



Protecting People and the Environment

SEMIANNUAL STATUS REPORT ON THE LICENSING
ACTIVITIES AND REGULATORY DUTIES OF THE
U.S. NUCLEAR REGULATORY COMMISSION

April 2022–September 2022

Note: The period of performance covered by this report includes activities that occurred from the first day of April 2022 to the last day of September 2022. The transmittal letter to Congress accompanying this report provides additional information to keep Congress fully informed of the current licensing and regulatory activities of the U.S. Nuclear Regulatory Commission.

Enclosure

CONTENTS

I.	Reactor Oversight Process	1
II.	Implementing Risk-Informed and Performance-Based Regulations.....	1
III.	Status of Issues Tracked in the Reactor Generic Issues Program	3
IV.	Licensing Actions and Other Licensing Tasks	4
V.	Status of License Renewal Activities	5
VI.	Summary of Reactor Enforcement Actions	6
VII.	Security and Emergency Preparedness and Incident Response Activities	11
VIII.	Power Uprates.....	13
IX.	New Reactor Licensing.....	13
X.	Planned Rulemaking Activities	22

I. Reactor Oversight Process

The U.S. Nuclear Regulatory Commission (NRC) uses the Reactor Oversight Process (ROP) to assess the performance of operating power reactor licensees and to determine the most effective use of inspection resources. Using inputs from both agency self-assessments and independent evaluations, the NRC adjusts the ROP on an ongoing basis to enhance its effectiveness and efficiency. The NRC staff meets with interested stakeholders periodically to collect feedback on the effectiveness of the process and considers this feedback when making improvements to the ROP.

The agency's most recent performance assessments indicate that all operating power reactor plants continue to operate safely. The NRC staff conducts assessment reviews, communicates changes in licensee performance quarterly, and issues end-of-cycle assessment letters. The NRC issued annual assessment letters to licensees in March 2022. The NRC website reflects the latest power reactor plant performance assessments.

The NRC staff continues to implement the baseline inspection program and initial operator licensing examinations, while taking precautions recommended by the Centers for Disease Control and Prevention (CDC) to minimize exposure to Coronavirus Disease 2019 (COVID-19). The guidance issued by the Office of Nuclear Reactor Regulation on implementation of inspection programs following re-entry from the public health emergency on November 2, 2021 (Agencywide Documents Access and Management System Accession No. [ML21295A302](#)), remains in effect. The staff is on track to complete the baseline inspection program for Calendar Year (CY) 2022, having 85 percent of minimum inspection samples complete as of September 30, 2022, with the goal of completing the nominal inspection sample sizes at all units.

The ROP is a risk-informed, performance-based oversight program that contains provisions for continuous self-assessment and improvement. The NRC staff developed recommendations for proposed changes to the ROP in SECY-18-0113, "Recommendations for Modifying the Reactor Oversight Process Engineering Inspections" ([ML18144A567](#)), and SECY-19-0067, "Recommendations for Enhancing the Reactor Oversight Process" ([ML19070A050](#)). The staff requested to withdraw these papers, and on August 5, 2021, the Commission approved the staff's proposed withdrawal ([ML21217A284](#)). The staff spent this reporting period revisiting the recommendations in these withdrawn papers. The Engineering Inspection SECY was resubmitted as SECY-22-0053 ([ML22060A085](#)), and the recommendations to change the periodicity of engineering inspections from a 3-year cycle to a 4-year cycle were unanimously approved by the Commission in July 2022.

The staff resubmitted recommended changes to the treatment of greater-than-green inspection findings and Performance Indicators, both of which are inputs to the ROP Action Matrix used to assess licensee performance, in SECY-22-0086 ([ML22188A221](#)). Additionally, the staff resubmitted options to the Commission for the frequency of the Problem Identification and Resolution (PI&R) team inspection in SECY-22-0087 ([ML22145A448](#)). In SECY-19-0067, the staff recommended changing the frequency of this inspection from biennial to triennial. After considering the recommendations from the comprehensive review of the PI&R inspection conducted in CY 2020, the staff has revised its recommendation to keep the inspection at a biennial frequency. To better risk inform the Significance Determination Process (SDP), the staff also submitted, in SECY-22-0089 ([ML22189A201](#)), a recommendation to revise the Emergency

Preparedness (EP) SDP. The staff recommended that inspection findings affecting only those planning standards that have a direct impact on public health and safety or on implementation of the emergency plan can have a significance greater-than-green. These papers are currently with the Commission for its consideration.

On July 28, 2022, the NRC completed a follow-on review of the lessons learned, best practices, and challenges during the COVID-19 public health emergency ([ML22172A159](#)). The follow-on review identified multiple recommendations for NRC management consideration for enhancement of the ROP and baseline inspection program. NRC management is currently evaluating the recommendations for prioritization and implementation.

II. Implementing Risk-Informed and Performance-Based Regulations

In 1995, the NRC issued the Probabilistic Risk Assessment (PRA) Policy Statement in the *Federal Register* (FR) ([60 FR 42622](#)), which formalized the Commission's commitment to risk-informed regulation through the expanded use of PRA. The use of PRA in regulatory decision-making and licensing activities for U.S. light-water reactors (LWRs) has increased in recent years, and licensees continue to adopt many risk-informed initiatives. PRAs provide licensees with risk insights that allow increased flexibility in plant operations. They also enable both licensees and the NRC to better identify and focus on more safety-significant issues. The NRC staff continues to work with industry to support risk-informed and performance-based initiatives.

The industry has communicated plans to continue to submit applications for adoption of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.69, "Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors." This would allow licensees to establish a more risk-informed program for the treatment of structures, systems, and components. In 2014, the NRC approved the pilot application of 10 CFR 50.69 for Vogtle Electric Generating Plant. Since completion of the pilot, the industry has submitted 32 applications to adopt 10 CFR 50.69. The NRC staff has reviewed and approved 30 applications and is currently reviewing the remaining 2 applications. The NRC anticipates completing the review of the 2 remaining applications by the end of CY 2022.

The industry also continues to communicate plans to submit applications to adopt the Risk-Informed Technical Specifications (RITS) Initiative 4b. This initiative allows licensees to temporarily extend certain technical specification completion times up to 30 days, based on plant configuration and a real-time risk calculation. This approach maintains and improves safety through the incorporation of risk assessment and management techniques into a plant's technical specifications, while reducing unnecessary regulatory burden. To date, the industry has submitted 28 applications to adopt RITS Initiative 4b. The NRC staff has reviewed and approved 22 applications, is currently reviewing the remaining 6 applications, and anticipates receiving an additional 3 applications by the end of CY 2022. The NRC anticipates completing 2 of the 6 current applications by the end of CY 2022.

On August 18, 2022, the NRC approved the final application (VC Summer) to adopt the RITS Initiative 5b. This initiative allows licensees to control selected Surveillance Requirement frequencies using a risk-informed program. All currently operating reactors are now approved to have such a program.

