

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

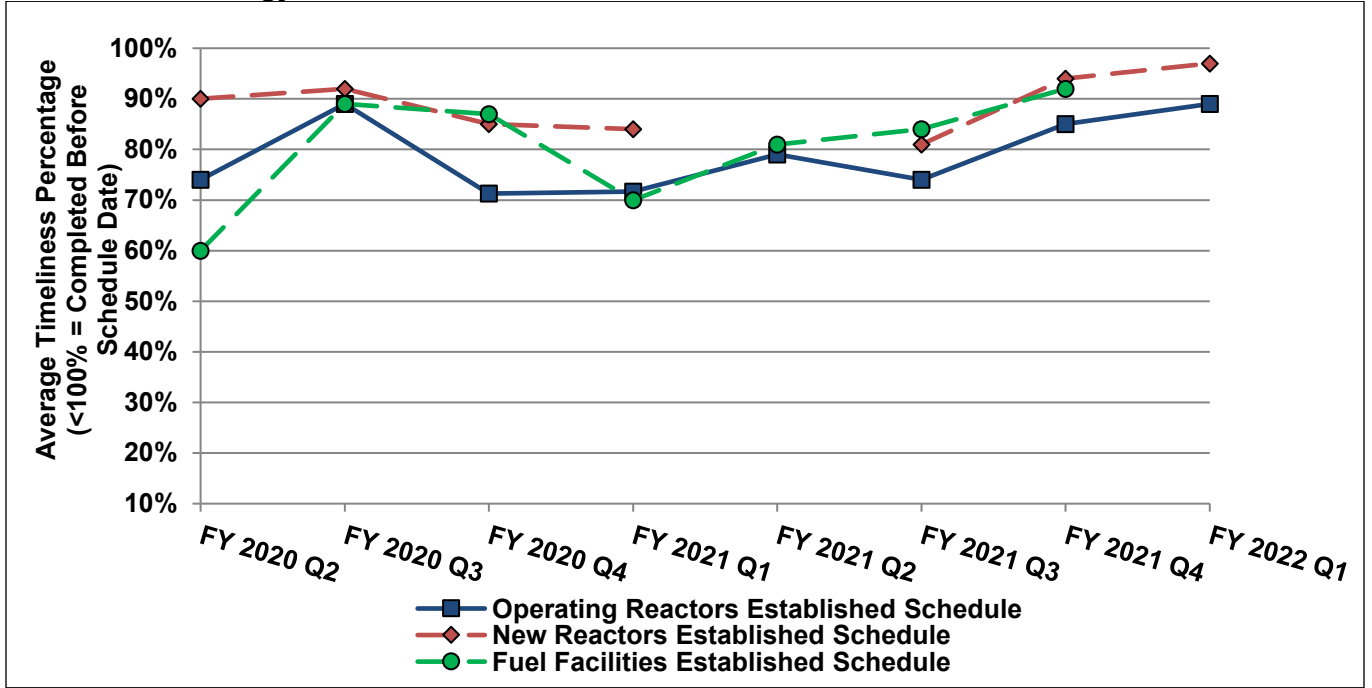
**For the Reporting Period of October 1, 2021 through December 31, 2021**

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## Enclosure 1 – High Level Summary

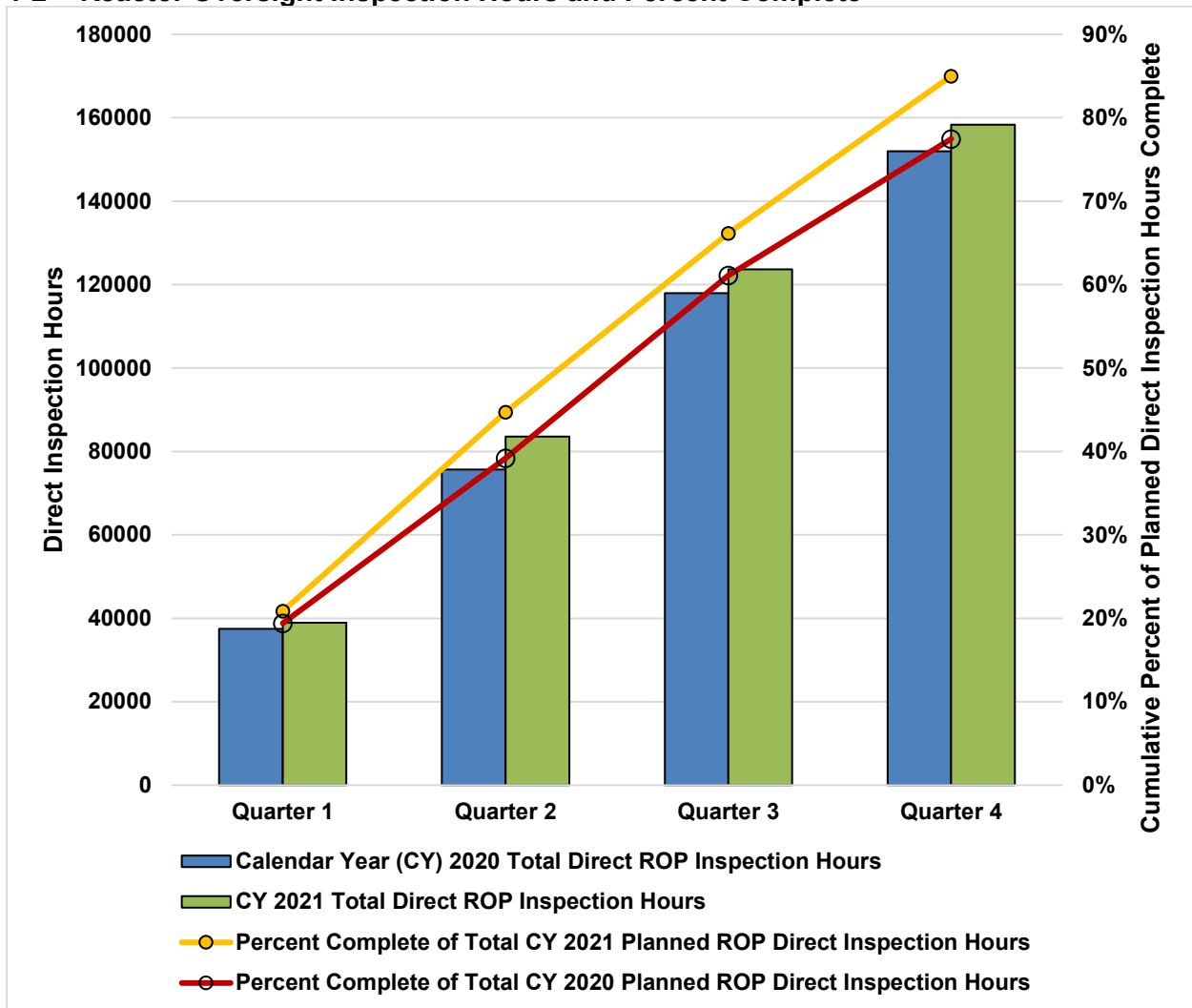
### 1-1 Average Timeliness Percentage for Licensing Actions Categorized Under the Nuclear Energy Innovation and Modernization Act



1

<sup>1</sup> No licensing actions categorized under the Nuclear Energy Innovation and Modernization Act were completed in Quarter (Q) 2 fiscal year (FY) 2021 for the new reactor business line.

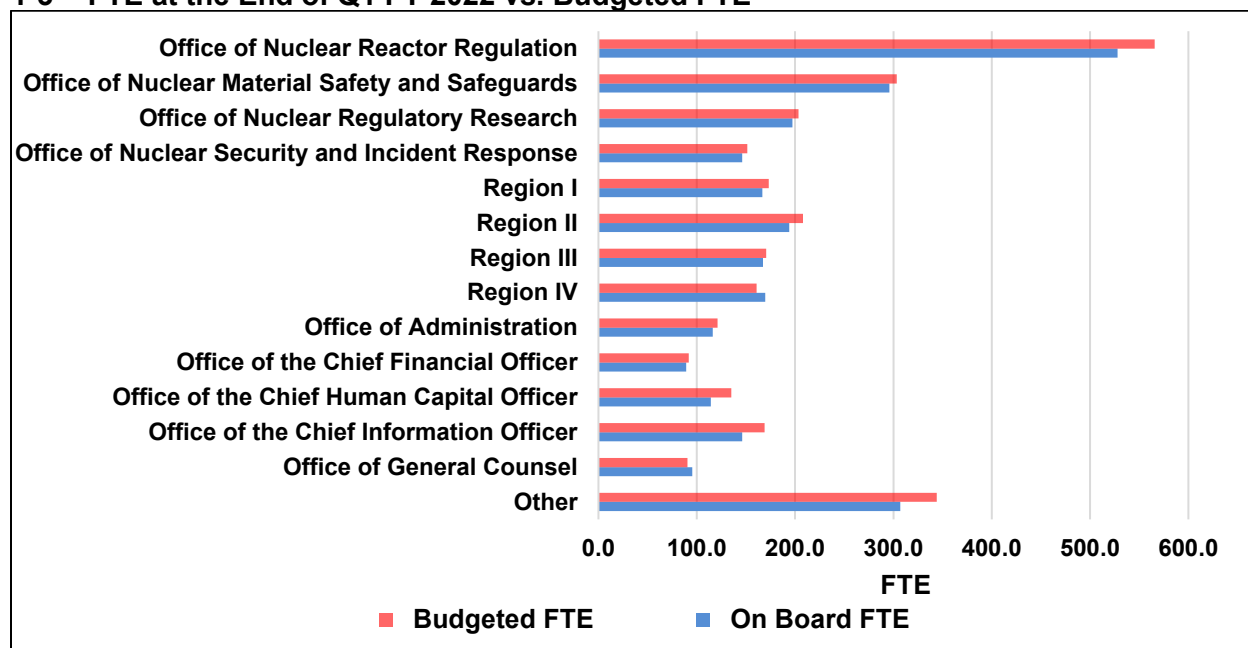
## 1-2 Reactor Oversight Inspection Hours and Percent Complete



2

<sup>2</sup> “Planned direct inspection hours” refers to the number of hours associated with completion of the U.S. Nuclear Regulatory Commission’s (NRCs) “nominal” number of inspection samples established for the baseline inspection program, which is a conservative target. This contrasts with the “minimum” number of hours that would be necessary to complete the set of inspection activities that constitutes completion of the Reactor Oversight Process (ROP) baseline inspection program for the calendar year. In CY 2020, despite falling short of the planned/nominal number of inspection hours (due to the ongoing COVID-19 pandemic and its impact on planned inspection activities), the NRC performed the minimum number of inspection hours associated with program completion. In CY 2021, the NRC completed well above the minimum number of inspection hours needed for program completion. Certification of the completion of the baseline inspection program for CY 2021 is underway.

### 1-3 FTE at the End of Q1 FY 2022 vs. Budgeted FTE



### 1-4 Budget Authority, FTE Utilization, and Fees

NRC FY 2022 Budget Authority December 31, 2021 (Dollars in Thousands)

Fund Sources	FY 2022 Budget <sup>3</sup>	Percent Obligated	Percent Expended
Advanced Reactors	\$17,709	19%	17%
Commission Funds	\$12,799	10%	10%
Fee-Based Funds	\$789,314	19%	17%
General Funds <sup>4</sup>	\$1,158	12%	12%
International Activities	\$13,399	23%	18%
University Nuclear Leadership Program / Integrated University Program	\$2,000	98%	0%
Official Representation	\$27	10%	10%
Total	\$836,406	19%	17%
NRC Control Points	FY 2022 Budget	Percent Obligated	Percent Expended
Nuclear Reactor Safety	\$435,212	20%	19%

<sup>3</sup> The agency is operating under the Further Continuing Appropriations Act, 2022 (as amended); therefore, this table reflects the FY 2021 total annualized rate (i.e., the FY 2021 enacted levels). This table also includes the carryover allocated during Q1 FY 2022.

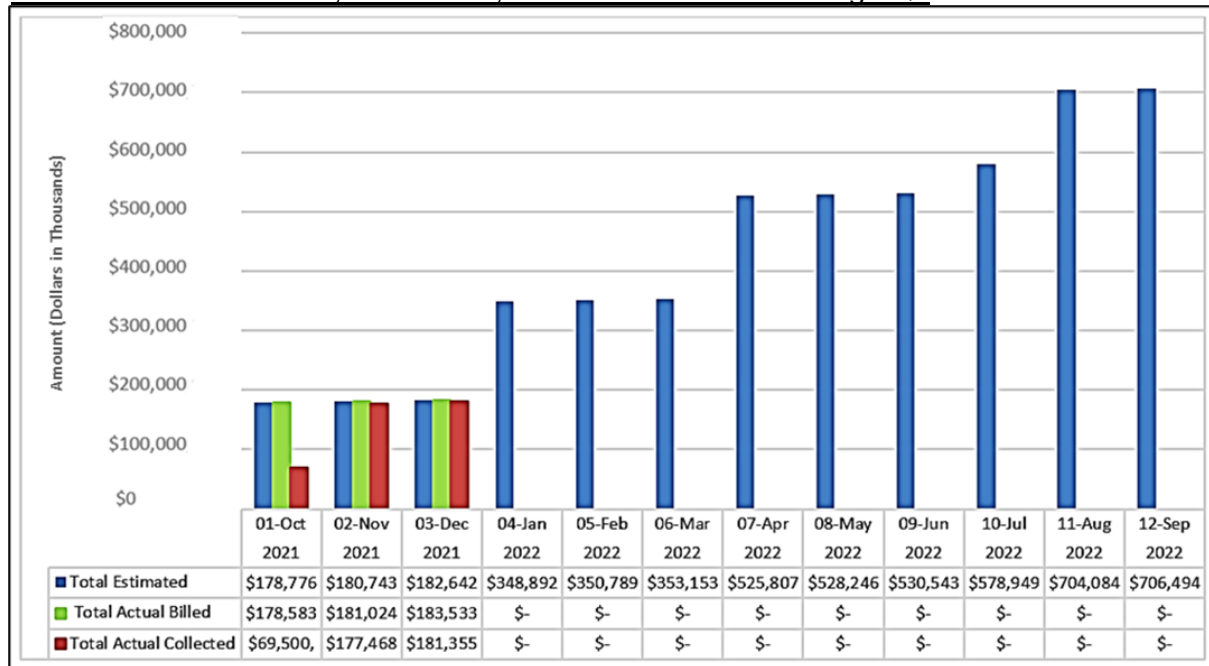
<sup>4</sup> Consistent with previous reports, this row represents waste incidental to reprocessing activities excluded from the fee-recovery requirement.

Fund Sources	FY 2022 Budget <sup>3</sup>	Percent Obligated	Percent Expended
Nuclear Materials and Waste Safety	\$101,898	20%	19%
Decommissioning and Low-Level Waste	\$22,580	21%	19%
Corporate Support	\$274,716	16%	13%
University Nuclear Leadership Program / Integrated University Program <sup>5</sup>	\$2,000	98%	0%
Total	\$836,406	19%	17%

**FTE Utilization, Hiring, and Attrition**

Total Year to Date (YTD) FTE Utilization	Projected End of Year FTE Total Utilization	Quarter 1 Hiring	Quarter 1 Attrition	YTD Hiring	YTD Attrition
629.3	2768.6	23	38	23	38

**FY 2022 Fees Estimated, Fees Billed, and Fees Collected Through Q1**



**Total 10 CFR Part 170 Fees Billed (Dollars in Millions)**

FY 2020	FY 2021	FY 2022 Q1
\$205.7	\$183.9	\$53.7

<sup>5</sup> This row is labeled as "University Nuclear Leadership Program / Integrated University Program" because the FY 2021 Explanatory Statement identified this control point as the "Integrated University Program," but Division Z of the Consolidated Appropriations Act, 2021 replaced the Integrated University Program with the University Nuclear Leadership Program.

## Enclosure 2 – Status of Specific Items of Interest

Enclosure 2 provides the status of specific items of interest including a summary of the item, the activities planned and accomplished under each item within the reporting period, and projected activities under each item for the next two reporting periods.

### 2-1 Transformation

The U.S. Nuclear Regulatory Commission (NRC) is becoming a more modern, risk-informed regulator, open to new technologies and ways of implementing our safety and security mission. Over the past two years, the NRC has made significant progress in four focus areas: (1) recruiting, developing, and retaining a strong workforce; (2) improving decision-making through the acceptance of an appropriate level of risk without compromising the NRC’s mission; (3) establishing a culture that embraces innovation; and (4) adopting new and existing information technology resources. The agency has completed all but one of our initial agencywide initiatives associated with the four focus areas.

To sustain progress and meet the agency’s transformation goals, the NRC will use a variety of tools, including “objectives and key results” that relate to the current four focus areas (i.e., Our People, Be riskSMART, Using Technology, and Innovation). The NRC continues to leverage available technologies, increase opportunities for staff to gain new skills, attract talented new staff, and foster a culture of safety and innovation that accounts for differing viewpoints and risk insights in our decision-making. Planned future activities will focus on incorporating positive transformational changes into the agency’s culture and processes.

#### Activities Planned and Completed for the Reporting Period ((Quarter) Q1 Fiscal Year (FY) 2022)

Transformation Activities	Projected Completion Date	Completion Date
Facilitated discussion on leading hybrid teams and provided resources for employees to enhance knowledge and skills to perform in a hybrid environment.	12/31/21	12/31/21 <sup>6</sup>
Completed first assessment of survey of external stakeholder views on NRC transformation activities.	12/31/21	01/05/22 <sup>7</sup>

#### Projected Activities for the Next Two Reporting Periods (Q2 and Q3 FY 2022)

Projected Transformation Activities	Projected Completion Date
Conduct a series of first-line supervisor workshops to engage in dialogue on the agency’s progress on transformation and identify actions they can take to encourage use of transformation tools, while mitigating the effects of change fatigue.	02/01/22 <sup>8</sup>

<sup>6</sup> This was an emergent activity during the reporting period based on the need to prepare staff for re-entry.

<sup>7</sup> This initial internal assessment of the survey was completed in December 2021; a briefing on those results to senior agency leadership was completed on January 5, 2022. A final assessment of the survey of external stakeholder views will be conducted after the survey closes at the end of March 2022.

<sup>8</sup> In the last report, the projected completion date for this activity was reported as January 31, 2022. The workshops are scheduled and the final one is now anticipated to be completed on February 1, 2022.

Projected Transformation Activities	Projected Completion Date
Launch the Mission Analytics Portal Event Reporting module. This module will provide NRC licensees an alternative electronic submission method for reports required under Title 10 of the <i>Code of Federal Regulations</i> (10 CFR) 50.72.	02/28/22 <sup>9</sup>
Establish calendar year 2022 Objectives and Key Results.	02/28/22
Conduct final assessment of survey of external stakeholder views on NRC transformation activities.	05/31/22
Brief the Commission on the staff's transformation activities (public meeting).	06/30/22
Implement a staff-led effort to recognize NRC employees who make notable and innovative contributions towards attaining agency goals through business improvements, applying risk insights, using data in decision-making, realizing culture, enhancing the work environment, or advancing knowledge management practices.	07/31/22

## 2-2 Workforce Development and Management

The NRC implemented a Strategic Workforce Planning (SWP) process to improve workforce development to meet its near- and long-term work demands. The first step in this process is an Agency Environmental Scan that projects the amount and type of work anticipated in the next five years and identifies the workforce needs in order to perform that work. By analyzing the current workforce and comparing it to future needs, skill gaps can be identified. In the final step of the process, both short- and long-term strategies are developed to enable the agency to recruit, retain, and develop a skilled and diverse workforce with the competencies and agility to address both current and emerging needs and workload fluctuations. The SWP process occurs each FY.

During the reporting period, the agency began recruitment efforts for our Summer Student Intern program and anticipates having 75 – 80 new and returning students onboard during summer 2022. Additionally, recruitment efforts began for the second Nuclear Regulator Apprenticeship Network (NRAN) cohort, and 25 recent graduates majoring in engineering and science are expected to join the agency in Q4 FY 2022.

Additionally, during this reporting period, the Chief Human Capital Officer began developing a strategy for a significant recruitment effort to occur throughout FY 2022. The strategy will directly address staffing challenges and ensure that the agency continues to fulfill its important safety and security mission well into the future.

### Activities Planned and Completed for the Reporting Period (Q1 FY 2022)

Workforce Development and Management Activities	Projected Completion Date	Completion Date
Completed updates to the Agency Environmental Scan to support FY 2022 SWP activities.	12/31/21	12/31/21

<sup>9</sup> The projected completion date for this activity has been extended from December 31, 2021, to February 28, 2022, due to additional time needed to complete actions that must be taken prior to launch of the portal.



Workforce Development and Management Activities	Projected Completion Date	Completion Date
Utilized insights from the SWP process to inform recruitment activities for the 2022 NRAN and Summer Student Intern programs and made initial selections.	12/31/21	12/31/21

Projected Activities for the Next Two Reporting Periods (Q2 and Q3 FY 2022)

Projected Workforce Development and Management Activities	Projected Completion Date
Complete Steps 2 (Workload Forecasting and Workforce Demand) and 3 (Workforce Supply Analysis) to support 2022 SWP activities.	03/31/22
Continue pre-employment hiring activities for NRAN and Summer Student Intern program selectees.	03/31/22
Onboard Summer 2022 Student Interns.	06/30/22
Complete Steps 4 (Gap Analysis and Risk Assessment) and 5 (Strategies and Action Plans) to support 2022 SWP activities.	06/30/22

### 2-3 Accident Tolerant Fuel

While the NRC is ready to review and license Accident Tolerant Fuel (ATF), higher burnup, and increased enrichment submittals under the current regulatory framework, the NRC continues to take steps to make agency processes more efficient and effective. The NRC staff is executing the ATF project plan (Agencywide Documents Access and Management System (ADAMS) Accession No. [ML21243A298](#)), which was revised to include an increased focus on higher burnup and increased enrichment fuels. The NRC has not received any additional ATF fuel vendor topical reports for review since the last reporting period, and the NRC staff continues to review five ATF fuel vendor topical reports. The first topical report is on a new type of doped fuel pellet called “Westinghouse Advanced Doped Pellet Technology (ADOPT™) Fuel” (ADAMS Accession No. [ML20132A014](#)). The second covers increased burnup limits for a fuel cladding material (ADAMS Package No. [ML20003E125](#)). The third discusses a slight increase in burnup limits for existing Westinghouse fuel designs (ADAMS Package No. [ML20350B834](#)), and the fourth involves increased fuel enrichment (ADAMS Package No. [ML21035A073](#)). The fifth report discusses the use of chromia-doped fuel for pressurized water reactors (ADAMS Accession No. [ML21187A198](#)). The NRC staff is on track to complete review of these topical reports by FY 2025.

The NRC staff also continues to review a request from Framatome to amend the certificate of compliance for the MAP transportation package. The amendment seeks to authorize shipment of 17x17 fuel assemblies with enrichments above 5 weight percent uranium-235 (ADAMS Package No. [ML21090A321](#)). Further, the NRC staff is reviewing two additional transportation package amendments (ADAMS Accession Nos. [ML21216A322](#) and [ML21181A001](#)), that are seeking increased enrichment above 5 weight percent uranium-235; the NRC staff’s review of these applications is expected to be completed between early- to mid-calendar year (CY) 2022. The NRC expects to receive a number of license amendment requests (LARs) in CY 2022 from enrichment facilities and fuel fabricators to directly support increased enrichment above 5 weight percent uranium-235.

Activities Planned and Completed for the Reporting Period (Q1 FY 2022)

ATF Activities	Projected Completion Date	Completion Date
Issued a research information letter documenting the current state of knowledge regarding the phenomena of fuel fragmentation, relocation, and dispersal in higher burnup fuel (ADAMS Accession No. <a href="#">ML21313A145</a> ).	03/31/22	12/17/21
Provided to the Commission a rulemaking plan evaluating changes to regulations associated with the potential use of light-water-reactor fuel containing uranium enriched to greater than 5.0 weight percent uranium-235 (ADAMS Accession No. <a href="#">ML21232A232</a> ).	12/31/21	12/20/21

Projected Activities for the Next Two Reporting Periods (Q2 and Q3 FY 2022)

Projected ATF Activities	Projected Completion Date
Issue the Regulatory Framework Applicability Assessment and associated Licensing Pathways. The Regulatory Framework Applicability Assessment contains the NRC staff's analysis of the applicability of regulations and guidance for coated cladding, doped pellets, higher burnup, and increased enrichment fuels. The Licensing Pathways are intended to illustrate the remaining informational needs or tasks that should be completed to thoroughly and efficiently review ATF topical reports and plant-specific LARs.	02/28/22 <sup>10</sup>
Host an NRC Regulatory Information Conference session on ATF. The public session will provide stakeholders an opportunity to learn about the progress of ATF licensing activities and technologies to date and the activities that support efficient licensing of ATF concepts. The panel discussion will focus on completed ATF readiness activities, plans for the remaining stakeholder activities as well as the NRC's projected licensing timelines, and challenges to ATF deployment timelines.	03/09/22
Hold a third Higher Burnup workshop. This workshop will discuss the state of development of higher burnup and increased enrichment technical and regulatory issues. It will also provide a public forum for discussions between the NRC, industry, and other stakeholders.	06/30/22

## 2-4 Digital Instrumentation and Control

The NRC staff continues to complete digital instrumentation and control (digital I&C) infrastructure improvements to address commercial grade dedication of digital equipment and protection against common cause failure (CCF). Further, the NRC staff continues to review and prepare for anticipated digital modernization LARs. While some infrastructure improvement activities continue, the staff is transitioning to using the improved infrastructure to

<sup>10</sup> The projected completion date was modified from December 31, 2021, to February 28, 2022, to accommodate additional public engagement with stakeholders on their comments, which was completed on December 7, 2021.

support the review of licensees’ digital I&C modernization LARs. These activities support the NRC’s vision to establish a modern, risk-informed regulatory structure with reduced uncertainty that will enable the expanded safe use of digital technologies.

During the reporting period, the NRC staff continued to review the Nuclear Energy Institute’s (NEI) NEI 17-06, “Guidance on Using IEC 61508 SIL Certification to Support the Acceptance of Commercial Grade Digital Equipment for Nuclear Safety Related Applications.” On December 3, 2021, NEI provided a substantial revision to the proposed guidance in NEI 17-06. NEI 17-06 is intended to clarify how licensees can use Safety Integrity Level (SIL) certification in their commercial grade dedication programs. These commercial dedication programs would provide increased access to safety critical digital equipment not specifically developed for the nuclear industry. In September 2021, NEI provided a major revision of its proposed additional CCF guidance contained in NEI 20-07, “Guidance for Addressing Software Common Cause Failure in High Safety-Significant Safety-Related Digital I&C Systems,” for NRC review. The NRC staff is currently considering the policy implications of new approaches and plans to hold a public meeting with external stakeholders in the near term to inform its thinking on how best to consider addressing digital I&C CCF. Additionally, the NRC staff is planning a public workshop with external stakeholders to discuss the lessons learned from the first application of the alternate review process for digital I&C LARs described in interim staff guidance DI&C-ISG-06, Revision 2, “Licensing Process.”

Several licensees are now planning for digital upgrades. The NRC staff has communicated to industry that pre-application engagement can be vital to enabling efficient and effective reviews of LARs, and the staff continues to conduct pre-application meetings to better understand the scope and schedule for LARs for two upcoming major digital modifications: 1) Turkey Point Power Plant Units 3 and 4 planned for February 2022, and 2) Limerick Generating Station Units 1 and 2 planned for September 2022.

Activities Planned and Completed for the Reporting Period (Q1 FY 2022)

Digital Instrumentation and Control Activities	Projected Completion Date	Completion Date
Review NEI 17-06, “Guidance on Using IEC 61508 SIL Certification to Support the Acceptance of Commercial Grade Digital Equipment for Nuclear Safety Related Applications,” and consider endorsement through issuance of a regulatory guide (RG).		
<ul style="list-style-type: none"> <li>Conducted public meeting to discuss proposed revision to NEI 17-06 and proposed NRC draft guidance (ADAMS Accession No. <a href="#">ML21323A140</a>).</li> </ul>	11/09/21	11/09/21
Digital Modernization LAR Using the Improved Digital Regulatory Infrastructure <sup>11</sup>		
<ul style="list-style-type: none"> <li>Conducted fourth pre-application meeting with Exelon for a digital modernization project at Limerick Generating Station (ADAMS Accession No. <a href="#">ML21300A277</a>).</li> </ul>	10/20/21	10/20/21

<sup>11</sup> Activities reported in this section are related to planned or submitted digital changes for which the licensee is using some portion of the modernized digital regulatory infrastructure.

Digital Instrumentation and Control Activities	Projected Completion Date	Completion Date
<ul style="list-style-type: none"> <li>Conducted fifth pre-application meeting with Exelon for a digital modernization project at Limerick Generating Station (ADAMS Accession No. <a href="#">ML21330A045</a>).</li> </ul>	12/07/21	12/07/21

Projected Activities for the Next Two Reporting Periods (Q2 and Q3 FY 2022)

Projected Digital Instrumentation and Control Activities	Projected Completion Date
Review NEI 17-06, "Guidance on Using IEC 61508 SIL Certification to Support the Acceptance of Commercial Grade Digital Equipment for Nuclear Safety Related Applications," and consider endorsement through issuance of an RG.	
<ul style="list-style-type: none"> <li>Publish draft RG that may endorse the guidance in NEI 17-06 for public comment.</li> </ul>	05/31/22
Digital Modernization LAR Using the Improved Digital Regulatory Infrastructure <sup>12</sup>	
<ul style="list-style-type: none"> <li>Conduct sixth pre-application meeting with Exelon for a digital modernization project at Limerick Generating Station.</li> </ul>	01/11/22
<ul style="list-style-type: none"> <li>Conduct sixth pre-application meeting with NextEra for digital modernization project at Turkey Point Units 3 and 4.</li> </ul>	01/31/22
<ul style="list-style-type: none"> <li>Issue a staff decision on acceptability of the NextEra submittal for digital modernization project at Turkey Point Units 3 and 4 within 60 days of submission by licensee.</li> </ul>	03/31/22 <sup>13</sup>
Consideration of Current CCF Policy in SECY-93-08	
<ul style="list-style-type: none"> <li>Conduct public meeting with external stakeholders to discuss CCF policy in SECY-93-08</li> </ul>	02/28/22
Alternate Review Process Lessons Learned Workshop	
<ul style="list-style-type: none"> <li>Conduct workshop with external stakeholders on lessons learned from the first application of the alternate review process.</li> </ul>	03/31/22

## 2-5 Vogtle Electric Generating Plant Units 3 and 4

The NRC issued two combined licenses (COLs) to Southern Nuclear Operating Company (SNC) and its financial partners on February 10, 2012, for two AP1000 units to be built and operated at the Vogtle site near Augusta, GA. SNC's public milestone for Vogtle Electric Generating Plant (Vogtle) Unit 3 entering service. The NRC staff adjusted the agency's activities and associated milestone dates to reflect the revised schedule.

During this reporting period, the NRC staff focused significant inspection activities on the licensee's response to quality issues. On November 17, 2021, the NRC issued a Final Significance Determination letter (ADAMS Accession No. [ML21312A412](#)) to SNC regarding the findings discussed in the Special Inspection Report dated August 26, 2021 (ADAMS Accession No. [ML21236A057](#)). The NRC staff issued two White findings after careful evaluation of the inspection findings and SNC's response to the Special Inspection Report, which the NRC

<sup>12</sup> Activities reported in this section are related to planned or submitted digital changes for which the licensee is using some portion of the modernized digital regulatory infrastructure.

<sup>13</sup> The projected completion date changed because the licensee is delaying the submittal of this LAR.

received on October 5, 2021 (ADAMS Accession No. [ML21278A354](#)). The first White finding was associated with the failure to promptly identify and correct conditions adverse to quality for the installation of Class 1E cables and associated raceways. The second White finding was associated with the failure to accomplish separation for Class 1E system field installations in accordance with applicable instructions, procedures, and drawings. Both findings were determined to have low to moderate safety significance. The NRC staff currently plans to conduct a supplemental inspection at Vogtle Units 3 and 4 during Q2 FY 2022 to oversee SNC's resolution of the cable installation issues.

Due to the COVID-19 public health emergency, the NRC staff performed mission-critical inspections through a combination of remote inspections and targeted onsite inspections. The NRC maintains its inspection agility through consistent communication with the licensee and resource planning to ensure that the NRC can adapt to changes in the dynamic construction schedule.

**Activities Planned and Completed for the Reporting Period (Q1 FY 2022)**

<b>Vogtle Electric Generating Plant Units 3 and 4 Activities</b>	<b>Projected Completion Date</b>	<b>Completion Date</b>
Issued a decision regarding SNC's request for a license amendment and exemption to revise inspections, tests, analyses, and acceptance criteria (ITAAC) associated with inspection of specific components that cannot be placed in their final location until after core fuel load (ADAMS Package No. <a href="#">ML21237A205</a> ).	10/11/21	10/15/21 <sup>14</sup>
Issued a decision regarding SNC's request for a limited scope exemption from certain operator testing requirements for reactor operators licensed to operate Unit 3 who are qualified to operate Unit 4 (ADAMS Package No. <a href="#">ML21279A185</a> ).	11/30/21	11/22/21
Issued a decision regarding SNC's request for an exemption to implement certain physical protection and personnel access authorization requirements after the Commission finds that the acceptance criteria in the COL are met and prior to initial fuel load (ADAMS Package No. <a href="#">ML21320A041</a> ).	12/01/21	11/23/21 <sup>15</sup>
Issued a decision regarding SNC's request for an exemption to delay establishment of the full fitness for duty program from the time of the 10 CFR 52.103(g) finding to prior to fuel load (ADAMS Package No. <a href="#">ML21334A417</a> ).	12/20/21	12/21/21 <sup>16</sup>

<sup>14</sup> The safety evaluation was issued after the projected completion date to ensure all technical concerns were fully resolved. The license amendment was issued in time to support Vogtle Units 3 and 4 construction activities.

<sup>15</sup> This was a new emergent activity identified during the reporting period based on an exemption request submitted by SNC to delay establishment of the protected area from the time of the 10 CFR 52.103(g) finding to prior to initial fuel load.

<sup>16</sup> This was a new emergent activity identified during the reporting period based on an exemption request submitted by SNC to delay establishment of the full fitness for duty program from the time of the 10 CFR 52.103(g) finding to prior to initial fuel load. The exemption was issued 1 day after the projected completion date to allow time to resolve technical concerns. It was issued in time to support Vogtle Units 3 and 4 construction activities.

Vogtle Electric Generating Plant Units 3 and 4 Activities	Projected Completion Date	Completion Date
Conducted a public meeting to discuss Vogtle Readiness Group activities (ADAMS Accession No. <a href="#">ML21337A003</a> ).	11/18/21	12/02/21 <sup>17</sup>

Projected Activities for the Next Two Reporting Periods (Q2 and Q3 FY 2022)

Projected Vogtle Electric Generating Plant Units 3 and 4 Activities	Projected Completion Date
Publish a notice of the licensee’s intent to operate Vogtle Unit 4 in the <i>Federal Register</i> (FR) to announce the opportunity for the public to request a hearing on the licensee’s conformance with acceptance criteria in the COL. <sup>18</sup>	02/02/22 <sup>19</sup>
Issue a letter regarding Vogtle Unit 3’s transition to the operating reactor assessment program.	03/31/22 <sup>20</sup>
Once the NRC determines that all ITAAC have been met, issue the finding that all acceptance criteria contained in the Vogtle Unit 3 license have been met and that the licensee may operate the facility, in accordance with 10 CFR 52.103(g).	03/31/22 <sup>21</sup>

A COL allows a licensee to construct a plant and to operate it once construction is complete if certain standards identified in the COL are satisfied. These standards are called ITAAC. The majority of ITAAC are from the design certification for the particular reactor technology that a plant uses. Throughout the construction process, NRC inspectors will perform inspections based on [Inspection Manual Chapter 2503](#), “Construction Inspection Program: Inspections of Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) Related Work,” and the NRC’s [Construction Inspection Program](#) at the plant site to confirm that the licensee has successfully completed the ITAAC.

Additional information on the ITAAC process as well as closure for Vogtle Units 3 and 4 is available at <https://www.nrc.gov/reactors/new-reactors/oversight/itaac.html>.

Unit	Number of ITAAC Remaining Requiring Inspection	Total Inspections Completed <sup>22</sup>	ITAAC Inspected <sup>23</sup>	ITAAC Inspections Closed <sup>24</sup>
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<sup>17</sup> The public meeting was delayed until December 2, 2021, based on schedule conflicts.

<sup>18</sup> This activity was previously reported in error for Unit 3 and is being corrected in this report.

<sup>19</sup> The timing of FR notice was adjusted because of updates to the licensee’s schedule for commercial operations for Vogtle Unit 4.

<sup>20</sup> The projected completion date was modified from December 31, 2021, to March 31, 2022, due to changes in the licensee’s construction schedule for Vogtle Unit 3.

<sup>21</sup> The projected completion date was modified from January 31, 2022, to March 31, 2022, due to changes in the licensee’s construction schedule for Vogtle Unit 3.

<sup>22</sup> This column includes all inspections related to Vogtle Unit 3 and 4 completed during the reporting period; the column is not limited to ITAAC (e.g., quality assurance inspections).

<sup>23</sup> “ITAAC Inspected” refers to the number of ITAAC that were inspected as part of ongoing inspections and does not indicate that all inspections were completed for those ITAAC. Only “targeted ITAAC” – ITAAC selected for inspection by the NRC staff – are included in this count.

<sup>24</sup> “ITAAC Inspection Closed” refers to the number of ITAAC for which all associated inspections have been completed during the reporting period.

Vogtle 3	66	25	5	23
Vogtle 4	127	2	2	1

**ITAAC Reviews Completed for the Reporting Period (Q1 FY 2022)<sup>25</sup>**

The table below provides ITAAC closure notification reviews completed during the reporting period for Vogtle Units 3 and 4, including the date when the NRC received the ITAAC closure notice and the date when the review was completed.

Unit	ITAAC No.	Received Date	Approval Date
Vogtle 4	2.5.05.03b	10/27/21	10/28/21
Vogtle 3	2.2.03.01	10/22/21	10/25/21
Vogtle 3	2.3.07.02a	10/22/21	10/25/21
Vogtle 3	2.5.01.03e	10/18/21	10/22/21
Vogtle 3	2.5.05.03b	10/20/21	10/21/21
Vogtle 3	2.6.06.01.i	10/12/21	10/20/21
Vogtle 3	3.3.00.07d.v.b	10/18/21	10/20/21
Vogtle 3	3.3.00.07d.v.c	10/18/21	10/20/21
Vogtle 3	3.3.00.07d.v.a	10/18/21	10/20/21
Vogtle 3	2.3.07.07c	10/13/21	10/18/21
Vogtle 3	2.3.03.04	10/08/21	10/14/21
Vogtle 3	2.2.01.08	10/08/21	10/14/21
Vogtle 3	3.3.00.07d.iv.a	10/07/21	10/12/21
Vogtle 3	3.3.00.07d.iv.b	10/07/21	10/12/21
Vogtle 3	3.3.00.07d.iv.c	10/07/21	10/12/21
Vogtle 3	2.2.04.12a.i	10/05/21	10/07/21
Vogtle 3	2.2.03.08c.viii	10/01/21	10/05/21
Vogtle 3	3.3.00.02a.i.c	09/24/21	10/05/21
Vogtle 3	2.2.03.08b.01	09/24/21	10/04/21
Vogtle 3	2.1.01.04	11/10/21	11/30/21
Vogtle 3	2.5.05.02.i	11/24/21	11/29/21
Vogtle 3	3.3.00.10.ii	11/11/21	11/22/21
Vogtle 3	2.7.04.03	11/17/21	11/18/21
Vogtle 3	3.3.00.01	11/08/21	11/16/21
Vogtle 3	3.3.00.02a.i.d	11/12/21	11/15/21
Vogtle 3	2.2.03.08c.ix	11/11/21	11/15/21
Vogtle 3	3.3.00.10.i	11/04/21	11/15/21
Vogtle 3	C.2.6.09.03b	10/08/21	11/15/21
Vogtle 3	2.2.01.11a.iii	11/05/21	11/15/21
Vogtle 3	2.3.13.05.i	11/03/21	11/05/21

<sup>25</sup> This table accounts for the total number of ITAAC that SNC provided closure notifications for and that the NRC verified. This includes both ITAAC that were selected for inspection by the NRC staff (targeted ITAAC) and ITAAC that were not selected for inspection by the NRC staff (non-targeted ITAAC). This differs from the previous table, where the "ITAAC Inspected" column is the number of targeted ITAAC that were inspected during the designated reporting period.

Vogtle 3	E.3.9.06.00.04	10/27/21	11/01/21
Vogtle 3	2.3.06.05a.i	10/29/21	11/01/21
Vogtle 3	2.2.04.02a	12/02/21	12/06/21

**Vogtle Units 3 and 4 License Amendment Request Reviews Completed (Q1 FY 2022)**

Number of License Amendment Request Reviews Forecast to be Completed in the Reporting Period	Number of License Amendment Request Reviews that Were Completed in the Reporting Period
2	4

**2-6 NuScale Small Modular Reactor Design Certification**

On March 15, 2017, the NRC accepted the NuScale Power, LLC (NuScale) application for a small modular reactor (SMR) design certification review. The NRC staff completed the final Safety Evaluation Report on August 28, 2020 (ADAMS Package No. [ML20023A318](#)), and issued a standard design approval to NuScale on September 11, 2020 (ADAMS Accession No. [ML20247J564](#)). On January 14, 2021, the NRC staff provided the Commission with a draft proposed rule that proposes certifying the design for its consideration (ADAMS Package No. [ML19353A003](#)). On May 6, 2021, the Commission approved the publication of the proposed rule (ADAMS Package No. [ML21126A153](#)), and on July 1, 2021, the proposed rule was published for public comment in the FR (86 FR 34999) with a comment period ending August 30, 2021. During the public comment period, the staff received a request, submitted on behalf of two public interest groups, to extend the public comment period (ADAMS Accession No. [ML21209A763](#)). On August 24, 2021, the NRC staff published a FR notice extending the public comment period by 45 days to October 14, 2021 (86 FR 47251). The NRC staff is scheduled to provide the draft final rule for its consideration by March 25, 2022.

**Activities Planned and Completed for the Reporting Period (Q1 FY 2022)**

NuScale Small Modular Reactor Design Certification Activities	Projected Completion Date	Completion Date
Public comment period ended for proposed rule for NuScale SMR design certification.	10/14/21	10/14/21 <sup>26</sup>

**Projected Activities for the Next Two Reporting Periods (Q2 and Q3 FY2022)**

Projected NuScale Small Modular Reactor Design Certification Activities	Projected Completion Date
Provide the Commission the draft final rule for its consideration.	03/25/22

**2-7 Advanced Nuclear Reactor Technologies**

The NRC continues to make significant progress in preparation for reviewing non-light-water-reactor (non-LWR) designs, consistent with the NRC staff's vision and strategy (ADAMS Accession No. [ML16356A670](#)) and implementation action plans to achieve non-LWR safety review readiness.<sup>27</sup> During this reporting period, the NRC staff issued several draft guidance documents. The staff also continued its extensive stakeholder engagement, including holding

<sup>26</sup> In the last report, this was erroneously reported as a projected activity, even though it was already completed.

<sup>27</sup> The NRC's public Web site lists the implementation action plans and is updated periodically to show the status of these activities (<https://www.nrc.gov/reactors/new-reactors/advanced/details.html#visStrat>).



several public meetings and workshops regarding various advanced reactor topics, development of the 10 CFR Part 53 proposed rule, and development of guidance for the content of advanced reactor licensing applications. Additionally, the staff provided to the Commission for its consideration the draft Advanced Nuclear Reactors Generic Environmental Impact Statement and draft proposed rule that would codify the generic findings of the Generic Environmental Impact Statement (ADAMS Accession No. [ML21222A053](#)), as well as the draft final rule on emergency preparedness requirements for SMRs and other new technologies (ADAMS Accession No. [ML21200A059](#)).

In addition, the NRC staff continues to release for public comment various subparts for the 10 CFR Part 53 preliminary proposed rule, including technical, licensing, and administrative requirements on an iterative basis. During the reporting period, the NRC staff released additional sections of the preliminary proposed rule language for 10 CFR Part 53 (ADAMS Accession Nos. [ML21267A006](#), [ML21267A004](#), [ML21348A123](#), [ML21148A173](#), [ML21270A005](#), [ML21308A028](#), [ML21308A026](#), and [ML21319A135](#)). The NRC staff discussed portions of the released preliminary proposed rule language with stakeholders during public meetings on October 26 and October 28, 2021 (ADAMS Accession Nos. [ML21288A403](#) and [ML21288A407](#)). The NRC staff briefed the Advisory Committee on Reactor Safeguards (ACRS) on topics related to the Part 53 preliminary proposed rule on November 18 and December 16-17, 2021. Details of these ACRS meetings can be found on the NRC's public Web site (<https://www.nrc.gov/reading-rm/doc-collections/acrs/agenda/index.html>).

In October 2021, the NRC staff requested a 9-month extension to the current schedule for the Part 53 rulemaking. The NRC staff requested the extension based on consideration of stakeholder requests for an option for a more traditional, deterministic licensing framework for advanced reactors. In addition, the NRC staff recognized that more time would support further engagement with stakeholders, as well the ACRS, before sending a draft proposed rule to the Commission. The Commission approved the NRC staff's extension request. The NRC staff now anticipates providing the Commission the Part 53 draft proposed rule package by February 2023 and the draft final rule package, including key guidance, to the Commission by December 2024. The NRC staff is expecting to issue the final rule by July 2025. Further details about the staff's basis for the schedule extension can be found on the NRC's public Web site (<https://www.nrc.gov/reactors/new-reactors/advanced/rulemaking-and-guidance/part-53.html>).

The NRC holds periodic stakeholder meetings to discuss non-LWR topics of interest. A list of the meetings that the NRC has conducted to date can be found on the NRC's public Web site (<https://www.nrc.gov/reactors/new-reactors/advanced/details.html#stakeholder>). The NRC also holds frequent public meetings regarding the Advanced Reactor Content of Application Project (ARCAP). A list of these meetings and related preliminary draft guidance documents to support the meetings can be found on the NRC's public Web site (<https://www.nrc.gov/reactors/new-reactors/advanced/details.html#advRxContentAppProj>).

Additionally, the NRC staff is preparing, through early interactions with reactor designers, to review specific advanced reactor designs. These pre-application interactions provide predictability in the licensing process through early identification and resolution of technical and policy issues that could affect licensing. Information on the reactor designers that have formally notified the NRC of their intent to engage in regulatory interactions can be found on the NRC's public Web site (<https://www.nrc.gov/reactors/new-reactors/advanced/ongoing-licensing-activities/pre-application-activities.html>).

Activities Planned and Completed for the Reporting Period (Q1 FY 2022)

Advanced Nuclear Reactor Technologies Activities	Projected Completion Date	Completion Date
Made public a preliminary draft version of RG 1.247 on the acceptability of non-LWR probabilistic risk assessments and presented it to the ACRS (ADAMS Accession No. <a href="#">ML21246A216</a> ).	12/31/21	10/05/21. <sup>28</sup>
Issuance of a scalable human factors engineering technical review strategy report by Brookhaven National Laboratory under contract with the NRC (ADAMS Accession No. <a href="#">ML21287A088</a> ).	10/31/21	10/12/21
Issued several draft white papers on specific chapters or topics of information to be included in an advanced reactor application to support the ARCAP (ADAMS Accession Nos. <a href="#">ML21294A266</a> and <a href="#">ML21309A020</a> ). <sup>29</sup>	10/31/21	10/21/21, 11/04/21. <sup>30</sup>
Issued final safety evaluation for Kairos' topical report on quality assurance (ADAMS Accession No. <a href="#">ML21308A599</a> ).	11/30/21	11/12/21
Submitted draft Advanced Nuclear Reactors Generic Environmental Impact Statement and associated draft proposed rule to the Commission for its consideration (ADAMS Package No. <a href="#">ML21222A044</a> ).	11/30/21	11/29/21
Issued an updated draft white paper regarding use of the industry-led Technology-inclusive Content of Application Project (TICAP) guidance to inform specific portions of the safety analysis report included as part of an advanced reactor license application (ADAMS Accession No. <a href="#">ML21336A697</a> ).	10/31/21	12/02/21. <sup>31</sup>
Issued an updated draft white paper on ARCAP guidance regarding the content of an advanced reactor application and a roadmap to support NRC	10/31/21	12/02/21. <sup>32</sup>

<sup>28</sup> The original activity to publish the "trial use" RG 1.247 was projected to be completed by December 31, 2021. The activity shown here indicates that a preliminary draft version was made publicly available. Final publishing of the draft RG was delayed in order to incorporate stakeholder feedback.

<sup>29</sup> The NRC's public Web site (<https://www.nrc.gov/reactors/new-reactors/advanced/details.html#advRxContentAppProj>) provides a complete listing of the draft white papers that the staff has issued to date as well as industry guidance documents. The listing of these draft documents provides a reference that is used to support stakeholder interactions during public meetings on the topic.

<sup>30</sup> Issuance delayed from the previous projected date of October 31, 2021, to provide additional time for the staff to incorporate concepts into these documents based on stakeholder interactions at public meetings in October and November. Additional future updates to these draft white papers prior to issuance for formal public comment are possible.

<sup>31</sup> Issuance delayed from the previous projected date of October 31, 2021, to provide additional time for the staff to incorporate concepts into these documents based on stakeholder interactions at public meetings in October and November. Additional future updates to these draft white papers prior to issuance for formal public comment are possible.

<sup>32</sup> Issuance delayed from the previous projected date of October 31, 2021, to provide additional time for the staff to incorporate concepts into these documents based on stakeholder interactions at public meetings in October and November. Additional future updates to these draft white papers prior to issuance for formal public comment are possible.

<b>Advanced Nuclear Reactor Technologies Activities</b>	<b>Projected Completion Date</b>	<b>Completion Date</b>
staff review (ADAMS Accession No. <a href="#">ML21336A702</a> ).		
Released preliminary proposed rule language for 10 CFR Part 53 technical requirements (ADAMS Accession Nos. <a href="#">ML21267A004</a> , <a href="#">ML21270A005</a> , <a href="#">ML21267A006</a> , <a href="#">ML21148A173</a> , and <a href="#">ML21348A123</a> ).	10/31/21	10/15/21, 12/21/21, 12/29/21 <sup>33</sup>
Submit a paper to the Commission providing the Emergency Preparedness Requirements for Small Modular Reactors and Other New Technologies draft final rule for its consideration (ADAMS Accession No. <a href="#">ML21200A055</a> ).	12/30/21	01/03/22
Issuance of a report by the Center for Nuclear Waste Regulatory Analyses under contract with NRC addressing information gaps and potential information needs associated with transportation and storage of fresh and spent advanced reactor fuel types (ADAMS Accession No. <a href="#">ML21349A914</a> ).	03/31/22	12/15/21

Projected Activities for the Next Two Reporting Periods (Q2 and Q3 FY 2022)

<b>Projected Advanced Nuclear Reactor Technologies Activities</b>	<b>Projected Completion Date</b>
Issue final safety evaluation to Abilene Christian University for its topical report on quality assurance program description.	01/31/22 <sup>34</sup>
Release consolidated preliminary proposed rule language for 10 CFR Part 53.	01/31/22
Issue annual paper to the Commission on the status of advanced reactor readiness activities	02/28/22
Issue final safety evaluation to TerraPower for its topical report on quality assurance program description.	02/28/22 <sup>35</sup>
Publish final NUREG-2246, "Fuel Qualification for Advanced Reactors," with fuel qualification methodology to provide guidance for non-LWR developers on qualification of fuel under the Nuclear Energy Innovation and Modernization Act.	02/28/22
Issue NRC staff technical letter report documenting the technical basis regarding potential endorsement of American Society of Mechanical Engineers (ASME) Section III, Division 5 Code Cases N-872 and N-898 for Alloy 617.	02/28/22

<sup>33</sup> This activity was previously projected for completion by October 31, 2021, but consistent with the Commission approved 9-month schedule extension for the Part 53 rulemaking, additional time was needed to develop the first iteration of preliminary proposed rule language for fitness for duty and decommissioning requirements. Release of the preliminary proposed rule language for decommissioning requirements completed the initial release for all 10 CFR Part 53 technical requirements. The NRC staff expects to release consolidated preliminary proposed rule language for 10 CFR Part 53 in the next quarter (Q2 FY 2022) and will continue to release preliminary proposed rule language on an iterative basis.

<sup>34</sup> The projected completion date was changed from October 28, 2021, to January 31, 2022, to provide additional time for internal review.

<sup>35</sup> The projected completion date was changed from December 31, 2021, to provide additional time for internal review.

Projected Advanced Nuclear Reactor Technologies Activities	Projected Completion Date
Issue final safety evaluation to Kairos for its topical report on regulatory analysis.	03/31/22 <sup>36</sup>
Issue final safety evaluation to Kairos for its topical report on metallic material qualification program.	03/31/22
Issue final safety evaluation to Kairos for its topical report on mechanistic source term.	03/31/22
Issue final safety evaluation to Kairos for its topical report on fuel performance methodology.	03/31/22
Issue final safety evaluation to Kairos for its topical report on fuel qualification methodology.	03/31/22
Publish trial use RG 1.247 for potential endorsement of the ASME/American Nuclear Society standard on non-LWR probabilistic risk assessments.	03/31/22
Publish Revision 1 to draft Regulatory Guide DG-1380 for potential endorsement of ASME Section III, Division 5 Code Cases N-872 and N-898 for Alloy 617.	03/31/22
Submit draft proposed rule providing the alternative physical security requirements for advanced reactors to the Commission for its consideration.	06/28/22
Publish the final RG (RG 1.246) for potential endorsement of the ASME Boiler and Pressure Vessel Code Section XI, Division 2, Reliability and Integrity Management standard.	06/30/22

## 2-8 Advanced Reactor Licensing Reviews<sup>37</sup>

### Oklo Aurora Custom COL Application Review

Oklo Inc. (Oklo) submitted a custom COL application<sup>38</sup> for the Aurora advanced reactor design on March 11, 2020 (ADAMS Package No. [ML20075A000](#)). The NRC staff planned to complete the review of the Oklo COL application using an innovative two-step process (ADAMS Accession No. [ML20149K616](#)). On November 17, 2020, the NRC staff issued a letter to Oklo (ADAMS Accession No. [ML20308A677](#)), extending the Step 1 review schedule in the areas of maximum credible accident methodology, safety classification of structures, systems, and components (SSCs), and scope of the quality assurance program. Because Oklo's quality assurance program is closely tied to its safety classification of SSCs, these issues were combined and were no longer tracked separately. In the letter, the NRC staff stated that Oklo's responses to requests for additional information (RAIs), audit documents, and audit discussions enhanced the staff's understanding of Oklo's novel approach to the Aurora safety case but did not provide sufficient information to define the scope of the full Step 2 technical review. The NRC staff completed its review of one of the key aspects of the licensing basis, the applicability of regulations, and issued a letter documenting Step 1 closure on this topic on November 17,

<sup>36</sup> This activity was previously projected for completion by December 31, 2021, but additional time is needed because the vendor has decided to submit a revision to the topical report.

<sup>37</sup> This section was previously titled "Oklo Power LLC Combined License Application for the Aurora Compact Fast Reactor." It is being broadened to allow for a more thorough discussion of the status of advanced reactor application reviews. Applications will be added to this section once they are accepted by the NRC.

<sup>38</sup> A custom COL application provides both the design information that would be provided by a certified design and the site-specific information provided with a COL application.

2020 (ADAMS Accession No. [ML20300A593](#)). To close the Step 1 review, Oklo proposed to leverage two topical reports, “Maximum Credible Accident Methodology” and “Performance-Based Licensing Methodology,” to support the staff’s review of methodologies for the maximum credible accident and classification of SSCs. Oklo submitted the topical reports on July 2, 2021 (Letter Submitting the Reports (ADAMS Accession No. [ML21184A001](#)), Topical Report on Maximum Credible Accident Methodology (ADAMS Accession No. [ML21184A002](#)), and Topical Report on Performance-Based Licensing Methodology (ADAMS Accession No. [ML21187A001](#))). The NRC staff performed threshold reviews of the topical reports and determined that they lacked sufficient information to initiate the detailed technical reviews. On August 5, 2021, the staff provided Oklo written descriptions of the needed supplemental information and requested that Oklo submit it within 60 days (ADAMS Package Nos. [ML21201A010](#) and [ML21201A104](#)). On October 5, 2021, Oklo submitted a revision to the “Maximum Credible Accident Methodology” topical report (ADAMS Accession Nos. [ML21278B097](#) and [ML21278B098](#)). On October 19, 2021, Oklo submitted a revision to the “Performance-Based Licensing Methodology” topical report (ADAMS Accession Nos. [ML21292A326](#) and [ML21292A327](#)). The NRC staff performed subsequent threshold reviews of the revised topical reports and supplemental information and found that Oklo had not provided sufficient technical information to resolve the previously identified deficiencies in the topical reports or to respond to specific questions in the RAIs. The topical reports lacked sufficient information in key areas necessary for the NRC staff to determine whether the methodologies will support regulatory findings of reasonable assurance of adequate protection of public health and safety. On January 6, 2022, the staff notified Oklo that the topical reports did not contain sufficiently complete information for the NRC staff to initiate detailed technical reviews (ADAMS Accession No. [ML21307A108](#)). Also, on January 6, 2022, the staff ended its review of the Oklo COL application and denied the COL application, without prejudice (ADAMS Accession No. [ML21357A034](#)), based on Oklo’s failure on a number of occasions to provide necessary technical information to support developing a review schedule or reaching findings on the safety of the facility that the NRC must make before issuing a license.

The NRC staff held periodic public meetings to discuss the review of the COL application for the Oklo Aurora design. A list of the meetings can be found on the NRC’s public Web site (<https://www.nrc.gov/reactors/new-reactors/col/aurora-oklo/public-meetings.html>).

Because the staff denied this COL application, this project will no longer be included in this report as an ongoing advanced reactor licensing action.

#### Kairos Hermes Construction Permit Application Review

Kairos Power LLC (Kairos) submitted an application for a construction permit for the Kairos Power Fluoride Salt-Cooled, High Temperature Non-Power Reactor (Hermes). Kairos submitted applications documents to the NRC by letters dated September 29, 2021 (submitting the Preliminary Safety Analysis Report) (ADAMS Package No. [ML21272A375](#)) and October 31, 2021 (submitting the Environmental Report) (ADAMS Accession No. [ML21306A131](#)).

The NRC staff performed an acceptance review of the Hermes construction permit application and docketed the application on November 29, 2021 (ADAMS Accession No. [ML21319A354](#)). On December 15, 2021, the staff issued a letter to Kairos (ADAMS Accession No. [ML21343A214](#)) providing the schedule and resource estimates for the review. The NRC staff is currently conducting a detailed technical review of the safety of the Hermes design which will lead to a safety evaluation report. The NRC staff is also conducting a review of the effects of Hermes design on the environment and will document the review in a draft environmental

impact statement. Application documents and information on the review are available on the NRC’s public Web site (<https://www.nrc.gov/reactors/non-power/hermes-kairos.html>).

Activities Planned and Completed for the Reporting Period (Q1 FY 2022)

<b>Advanced Reactor Licensing Review Activities</b>	<b>Projected Completion Date</b>	<b>Completion Date</b>
Completed acceptance review of the Kairos Hermes construction permit application (ADAMS Accession No. <a href="#">ML21319A354</a> ).	N/A <sup>39</sup>	11/29/21
Issued letter to Kairos providing the schedule and resource estimate for the review of the Hermes construction permit application (ADAMS Accession No. <a href="#">ML21343A214</a> ).	N/A <sup>40</sup>	12/15/21
Completed acceptance review of two Oklo topical reports submitted in July 2021 and revised in October 2021 (ADAMS Package Nos. <a href="#">ML21201A010</a> and <a href="#">ML21201A104</a> ).	01/10/22	01/06/22 <sup>41</sup>

Projected Activities for the Next Two Reporting Periods (Q2 and Q3 FY 2022)

<b>Projected Advanced Reactor Licensing Review Activities</b>	<b>Projected Completion Date</b>
Complete draft safety evaluation report for the Kairos Hermes construction permit application.	2/28/22
Identify if any need for additional information on the Kairos Hermes construction permit application, prepare RAIs, and issue RAIs to Kairos.	TBD depending on need

## 2-9 Reactor Oversight Process

The Reactor Oversight Process (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” (ADAMS Accession No. [ML18144A567](#)), and SECY-19-0067, “Recommendations for Enhancing the Reactor Oversight Process” (ADAMS Accession No. [ML19070A050](#)). The staff requested to withdraw these papers, and on August 5, 2021, the Commission approved the staff’s proposed withdrawal. The staff intends to evaluate the basis for the previous recommendations in light of new information and is engaging internal and external stakeholders, including regional inspection staff, members of the public, and the nuclear industry, on these and any other proposed changes to the ROP, as appropriate. The staff also continues to assess and improve the ROP as part of its normal work practices through the NRC’s transformation activities, stakeholder correspondence, feedback from ROP public meetings, and the ROP self-assessment program. Significant changes to the ROP will be submitted to the Commission for either approval or notification in accordance with Management Directive 8.13, “Reactor Oversight Process.”

<sup>39</sup> This activity was not previously reported due to the expansion of this section.

<sup>40</sup> This activity was not previously reported due to the expansion of this section.

<sup>41</sup> The projected completion date was changed from November 30, 2021 to provide additional time for internal review.

Activities Planned and Completed for the Reporting Period (Q1 FY 2022)

Reactor Oversight Process Activities	Projected Completion Date	Completion Date
Completed Comprehensive Baseline Inspection Program Review focused on lessons learned from the COVID-19 public health emergency and issued report (ADAMS Accession No. <a href="#">ML21252A154</a> ).	10/31/21	11/05/21. <sup>42</sup>

Projected Activities for the Next Two Reporting Periods (Q2 and Q3 FY 2022)

Projected Reactor Oversight Process Activities	Projected Completion Date
Complete CY 2021 ROP Self-Assessment and send information paper to the Commission.	04/15/22

## 2-10 Backfit

The NRC’s backfitting rules are codified in 10 CFR 50.109, 70.76, 72.62, and 76.76. The backfitting rules define backfitting “as the modification of or addition to systems, structures, components, or design of a facility; or the design approval or manufacturing license for a facility; or the procedures or organization required to design, construct or operate a facility; any of which may result from a new or amended provision in the Commission’s regulations or the imposition of a regulatory staff position interpreting the Commission’s regulations that is either new or different from a previously applicable staff position....”<sup>43</sup> The rules require, in the absence of an applicable exception, an analysis showing that the backfit would result in a substantial increase in the overall protection of the public health and safety or the common defense and security and that the increased protection warrants the direct and indirect costs of implementation. There are similar requirements, referred to as “issue finality,” that apply when there are new or amended requirements for licenses, permits, and design approvals and certifications issued under 10 CFR Part 52.

The Commission changed its backfitting and issue finality policy as well as its policy on “forward fits,” which it defined as requirements or staff interpretations of requirements imposed as a condition of agency approval of a licensee request that result in the modification of or addition to systems, structures, components, or design of a facility, in NRC Management Directive 8.4, “Management of Backfitting, Forward Fitting, Issue Finality, and Information Requests” (ADAMS Accession No. [ML18093B087](#)). The NRC completed draft NUREG-1409, “Backfitting Guidelines,” Revision 1, in March 2020 and issued a notice of availability in the *FR* for public comment (ADAMS Accession No. [ML18109A498](#)). This revision would provide additional guidance for the NRC staff on how to implement the Commission’s backfitting and issue finality regulations and policies and forward fitting policy, including how to process violations that are contested based on claims of unjustified backfitting. The NRC received approximately 250 individual comments from members of the public, licensees, and industry representatives. The NRC staff evaluated the comments, updated the draft NUREG, and provided the Commission with the staff’s proposed NUREG-1409, Revision 1 (Final Report) (ADAMS Package

<sup>42</sup> The projected completion date was changed from October 31, 2021, to November 5, 2021, to provide additional time for internal review.

<sup>43</sup> 10 CFR 50.109(a)(1). