas reactor testing facility by the first quarter of calendar year 2024. In the past year, the NRC staff has engaged with University of Illinois at Urbana-Champaign on reviews of one topical report and two white papers.

The NRC staff is continuing its licensing activities for light-water SMRs. In 2022, the NRC staff's efforts included issuance of the NuScale final design certification and preapplication activities for (1) the NuScale NPM20 standard design approval (including the VOYGR 12/6/4-pack modules), (2) the General Electric-Hitachi Nuclear Energy BWRX-300, and (3) SMR-160 designs from SMR, LLC (Holtec). These vendors are addressing key technical and regulatory issues that the NRC staff is reviewing through topical reports and white papers to ensure timely and efficient application reviews. Additionally, during 2022, the NRC staff identified lessons learned from both internal and external stakeholders associated with the NuScale design certification review and published these lessons in a report.³¹ The report assessed the NRC's review, identified best practices and areas for improvement, and proposed recommendations to NRR management for future new reactor design reviews.

External Coordination and Communication

The NRC staff continues to engage with the U.S. Department of Energy and U.S. Department of Defense under various memoranda of understanding associated with advanced reactor deployment. In 2022, the NRC and the Department of Energy put in place an additional addendum to the memorandum of understanding required by the Nuclear Energy Innovation Capabilities Act of 2017 (NEICA) to enable technologies for advanced fuels and fuel cycle applications. On November 8, 2022, the NRC signed a memorandum of understanding with the U.S. Department of the Army³² for support of mobile reactors. The NRC staff also continued

²⁸ ML22028A366

²⁹ ML22313A097

³⁰ See <https://www.nrc.gov/reactors/non-power/new-facility-licensing/msrr-acu/dashboard.html>

³¹ ML22088A160

³² ML22312A558

preapplication discussions with the Air Force, which has issued a request for proposals for an NRC-licensed stationary micro-reactor to produce power for Eielson Air Force Base in Alaska. In 2023, the NRC staff will continue to work cooperatively within the bounds of its statutory authority with the Department of Energy, the Fusion Industry Association, and other stakeholders to implement Commission direction for developing a framework for regulating commercial fusion energy facilities. Likewise, the NRC staff will continue to work cooperatively within the bounds of its statutory authority with counterparts at the Department of Energy and Department of Defense on projects such as Project Pele.³³ The NRC staff's work on these projects continues to yield information that supports the agency's ability to carry out its mission with respect to new, developing technologies.

Under the scope of the NRC's memorandum of cooperation with the Canadian Nuclear Safety Commission (CNSC),³⁴ the NRC staff has worked with the CNSC on several cooperative reviews, advanced reactor and SMR technical review approaches, and preapplication activities. The NRC and the CNSC continue to identify new collaborative projects under the memorandum of cooperation. In 2022, the CNSC and the NRC began a new project to review the safety classification process for structures, systems, and components used by each organization and identify key similarities and differences. In April and May 2022, respectively, the NRC and the CNSC issued joint reports that address specific technical aspects of General Electric-Hitachi's SMR BWRX-300 and Terrestrial Energy's Integral Molten Salt Reactor.³⁵ In September 2022, the NRC and the CNSC signed a charter describing their collaboration on a new project under the memorandum of cooperation covering both countries' interest in the BWRX-300 SMR design. The NRC and the CNSC developed work plans to collaborate on the reviews of advanced construction techniques, safety strategy, and fuel verification and validation for the BWRX-300.

Also in 2022, the NRC staff continued its mutually beneficial engagements with the international community on technical and regulatory issues for new technologies, participating in the SMR Regulators' Forum at the International Atomic Energy Agency and in the Working Group on the Safety of Advanced Reactors at the Nuclear Energy Agency. The NRC staff is also collaborating with the International Atomic Energy Agency on its ongoing assessment of the applicability of current safety standards to advanced reactors and novel technologies and supporting the International Atomic Energy Agency's Nuclear Harmonization and Standardization Initiative.

In order to support effective communication with the public, information on the status of the NRC's non-LWR reactor readiness activities is available on the agency's public website (<https://www.nrc.gov/reactors/new-reactors/advanced.html>). To increase visibility and clarity, the website provides an integrated schedule showing the regulatory activities within each strategy. This schedule is updated before each periodic meeting of advanced reactor stakeholders.³⁶ The website is maintained and updated regularly to increase transparency and access to information for stakeholders. The NRC staff has upgraded the agency's public website and expanded its internal knowledge management activities through Nuclepedia, SharePoint tools, and other internal communications.

Staffing and Future Plans

³³ Project Pele is a DoD program to design, build, and demonstrate a mobile nuclear microreactor.

³⁴ ML19275D578

³⁵ ML22091A201 and ML22139A124

³⁶ See <https://www.nrc.gov/reactors/new-reactors/advanced/adv-rx-integrated-schedule.pdf>

Staffing needs to support the advanced reactor program continued to grow in 2022, commensurate with the increased number of activities, and further growth will be needed for the foreseeable future. NRR's Division of Advanced Reactors and Non-Power Production and Utilization Facilities remains engaged in agency-wide hiring efforts to streamline and expedite the onboarding of qualified staff. To address near-term hiring challenges, the Division of Advanced Reactors and Non-Power Production and Utilization Facilities has employed temporary reassignments and rehired annuitants in areas of critical need and is engaged with contractors and national laboratories. These tactics, along with careful prioritization of project activities have allowed the Division of Advanced Reactors and Non-Power Production and Utilization Facilities to continue to meet aggressive milestones.

In 2023, the NRC staff will focus on many high-priority activities consistent with the integrated schedule. The staff will continue to work on the 10 CFR Part 53 rulemaking; activities associated with the emergency preparedness and physical security rulemakings, developing the regulatory framework for fusion energy systems, and other actions required by the Nuclear Energy Innovation and Modernization Act; the advanced reactor generic environmental impact statement; TICAP and ARCAP guidance; and the inspection and oversight framework. The NRC staff will continue its review of the Kairos Power Hermes and Abilene Christian University CP applications, as well as conduct preapplication engagement with Advanced Reactor Demonstration Program selectees and other developers. Other high-priority activities include guidance development and endorsement of consensus codes and standards. As part of the agency's goals of building strong partnerships, optimizing resource use, and leveraging experience, the NRC staff will continue to cooperate with the Department of Energy under several memoranda of understanding; with the Department of Defense on Project Pele; and with the CNSC, International Atomic Energy Agency, Nuclear Energy Agency, and other international counterparts.

CONCLUSION:

In 2022, the NRC staff made substantial progress towards enabling the deployment of advanced reactor technologies, completing key activities in each of the plan's six strategic areas. The NRC staff is building an agile, sustainable program for regulating advanced reactors and developing expertise and tools to prepare for advanced reactor licensing and oversight without imposing unnecessary regulatory burden. The NRC staff is well positioned to review additional non-LWR license applications and will continue to interact with prospective applicants and developers to ensure complete, high-quality, and timely license applications. The NRC staff will continue to engage proactively with stakeholders, collaborate with other Federal agencies, and pursue further opportunities to cooperate with international counterparts to fully leverage technical resources to resolve non-LWR regulatory and policy challenges.

The NRC staff will keep the Commission informed of the status of its activities, plans for potential licensing applications, and advanced reactor policy topics and will seek Commission decisions where appropriate.

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objections. The Chief Financial Officer has reviewed this package and determined that it has no financial impact.

Andrea D. Veil, Director
Office of Nuclear Reactor Regulation

Enclosures:

1. Advanced Reactor Implementation
Action Plan—Progress Summary and
Future Plans
2. Advanced Reactor Licensing
Actions—Progress Summary

SUBJECT: ADVANCED REACTOR PROGRAM STATUS DATED: MARCH 1, 2023

SRM-M170511-4

ADAMS Accession Nos.:
ML22353A284 Package
ML22353A198 SECY
ML22353A274 Enclosure 1
ML22353A279 Enclosure 2

SECY-012

OFFICE	NRR/DANU/UARP	NRR/DANU/UARP	NRR/DANU/UARP	QTE
NAME	OFont	ACubbage	SLynch	JDougherty
DATE	12/21/2022	1/5/2023	1/19/2023	12/22/2022
OFFICE	NRR/DANU/UAL1	NRR/DANU/UAL2	NRR/DANU/UTB1	NRR/DANU/UTB2
NAME	WJessup	MWentzel	MHayes	SPhilpott
DATE	1/11/2023	1/9/2023	1/10/2023	1/11/2023
OFFICE	NRR/DANU	OCFO/DOB	OGC	NRR/DANU
NAME	JSegala	RAllwein	SVrahoretis	MShams
DATE	1/11/2023	1/3/2023	12/28/2023	12/28/2023
OFFICE	NRR			
NAME	AVeil (RTaylor for)			
DATE	03/01/23			

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