Following the March 2011 accident at the Fukushima Daiichi nuclear power plant in Japan, the NRC issued orders (now codified in 10 CFR 50.155, "Mitigation of beyond-design-basis events,") to require enhanced mitigation strategies for maintaining or restoring core cooling,

containment, and spent fuel pool cooling capabilities in the event of a beyond-design-basis external event. While initially designed to address extreme external events, those strategies (referred to as FLEX) could be effective in mitigating other risks, such as those which could be experienced during complex refueling outage operations. The NRC staff continues to interact with industry on ways that FLEX could be used in such applications including on topics such as FLEX operating experience, the expanded use of FLEX to support plant operations, modeling FLEX in PRAs, and crediting of FLEX equipment in NRC licensing and oversight activities. The industry has indicated that it plans to incorporate lessons learned associated with the treatment of FLEX in licensing and oversight into appropriate guidance documents. By letter dated May 6, 2022 ([ML22014A084](#)), the NRC staff updated its assessment of industry guidance for crediting FLEX in PRAs used to support risk-informed applications.

In June 2020, the NRC staff issued enhanced guidance associated with the use of risk insights in the review of licensing actions, "Integrated Risk-Informed Decision-Making for Licensing Reviews" ([ML19263A645](#)). It provides enhanced tools and guidance to all technical reviewers for identifying and leveraging risk-insights, and using risk-informed decision-making (RIDM) and integrated review teams (IRTs) in their work. On August 10, 2022, the staff hosted a risk forum to highlight the progress that staff have made in implementing RIDM and IRTs via discussion of successful case studies and to gather feedback from the staff through moderated open discussions. The forum was widely attended and was successful in showcasing several actual NRC examples in implementing RIDM and IRTs to enhance decision-making and increase cross-disciplinary collaboration. In short, this forum provided actionable suggestions to the staff to promote and support the expanded use of RIDM and IRTs in our licensing work.

The Very Low Safety Significance Issue Resolution (VLSSIR) process, implemented in January 2020, is a framework to review, assess, and disposition issues of very low safety significance that are not clearly within a plant's licensing basis. This is discussed in "Results of a Calendar Year 2020 Reactor Oversight Process Self-Assessment Effectiveness Review of the Very Low Safety Significance Issue Resolution Process," dated March 2, 2021 ([ML21070A334](#)), which documented the results of the CY 2020 VLSSIR self-assessment effectiveness review. The process is used regularly and has resulted in the closure of three potential issues in CY 2022. In August 2022, the VLSSIR process was revised to include potential issues that would screen to Traditional Enforcement.

As part of the VLSSIR initiative, the NRC also developed the Risk-Informed Process for Evaluations (RIPE) to resolve very low safety significance compliance issues commensurate with their risk significance using existing regulations under 10 CFR 50.12, "Specific exemptions," or 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," and risk information. RIPE guidance was approved for use on January 7, 2021 ([ML21006A324](#)). If a licensee elects to use RIPE to resolve a non-compliance issue, it would characterize the risk associated with the proposed exemption or amendment and submit a request to the NRC for approval. If the conditions described in the RIPE guidance are met, then the NRC would apply a streamlined process to review the request. To utilize RIPE, a licensee must demonstrate that it has a robust process for assessing risk of the plant and evaluating the other key RIDM principles of defense-in-depth and safety margins. Licensees can use RIPE to justify plant-specific licensing requests. RIPE was expanded on June 30, 2021, to allow licensees with additional approved risk-informed initiatives to use the process ([ML21180A011](#)). RIPE was further expanded on May 10, 2022 ([ML22088A140](#)), to allow licensees to use the process for license amendment requests involving changes to the technical specifications.

On July 22, 2022, the NRC staff issued a memorandum entitled, “High Energy Arcing Faults [HEAF] LIC-504 Team Recommendations.” This memorandum presents detailed analyses and recommendations for management’s consideration regarding the need of any potential follow-up actions by NRC staff. The staff concluded that there is no significant increase in total HEAF risk warranting the need for any additional regulatory requirements. In addition, the staff evaluated various communication options that would enable the staff to share its insights with external stakeholders for consideration of effective steps to further reduce and/or mitigate HEAF risks. Additional details can be found in the memorandum and its associated enclosures ([ML22200A272](#)).

III. Status of Issues Tracked in the Reactor Generic Issues Program

Emergency Diesel Generator Protective Trips Being Bypassed During LOOP Conditions

On February 7, 2022, an NRC staff member submitted a concern related to the bypass of mechanical and electrical protective trip functions during loss of offsite power (LOOP) conditions for emergency diesel generators at nuclear power plants ([ML22048B595](#)). In accordance with the Generic Issues (GI) Program, the staff completed a screening evaluation and determined that it did not pass the screening criteria for GI. Specifically, the increase in risk from the scenarios described in the submittal fell below the threshold necessary to continue in the GI process. Since the proposed issue did not meet all the screening criteria, the issue was closed on July 13, 2022 ([ML22109A038](#)).

Additional detail of the staff’s evaluation may be found on the Generic Issues Dashboard: <https://www.nrc.gov/about-nrc/regulatory/gen-issues/dashboard.html#genericIssue/genericIssueDetails/48>

IV. Licensing Actions and Other Licensing Tasks

Licensing actions related to operating power reactors include orders, license amendments, exemptions from regulations, relief from inspection or component testing, topical reports submitted on a plant-specific basis, or other actions requiring NRC review and approval before licensees can carry out certain activities. Other licensing tasks for operating power reactors include licensees’ responses to NRC requests for information through generic letters or bulletins, NRC review of generic topical reports, and other licensee actions or reports that do not require NRC review and approval before licensees can carry them out.

For fiscal year (FY) 2022, the indicators related to the age of the inventory of licensing actions and the age of the inventory of other licensing tasks were discontinued, but the indicator for timely completion of final safety evaluations by the generic milestone date introduced in FY 2021 was retained. In FY 2022, two new performance indicators were also added, specifically the percentage of reviews completed within resource estimates and the average percentage of time allotted used in the established schedule. These performance indicators are applicable to all “requested activities of the Commission,” as defined by the Nuclear Energy Innovation and Modernization Act (NEIMA) in the Operating Reactor Business Line that involve a final safety evaluation.

Table 1 shows the actual FY 2019 through FY 2022 results to date and the FY 2022 goal for the above-mentioned performance indicators.

The agency continues to communicate with licensees about planned licensing submittals. The NRC’s senior management remains fully engaged in monitoring the licensing action workload to maintain both the staff’s safety focus and target performance goals.

**Table 1 Results and FY 2022 Goals for the NRC’s Congressional Budget
Justification Performance Indicators**

Output Measure	FY 2019 Actual	FY 2020 Actual	FY 2021 Actual	FY 2022 Current	FY 2022 Goal
Licensing Actions	847	Discontinued	Not Applicable	Not Applicable	Not Applicable
Age of inventory of licensing actions	95% ≤1 year 100% ≤2 year	99% ≤1 year 100% ≤2 year	100% ≤2 year	Discontinued	Discontinued
Other licensing tasks completed per year	337	Discontinued	Not Applicable	Not Applicable	Not Applicable
Age of inventory of other licensing tasks	98% ≤1 year 100% ≤2 year	96% ≤1 year 100% ≤2 year	97% ≤2 year	Discontinued	Discontinued
Timely completion of final safety evaluations	Not Applicable	Not Applicable	100% ≤24 months	99% ≤24 months ¹	100% ≤24 months
Average Percentage of Time Allotted Used in the Established Schedule	Not Applicable	Not Applicable	Not Applicable	81.75%	≤115% or ≥75%
Percentage of Reviews Completed within Resource Estimates	Not Applicable	Not Applicable	Not Applicable	97.3%	80%

During this reporting period, the NRC staff did not receive any licensing requests for power or non-power reactors related to the COVID-19 pandemic. As the pandemic evolves, and new and continuing challenges to NRC-licensed activities emerge, the NRC will continue to closely monitor the nuclear power industry to provide reasonable assurance of adequate protection of public health and safety. The NRC continues to evaluate and document lessons learned to identify long-term improvements to oversight and licensing programs.

V. Status of License Renewal Activities

The staff did not receive any initial license renewal applications during this reporting period.

¹ To date in FY 2022, one final safety evaluation was not issued within the NRC’s established generic milestone schedule due to a delay in the applicant’s response to NRC’s request for additional information.

On February 22, 2022, the Commission issued orders CLI-22-02, CLI-22-03, and CLI-22-04 ([ML22055A496](#), [ML22055A533](#), [ML22055A557](#), respectively) regarding the agency's National Environmental Policy Act review of subsequent license renewal (SLR) applications. Also on February 22, 2022, the Commission issued a Staff Requirements Memorandum (SRM) to SECY-21-0066, "Rulemaking Plan for Renewing Nuclear Power Plant Operating Licenses – Environmental Review" ([ML22053A308](#)), directing the staff to develop a rulemaking plan that aligns with the Commission orders. In the SRM, the Commission directed the staff to develop two new rulemaking plans: (1) to fully evaluate the environmental impacts of reactor SLR in NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants" (GEIS), within 30 days; and (2) address the 10-year License Renewal GEIS review cycle within 60 days, respectively.

On March 25, 2022, the staff provided to the Commission for its consideration SECY-22-0024, "Rulemaking Plan for Renewing Nuclear Power Plant Operating Licenses – Environmental Review" ([ML22062B592](#)), which recommended that a dedicated team of staff complete the rulemaking within two years. This proposed rule would remove the word "initial" from 10 CFR 51.53(c)(3), "Postconstruction and environmental reports," and revise the License Renewal GEIS, Table B–1, and associated guidance to apply to at least one 20-year term of SLR. On April 5, 2022, the Commission issued SRM-SECY-22-0024, which approved the staff's recommendations, and directed the staff to continue to seek opportunities to accelerate the schedule, working as efficiently as possible while still maintaining the integrity of the review ([ML22096A035](#)).

By letter dated June 9, 2022 ([ML22160A301](#)), Florida Power & Light Company submitted an Environmental Report, Supplement 2, related to its 2018 application ([ML18037A812](#)) for SLR of Renewed Facility Operating License Nos. DPR-31 and DPR-41 for the Turkey Point Nuclear Generating Station, Unit Nos. 3 and 4. This site-specific Environmental Report is currently under NRC staff review.

VI. Summary of Reactor Enforcement Actions

The reactor enforcement statistics in the tables below are arranged by region, half FY, FY, and two previous FYs for comparison purposes. These tables provide the non-escalated and escalated reactor enforcement data, as well as the escalated enforcement data associated with traditional enforcement and the ROP. The severity level assigned to a violation (i.e., traditional enforcement) generally reflects the significance of a violation. However, for most violations, the significance is assessed using the SDP under the ROP, which uses risk insights, as appropriate, to assist the NRC in determining the safety or security significance of inspection findings identified within the ROP.

Brief descriptions of the escalated reactor enforcement actions associated with traditional enforcement and the ROP (as well as any other significant actions) taken during the applicable fiscal half-year follow the tables.

Table 2 Non-escalated Reactor Enforcement Actions*

NON-ESCALATED REACTOR ENFORCEMENT ACTIONS						
		Region I	Region II	Region III	Region IV	TOTAL
Cited Severity Level IV or Green	1 st Half FY 22	0	3	0	2	5
	2 nd Half FY 22	0	5	0	0	5
	FY 22 Total	0	8	0	2	10
	FY 21 Total	0	6	0	4	10
	FY 20 Total	2	4	0	1	7
Non-cited Severity Level IV or Green	1 st Half FY 22	46	24	34	36	140
	2 nd Half FY 22	34	57	35	72	198
	FY 22 Total	80	81	69	108	338
	FY 21 Total	48	53	39	78	218
	FY 20 Total	52	46	62	108	268
TOTAL Cited and Non-cited Severity Level IV or Green	1 st Half FY 22	46	27	34	38	145
	2 nd Half FY 22	34	62	35	72	203
	FY 22 Total	80	89	69	110	348
	FY 21 Total	48	59	39	82	228
	FY 20 Total	54	50	62	109	275

* The non-escalated enforcement data reflect the cited and non-cited violations either categorized at Severity Level IV (the lowest level) or associated with Green findings during the indicated time periods. The numbers of cited violations are based on Enforcement Action Tracking System data that may be subject to minor changes following verification. These data do not include Green findings that do not have associated violations.

Table 3 Escalated Reactor Enforcement Actions Associated with Traditional Enforcement*

ESCALATED REACTOR ENFORCEMENT ACTIONS ASSOCIATED WITH TRADITIONAL ENFORCEMENT						
		Region I	Region II	Region	Region IV	TOTAL
Severity Level I	1 st Half FY 22	0	0	0	0	0
	2 nd Half FY 22	0	0	0	0	0
	FY 22 Total	0	0	0	0	0
	FY 21 Total	0	0	0	0	0
	FY 20 Total	0	2	0	0	2
Severity Level II	1 st Half FY 22	0	0	0	0	0
	2 nd Half FY 22	0	0	0	0	0
	FY 22 Total	0	0	0	0	0
	FY 21 Total	0	1	0	0	1
	FY 20 Total	0	2	0	0	2
Severity Level III	1 st Half FY 22	0	1	0	1	2
	2 nd Half FY 22	0	0	0	0	0
	FY 22 Total	0	1	0	1	2
	FY 21 Total	0	4	0	4	8
	FY 20 Total	0	1	0	1	2
TOTAL Violations Cited at Severity Level I, II, or III	1 st Half FY 22	0	1	0	1	2
	2 nd Half FY 22	0	0	0	0	0
	FY 22 Total	0	1	0	1	2
	FY 21 Total	0	5	0	4	9
	FY 20 Total	0	5	0	1	6

* The escalated enforcement data reflect the Severity Level I, II, or III violations or problems cited during the indicated time periods.

Table 4 Escalated Reactor Enforcement Actions Associated with the Reactor Oversight Process*

ESCALATED REACTOR ENFORCEMENT ACTIONS ASSOCIATED WITH THE REACTOR OVERSIGHT PROCESS						
		Region I	Region II	Region III	Region IV	TOTAL
Violations Related to Red Findings	1 st Half FY 22	0	0	0	0	0
	2 nd Half FY 22	0	0	0	0	0
	FY 22 Total	0	0	0	0	0
	FY 21 Total	0	0	0	0	0
	FY 20 Total	0	0	0	0	0
Violations Related to Yellow Findings	1 st Half FY 22	0	0	0	0	0
	2 nd Half FY 22	0	0	0	0	0
	FY 22 Total	0	0	0	0	0
	FY 21 Total	0	0	0	0	0
	FY 20 Total	0	0	0	0	0
Violations Related to White Findings	1 st Half FY 22	0	2	1	0	3
	2 nd Half FY 22	0	0	0	1	1
	FY 22 Total	0	2	1	1	4
	FY 21 Total	1	0	0	0	1
	FY 20 Total	0	2	0	0	2
TOTAL Related to Red, Yellow, or White Findings	1 st Half FY 22	0	2	1	0	3
	2 nd Half FY 22	0	0	0	1	1
	FY 22 Total	0	2	1	1	4
	FY 21 Total	1	0	0	0	1
	FY 20 Total	0	2	0	0	2

* The escalated enforcement data reflect the violations or problems cited during the indicated time periods that were associated with either Red, Yellow, or White findings. These data do not include Red, Yellow, or White findings that do not have associated violations and may not reflect security violations, which are considered official use only.

Reactor Escalated Enforcement Actions and Other Significant Actions

Entergy Operations, Inc. (Waterford Steam Electric Station) EA-22-033)

On September 12, 2022, the NRC issued a notice of violation associated with a white SDP finding to Entergy Operations, Inc. (licensee) at the Waterford Steam Electric Station, Unit 3. The white finding, an issue of low-to-moderate safety significance, involved calibration errors associated with the main condenser wide range gas monitor; accordingly, the licensee failed to

maintain the effectiveness of an emergency plan that met the requirements in 10 CFR Part 50, Appendix E, “Emergency planning and preparedness for production and utilization facilities,” and the planning standards of 10 CFR 50.47(b), “Emergency plans,” as required by 10 CFR 50.54(q)(2), “Conditions of licenses.”

National Institute of Standards and Technology Center for Neutron Research (EA-21-148)

On August 1, 2022, the NRC issued a confirmatory order (CO) to National Institute of Standards and Technology, Center for Neutron Research (licensee) confirming commitments reached as part of an alternative dispute resolution (ADR) mediation settlement agreement between the licensee and the NRC. The ADR mediation and subsequent CO were based on the results of a special inspection in which the NRC identified one apparent violation of 10 CFR 50.59, “Changes, tests, and experiments,” and six apparent violations of the licensee’s technical specification requirements. The apparent violations involved the exceedance of reactor fuel cladding temperature which resulted in a damaged fuel element. Additionally, the licensee agreed to complete wide-ranging corrective actions and enhancements that are expected to improve reactor safety, as fully described in the CO. In consideration of the corrective actions and commitments outlined in the CO, the NRC agreed not to pursue any further enforcement action associated with the violations. The issuance of this CO is considered escalated enforcement consistent with the NRC Enforcement Policy, but is not included in the data in the above tables.

VII. Security and Emergency Preparedness and Incident Response Activities

The NRC continues to maintain an appropriate regulatory infrastructure to provide reasonable assurance of adequate protection of public health and safety and to promote the common defense and security while implementing risk-informed strategies and improving the realism of NRC licensing and oversight activities. The NRC’s security and EP and incident response programs contribute to these goals.

Physical Security

Under normal circumstances, the NRC conducts force-on-force (FOF) inspections at each nuclear power reactor and Category I fuel cycle facility on a regular 3-year cycle. Each FOF inspection includes both tabletop drills and exercises that simulate combat between a mock adversary force and the licensee’s security force. These inspections assess the ability of power reactor and Category I fuel cycle facility licensees to defend against the design basis threat (DBT) for radiological sabotage. For Category I fuel cycle facilities, the NRC uses FOF inspections to evaluate the effectiveness of licensees’ protective strategies against an additional DBT of theft or diversion of special nuclear material. FOF inspections, along with the other inspections that comprise the NRC’s security baseline inspection program, provide valuable insights that enable the NRC to evaluate the effectiveness of licensees’ security programs.

Due to the health and safety concerns related to conducting full FOF exercises during the COVID-19 pandemic, the NRC developed Inspection Procedure (IP) 92707, “Security Inspection of Facilities Impacted by a Local, State, or Federal Emergency Where the NRC’s Ability to Conduct Triennial Force-on-Force Exercises is Limited” (ML21019A452).² The NRC implemented this IP during CY 2020 to allow the conduct of limited-scope inspections of operating reactor licensees during the special circumstances associated with the pandemic.

² This document is not publicly available.

For CY 2021, the NRC developed another option that modified the pre-pandemic FOF procedure to minimize COVID-19 exposure by adding interim guidance to IP 71130.03, “Contingency Response – Force-on-Force Testing” (ML21012A329).³ This interim guidance has been in use since its issuance on February 8, 2021. This interim guidance places an emphasis on safety protocols related to COVID-19 mitigation measures and involves only the minimum resources for both the licensee and the NRC in conducting the inspection activity. Building on the information gained from the implementation of IP 92707 in CY 2020, the staff revised IP 92707 to add elements that allow the inspection to satisfy the contingency response attributes of the baseline inspection program. The NRC developed temporary staff guidance (TSG), TSG-NSIR-2021-01, “Additional Guidance for Force-on-Force Inspections During the Public Health Emergency,” issued on February 26, 2021 ([ML21043A259](#)), to provide a consistent methodology to evaluate hardship conditions associated with COVID-19 at licensee sites. NRC staff used the TSG to approve four hardship requests for IP 92707 inspections in July and August 2021 because of surges in COVID-19 infection rates.

Starting in CY 2022, the NRC staff reimplemented the full IP 71130.03, “Contingency Response – Force-on-Force Testing,” for licensees that are not experiencing adverse COVID conditions and can safely conduct full FOF exercises. The staff continues to maintain the CY 2021 interim guidance in IP 71130.03 and IP 92707 as tiered measures for FOF inspections if the licensee’s on-site COVID conditions prevent the conduct of full FOF exercises.

Cybersecurity

Under 10 CFR 73.54, “Protection of digital computer and communication systems and networks,” the NRC requires nuclear power plant licensees and new license applicants to provide high assurance that digital computer and communication systems and networks are adequately protected against cyberattacks. These licensees must implement a cybersecurity program to ensure that safety, security, and EP functions are protected from cyberattacks. In conjunction, the NRC has developed an oversight program for power reactor cybersecurity that includes an inspection program, inspector training, and a process for evaluating the significance of inspection findings.

In June 2021, the agency completed the cybersecurity program’s full implementation inspections of all operating nuclear power plant licensees (63 sites). The inspections verified that the facilities had fully implemented their cybersecurity requirements. In February 2022, the staff began inspecting licensees’ maintenance of their implemented cybersecurity programs as part of the ROP using IP 71130.10, “Cybersecurity” ([ML21271A106](#)), to ensure continued compliance. From April 2022 to September 2022, the staff completed 13 cybersecurity inspections.

In May 2022, the agency approved for use two revisions to industry guidance documents that support implementation of licensee cybersecurity programs. The documents were Nuclear Energy Institute (NEI) 10-04, “Identifying Systems and Assets Subject to the Cyber Security Rule,” Revision 3 ([ML21342A168](#)), which provides licensees with guidance on identifying critical digital assets that require cybersecurity protections and NEI 13-10, “Cyber Security Control Assessments,” Revision 7 ([ML21342A203](#)), which provides guidance on applying appropriate cybersecurity controls and protections to critical digital assets.

³ This document is not publicly available.

Emergency Preparedness and Incident Response

As discussed further in Section X of this report, on May 12, 2020, the NRC staff published for public comment a proposed rule and draft regulatory guidance on EP for small modular reactors and other new technologies ([92 FR 28436](#)). The NRC staff then provided the draft final rule to the Commission for its consideration on January 3, 2022 ([ML21200A055](#)).

From April 2022 to September 2022, the NRC staff did not receive any exemption requests to defer onsite and/or offsite biennial EP exercises due to the COVID-19 pandemic.

The NRC staff continues to review proposed licensing submittals to implement enhancements to emergency response organization (ERO) staffing and response/augmentation times in Revision 2 to NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." As a result, on May 6, 2022, the NRC staff issued a license amendment to the Beaver Valley Power Station, Units Nos. 1 and 2 ([ML21286A782](#)) to revise the Beaver Valley EP Plan to reduce the number of on-shift staff positions, extend augmented ERO response times, and re-align augmented ERO response positions.

On May 18, 2022, the NRC staff issued a license amendment to the Wolf Creek Generating Station, Unit 1 ([ML22069A056](#)) to revise its Radiological Emergency Response Plan to change the on-shift staffing composition. On September 22, 2022, the NRC staff submitted SECY-22-0090, "Duke Energy Request to Relocate the Emergency Operations Facility" ([ML22265A133](#)), to request Commission approval of a license amendment request to relocate the common emergency operations facility to greater than 25 miles for 5 of the 6 Duke Energy operating nuclear sites. All licensing reviews for power reactor, non-power production or utilization facility, new power reactor, spent fuel, or fuel facility under the physical security and EP program remain on schedule. The NRC staff is using its established licensing process to ensure that the safety and environmental reviews meet all milestones and provide opportunities for stakeholder input.

On June 1, 2022, the NRC staff completed its annual review of the NRC's continuity of operations program. The updates and related ongoing planning efforts ensure that NRC emergency plans remain up to date, and that the NRC continues to be prepared to respond to a wide variety of potential emergency situations including impacts of the COVID-19 public health emergency.

In August 2022, the NRC staff began a once-a-decade project to review all nuclear power reactor licensees' evacuation time estimates (ETE). Following the decennial census data release and in accordance with 10 CFR Part 50, Appendix E.IV, "Content of Emergency Plans," plants must review and evaluate how long it would take to evacuate the total population (permanent, transit dependent, and transient) within the ten-mile emergency planning zone, given different times of day and weather patterns throughout a year. The ETE is primarily used to inform protective action decision-making and may also be used to assist in the development of traffic management plans to support an evacuation.

On September 6, 2022, the NRC staff submitted SECY-22-0083, “PRM 50-123: Petition for Rulemaking Plan on Public Protective Actions During a General Emergency” ([ML22031A179](#)), to the Commission, which recommended initiating the rulemaking process in response to a petition for rulemaking (PRM). In PRM-50-123, the petitioner requested that the NRC revise its regulations such that protective actions will do “more good than harm” when considering radiological health effects versus non-radiological health effects from the actions taken.

VIII. Power Upgrades

Since the 1970s, licensees have applied for and implemented power upgrades to increase the output of their plants. The NRC staff has reviewed and approved 170 power upgrades to date. Existing plants have gained approximately 24,089 megawatts thermal or 8,030 megawatts electric in electric generating capacity (the equivalent of about eight large nuclear power plant units) through power upgrades. The NRC currently has no power upgrade applications under review.

IX. New Reactor Licensing

The NRC’s new reactor program is: (1) focusing on licensing and construction oversight activities for large LWRs and small modular LWRs and (2) continuing to develop the specific regulatory framework and infrastructure for advanced reactors (non-LWRs). In addition, the NRC is actively engaged in several new and existing international cooperative initiatives to improve the international collaboration efforts associated with safety reviews of new reactor designs, and to share construction experience.

Design Certification Reviews

NuScale Power, LLC, Small Modular Reactor Design Certification Application

The NRC staff completed the final Safety Evaluation Report on August 28, 2020 ([ML20023A318](#)), and issued a standard design approval to NuScale Power, LLC, on September 11, 2020 ([ML20247J564](#)). On July 1, 2022, the NRC staff submitted SECY-2022-0062, “Final Rule: NuScale Small Modular Reactor Design Certification (RIN 3150-AJ98; NRC-2017-0029),” for Commission consideration to amend 10 CFR Part 52, “Licenses, Certifications, and Approvals for Nuclear Power Plants,” to certify the 50 MWe (megawatts electric, gross, per module) NuScale standard design ([ML22004A002](#)). On July 29, 2022, the Commission directed the staff to issue a final rule that certifies NuScale’s small modular reactor design for use in the United States ([ML22210A158](#)). The certification’s effective date is 30 days after the NRC publishes the rule in the FR, which is currently scheduled for November 25, 2022.

Additionally, for NuScale, the NRC staff is currently engaged in pre-application activities for the NuScale standard design approval application (SDAA) under 10 CFR Part 52, Subpart E, “Standard Design Approvals.” The proposed 77 MWe nuclear power module is the up-rated version of the 50 MWe NuScale design, with additional design changes. The staff is currently reviewing five topical reports, four for the SDAA and one generic topical report. NuScale plans to submit the SDAA in December 2022.

The NRC staff expects a Combined License application to be submitted in January 2024 that will utilize the SDAA design in a proposed construction project for a NuScale plant at a proposed site at the Idaho National Lab under the control/ownership of the Carbon Free Power

Project, LLC (CFPP). CFPP is a subsidiary of Utah Associated Municipal Power Systems (UAMPS). Currently, the NRC staff and the CFPP/UAMPS/NuScale team are conducting public pre-application engagements on various technical subjects such as the quality assurance program, volcanic hazard assessment, limited work authorization, emergency planning, and physical security.

Construction Oversight under 10 CFR Part 52

On August 3, 2022, the NRC issued the 10 CFR 52.103(g), “Operation under a combined license,” finding for Vogtle Unit 3 ([ML20290A282](#)). This was the first such finding for a Part 52 licensee. It allows the Southern Nuclear Corporation (SNC) to load fuel and operate Vogtle Unit 3 in accordance with the terms and conditions of the combined license. The NRC issued the finding after verifying that all the acceptance criteria in the inspections, tests, analyses, and acceptance criteria (ITAAC) were met. The NRC describes the basis for this finding in the 10 CFR 52.103(g) basis document ([ML20290A276](#)). Upon the issuance of this finding, NRC’s oversight of Vogtle Unit 3 transitioned from the Construction Reactor Oversight Process (cROP) to the ROP. The NRC placed Vogtle Unit 3 in the Licensee Response Column of the ROP’s Action Matrix. For Vogtle Unit 4, the NRC continues to perform ITAAC inspections and review ITAAC closure notifications.

As a result of the dynamic nature of the Vogtle construction project, the licensee now projects Vogtle Unit 3 commercial operations to start in Quarter (Q) 1 FY 2023 and Unit 4 in Q4 FY 2023. The NRC staff adjusted the agency’s activities and associated milestone dates to reflect the revised schedule. The NRC staff continues to engage in construction oversight and licensing activities, and the revised target schedule has not impacted the agency’s ability to conduct timely inspections and licensing reviews.

Until Vogtle Unit 4 achieves commercial operation, the NRC’s Vogtle Readiness Group (VRG) plans to meet regularly to assess NRC activities and proactively identify any regulatory challenges that may impact the schedule for completion of construction activities. VRG meetings ensure that all NRC organizations are coordinating on issues related to the new units at Vogtle, that NRC senior management is aware of any significant issues, and that there are consistent communications with the licensee’s management.

The NRC performs construction oversight at Vogtle 4 within the regulatory framework of the cROP. The cROP ensures safety and security through objective, risk-informed, transparent, and predictable NRC oversight during new reactor construction. Plant assessments and the latest cROP information are publicly available on the NRC’s website at <https://www.nrc.gov/reactors/new-reactors/oversight/crop.html>.

During the reporting period, the staff completed the following related to licensing and construction activities at Vogtle Units 3 and 4:

- The NRC approved a code alternative request several months ahead of schedule. This approval allowed the licensee to use the same edition of the American Society of Mechanical Engineers Code for the initial in-service testing interval for both Vogtle Units ([ML22118A072](#)).
- The NRC staff completed an internal high-priority technical assistance request related to the cable separation ITAAC for Vogtle, Unit 3, in five working days.

- The NRC staff implemented the first of a kind late filed allegations process for Vogtle Unit 3, prior to NRC issuance of the 10 CFR 52.103(g) finding. This process expedited administrative processing to ensure that the staff could resolve any concerns that potentially impacted ITAAC on Unit 3.
- The NRC held a public meeting on lessons learned related to 10 CFR Part 52 construction. The working group is identifying best practices and lessons learned that can be applied to construction of new facilities, including small modular reactors and advanced reactor technologies.

Further, the NRC staff supported training on oversight of the AP1000 technology for a group of foreign assignees from the Polish regulatory agency. A second group from the Polish regulatory agency is scheduled to visit NRC staff from September to November 2022.

Vendor Inspections

The NRC staff uses the Vendor Inspection Program to confirm that reactor applicants and licensees are fulfilling their regulatory obligations to oversee the supply chain. The NRC staff conducts inspections to verify the implementation of vendor quality assurance programs to ensure the quality of materials, equipment, and services supplied to the commercial nuclear industry. These inspections ensure that vendors maintain an effective system for reporting defects under 10 CFR Part 21, "Reporting of defects and noncompliance," and verify the use of commercial-grade dedication programs for safety-related materials, equipment, and services. Other activities conducted by the vendor inspection staff include ensuring that counterfeit items are removed and prevented from use in safety-related applications, participation in international cooperation efforts, and the development of industry consensus standards. Focus areas for operating reactors include replacement components, commercial-grade dedication, reverse engineering, software, digital instrumentation and control systems, and fuel fabrication.

For FY 2022, the NRC met its goal of completing at least 20 vendor inspections. During this reporting period, the NRC continued to perform vendor inspections virtually, hybrid, and onsite based on local conditions and vendor facility access restrictions while taking precautions recommended by the CDC to minimize exposure to COVID-19. As such, the NRC uses a vendor inspection modification strategy to plan upcoming inspection activities that consider the safety significance of the vendor activities to be inspected. Additionally, the strategy considers the COVID-19 cases and transmission rate at the vendor facility, changes in component testing schedules due to availability of vendor staff, availability of vendors to support inspections at their facility, social distancing controls in place at the vendor facility, an evaluation of the feasibility for a remote inspection, and the need to technically validate onsite activities. For FY 2023, the NRC plans to perform approximately 20 vendor inspections.

In addition to conducting vendor inspections, the NRC staff held its 8th biennial Regulatory Workshop on Vendor Oversight on June 1-2, 2022 ([ML22166A312](#)). The workshop was held virtually due to the COVID-19 pandemic and had over 300 participants from 10 countries. The purpose of the workshop was to engage the nuclear industry on the NRC's vendor inspection and quality assurance activities to foster communication between the NRC and the nuclear industry, discuss any current issues of importance to the nuclear industry, and provide guidance and clarification, as necessary. Workshop topics included: (1) the NRC staff's response to the Office of Inspector General's (OIG's) report on Counterfeit, Fraudulent, and Suspect Items (CFSI); (2) Nuclear Procurement Issues Corporation's audit team and supplier interface before, during, and after the audit; (3) assessment of laboratories owned by the U.S. Department of

Energy; (4) commercial grade dedication inspections at licensees; (5) lessons learned from inspecting during a pandemic; (6) implementation of the Electric Power Research Institute (EPRI) guidance on hybrid and remote assessments; and (7) lessons learned from implementing the EPRI guidance on hybrid and remote assessments.

On February 9, 2022, the OIG published both the OIG Case No. 20-022, “Special Inquiry into Counterfeit, Fraudulent, and Suspect Items in Operating Nuclear Power Plants” ([ML22040A111](#)), and OIG-22-A-06, “Audit of the Nuclear Regulatory Commission’s Oversight of Counterfeit, Fraudulent, and Suspect Items at Nuclear Power Reactors,” ([ML22040A058](#)). On March 4, 2022, the NRC staff completed a review of the information presented in the OIG reports and determined that there is no evidence that CFSIs have adversely challenged the safety of reactor facilities; that defense-in-depth measures at reactor facilities are adequate to mitigate potential failures introduced by CFSIs; and that failures introduced from any potential CFSIs in systems, structures, and components would have an overall small increase in risk, minimal impact of safety margin, and negligible impact to the public health and safety ([ML22060A153](#)). On April 4, 2022, the NRC completed an additional assessment and determined that the NRC’s regulatory framework which incorporates risk-informed approaches and defense-in-depth principles, and the implementation of a comprehensive oversight program provides confidence that licensees and certificate of compliance holders have adequately prevented or mitigated risks posed by CFSI ([ML22080A111](#)). Some aspects of the OIG reports provided opportunities for the agency to make improvements to the implementation of existing programs and processes. Most of these proposed enhancements are encompassed by the actions already planned and underway as described in the staff’s response ([ML22077A775](#)) to OIG-22-A-06.

Operator Licensing

The NRC staff continued preparations for operator licensing activities involving advanced reactors as part of the development of the 10 CFR Part 53, “Risk Informed, Technology-Inclusive Regulatory Framework for Advanced Reactors,” rulemaking. The staff issued preliminary proposed rule language for Subpart F of Part 53 related to staffing, personnel qualifications, training programs, licensing examinations, and human factors and is drafting staff review guidance in these areas to support the rulemaking activity. This guidance will be shared with stakeholders later this year for feedback.

The NRC staff resumed discussions with NuScale, LLC regarding regulatory products that need to be developed in support of training and licensing future operators for the NuScale small modular reactor design. The staff also began reviewing white papers and providing early feedback to X-energy on its proposed approach for operator staffing and training programs for the Xe-100 design.

Non-Light-Water Reactors

The NRC staff continues to make significant progress executing its vision and strategy for advanced reactor readiness and meeting the requirements in Section 103 of NEIMA. Additional information on the status of advanced reactor readiness and activities is available on the NRC’s public website at <https://www.nrc.gov/reactors/new-reactors/advanced.html>.

Consistent with NEIMA Section 103(a)(4), the NRC staff continues progress to establish a technology-inclusive, risk-informed, and performance-based regulatory framework, otherwise known as 10 CFR Part 53, and associated guidance for advanced reactors. The staff has

continued extensive stakeholder engagement, including holding public meetings to engage stakeholders and the Advisory Committee on Reactor Safeguards (ACRS) in the development of a draft proposed rule. The staff has continued to implement a novel approach of releasing preliminary proposed rule language to facilitate public discussion and continues to assess and consider diverse stakeholder feedback received throughout the public comment period on the preliminary proposed rule language, which closed on August 31, 2022. The staff is planning to provide the proposed and final rules to the Commission on a schedule that would allow for publication of the final rule significantly ahead of the NEIMA deadline of December 2027.

Other recent accomplishments include:

- The NRC staff continued to hold periodic public meetings with stakeholders on numerous non-LWR topics.
- The NRC staff issued a final safety evaluation for Kairos' topical reports on mechanistic source term ([ML22112A133](#)) and regulatory analysis ([ML22136A089](#)).
- The NRC staff issued a final safety evaluation to X-energy for its topical report on risk-informed performance-based licensing basis development ([ML22187A267](#)).
- The NRC staff issued the second iteration of consolidated preliminary proposed rule language for 10 CFR Part 53 Framework A and the first iteration of the consolidated preliminary proposed rule language for 10 CFR Part 53 Framework B ([ML22125A000](#) and [ML22145A000](#), respectively).
- The NRC staff issued Preliminary Draft Regulatory Guide DG-1414, Alternative Evaluation for Risk Insights Framework to support the Part 53 rulemaking ([ML22146A041](#)).
- The NRC staff issued Preliminary Draft Regulatory Guide DG-1413, Technology-Inclusive Identification of Licensing Events for Commercial Nuclear Plants to support the Part 53 rulemaking ([ML22146A045](#)).
- The NRC released the draft proposed rule package for 10 CFR Part 53 to support stakeholder and ACRS interactions in October 2022 ([ML22272A034](#)).
- The NRC staff submitted a paper to the Commission providing Proposed Rule: Alternative Physical Security Requirements for Advanced Reactors for the Commission's consideration ([ML21334A003](#)).

With regard to non-LWR licensing activities, the NRC staff continues to implement flexible and staged non-LWR regulatory review processes and preapplication engagement. The staff is reviewing the construction permit application submitted in October 2021 for the Kairos Hermes test reactor in Oak Ridge, TN, which is intended to support the development of its fluoride salt-cooled, high-temperature reactor technology ([ML21272A375](#) and [ML21306A131](#)). The final safety evaluation report and environmental impact statement are scheduled for completion in September 2023. In August 2022, the staff received a construction permit application from Abilene Christian University for a molten salt, non-power research reactor ([ML22227A201](#)). On September 27, 2022, the staff notified Abilene Christian University that it was pausing the

acceptance review of the construction permit application to allow the applicant to provide supplemental technical information prior to making an acceptance determination on the application ([ML22270A170](#)). The staff is reviewing pre-application reports and meeting regularly with vendors on potential future applications, including: X-energy, LLC, on its pebble-bed, high-temperature gas-cooled reactor; Kairos Power on its tri-structural isotropic particle (TRISO) fuel, molten-fluoride-cooled power reactor; Terrestrial Energy on its molten salt coolant, molten salt fuel reactor; TerraPower on its sodium-cooled fast reactor; Westinghouse Electric Company on its high temperature heat pipe microreactor; General Atomics on its high-temperature gas-cooled reactor; the University of Illinois, Urbana-Champaign on its power-generating TRISO fuel test reactor; and Oklo, Inc. on its compact fast microreactor.

With respect to advanced reactor fuel fabrication, in April 2022, the NRC staff received an application to construct and operate a TRISO fuel fabrication facility from Triso-X, which is a subsidiary of X-energy, LLC ([ML22101A200](#)). The application is currently under acceptance review.

Regulatory Infrastructure

The NRC continues to enhance its regulatory infrastructure to meet its goals of improving the planning, licensing, and oversight of future new reactor applications; making timely and effective policy decisions; and updating regulatory guidance for large LWRs, small modular reactors, and non-LWRs. The NRC also continues to review its internal processes to ensure that the safety and environmental reviews are effective and efficient. As part of the NRC's commitment to openness, the staff continues to provide opportunities for external stakeholder input as part of the agency's processes. The agency also rigorously assesses licensing and oversight performance and uses the results to inform these regulatory infrastructure activities.

The previous section discussed infrastructure activities that are largely for non-LWRs. The sections below describe other infrastructure activities conducted during the reporting period.

Environmental Reviews for Advanced Nuclear Reactors

The NRC staff developed a draft GEIS and proposed rulemaking for the environmental review process for the construction and operation of advanced nuclear reactors as described in SECY-20-0020, "Results of Exploratory Process for Developing a Generic Environmental Impact Statement for the Construction and Operation of Advanced Nuclear Reactors" ([ML20052D029](#)). This GEIS would use a technology-neutral regulatory framework and performance-based assumptions to determine generic environmental impacts for new commercial advanced nuclear reactors. On September 21, 2020, in SRM-SECY-20-0020 ([ML20265A112](#)), the Commission directed the staff to initiate rulemaking for the GEIS. The staff provided this draft GEIS and proposed rule to the Commission on November 29, 2021 ([ML21222A044](#)), for its consideration. Additional information about this rulemaking is available at: <https://www.nrc.gov/reading-rm/doc-collections/rulemaking-ruleforum/active/ruledetails.html?id=1139>.

The NRC staff issued its Draft Environmental Impact Statement for the Kairos Hermes test reactor in September 2022 ([ML22259A126](#)), and will hold a public meeting in Oak Ridge, TN on the application in November 2022. The staff continues to conduct preapplication activities for the UAMPS CFPP, Terrapower, and Clinch River Nuclear Site advanced nuclear reactors. The staff is completing its acceptance review for the Abilene Christian University research reactor. The staff is also developing infrastructure and monitoring developments for other advanced nuclear

projects as appropriate (e.g., Department of the Air Force, X-energy, Oklo, and Holtec).

Alignment of Licensing Processes and Lessons Learned from New Reactor Licensing

The NRC staff is working on a rulemaking to address the alignment of licensing requirements of 10 CFR Part 50, “Domestic licensing of production and utilization facilities,” and 10 CFR Part 52. The Commission directed the staff to pursue rulemaking to incorporate lessons learned from recent new power reactor licensing reviews. This rulemaking would help ensure consistency in new reactor licensing reviews, regardless of whether an applicant chooses to use the Part 50 or Part 52 licensing process.

On June 6, 2022, the NRC staff submitted the draft proposed rule ([ML21159A055](#)) to the Commission for its consideration. In the draft FR notice for the proposed rule, the NRC staff responded to the public comment submissions on the regulatory basis, which were considered in the formulation of the draft proposed rule.

Draft Interim Staff Guidance for New Light-Water Power Reactor Construction Permit Reviews

The draft interim staff guidance (ISG) focuses on the safety review of power reactor construction permit applications for any LWR design, including designs similar to those reviewed recently under 10 CFR Part 52. This guidance is being developed to supplement the current guidance for staff review of LWR construction permit applications in [NUREG-0800](#), “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition.” The draft ISG also references Regulatory Guide (RG) 1.70, “Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants (LWR Edition),” which dates from the 1970s ([ML011340122](#)) and the more recent LWR application guidance in RG 1.206, “Applications for Nuclear Power Plants” ([ML18131A181](#)), for 10 CFR Part 52 applications (which does not include construction permit applications), to provide additional insights on the level of detail needed to support an LWR construction permit application review. The draft ISG discusses the regulatory requirements for a construction permit and provides insights on the level of detail required for a preliminary safety analysis report. It includes an appendix that clarifies and supplements the guidance in [NUREG-0800](#) for the review of a construction permit application. The staff issued the draft ISG on December 14, 2021, in a FR notice ([86 FR 71101](#)) requesting public comment ([ML21165A157](#)). The 45-day comment period ended on January 28, 2022. On May 6, 2022, the NRC published a FR notice ([87 FR 27195](#)) to reopen the public comment period to receive comments on two topics addressed by comments submitted during the initial comment period. The additional 15-day comment period ended on May 23, 2022. There were four comment submissions received. The staff is working to develop responses to the submissions as well as to clarify information for the final ISG. The staff anticipates issuing the final ISG before the end of CY 2022.

Standard Review Plan Modernization (NUREG-0800)

The NRC staff continued its effort to modernize NUREG-0800⁴. The objective of the SRP modernization effort is to help the staff focus its review on the regulatory requirements and associated acceptance criteria that determine whether there is reasonable assurance of adequate protection. In addition, the updated SRP will leverage the improved use of risk insights to inform the staff's reviews. During this reporting period, the NRC staff completed an evaluation of the resources used to date to modernize the first 13 SRP sections and obtained the staff and industry's feedback on the project. In response, the staff refined the scope of the project. The revised scope will focus on the SRP sections prioritized by the staff or industry and sections that will benefit from incorporating concepts beyond SRP modernization guidance, while creating a framework for future modernization of SRP sections through the routine update process.

Environmental Guidance Updates

The NRC staff noticed issuance of Revision 3 of RG 4.2, "Preparation of Environmental Reports for Nuclear Power Stations," in the FR on September 24, 2018 ([83 FR 48346](#)) ([ML18071A400](#)). This was the first update to RG 4.2 since July 1976. The staff is currently evaluating a path forward for updating NUREG-1555, "Standard Review Plans for Environmental Reviews for Nuclear Power Plants: Environmental Standard Review Plan," last revised in July 2007.⁵ The proposed update will reflect changes in NRC policy and regulations and will incorporate streamlined processes based on experience gained through completed environmental reviews. The update will also reflect statutory requirements, applicable Executive Orders, judicial developments, and agency administrative decisions and will consider, as appropriate and in coordination with a potential NRC rulemaking, any new environmental regulations issued by the Council on Environmental Quality. Further, as directed by the Commission on April 23, 2021, in SRM-M210218B ([ML21113A070](#)), the staff conducted a systematic review of how the agency's programs, policies, and activities address environmental justice. On March 29, 2022, the staff submitted the results ([ML22031A063](#)) of its review and recommendations to the Commission for its consideration.

On April 5, 2022, the Commission issued SRM-SECY-22-0024 ([ML22096A035](#)), which directed the staff to complete a rulemaking in 24 months for renewing nuclear power plants operating licenses environmental reviews and update associated guidance for consistency (e.g., NUREG-1555). In the interim, the NRC continues to conduct environmental reviews in accordance with current NRC regulations for subsequent license reviews and applicable existing and ISG, while still considering best practices and lessons learned from past reviews.

X. Planned Rulemaking Activities

The attached report lists the status of NRC rulemaking activities as of October 1, 2022, including their priorities and schedules. Of the 66 rulemaking activities, 61 rulemakings are planned activities. The NRC is also reviewing five petitions for rulemaking. The 61 planned rulemaking activities include 7 proposals in response to industry requests, 14 that could reduce or clarify existing requirements, 21 that are required by statute or are needed to conform NRC regulations to other agency requirements or to international treaties or agreements, and 19 that could establish new requirements. The NRC uses a single tracking and reporting system to

⁴ The Standard Review Plan (SRP) is available online at <https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0800/index.html>.

⁵ The SRP is available online at <https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1555/updates.html>.

provide real-time updates on all NRC rulemaking activities. Members of the public can access the NRC's rulemaking activity information at <https://www.nrc.gov/about-nrc/regulatory/rulemaking/rules-petitions.html>.

At the time of publication, each proposed and final rule includes a statement that addresses actions taken to meet applicable backfitting and issue finality requirements, including which, if any, backfitting and issue finality requirements apply and how the NRC staff evaluated the rule with respect to those requirements.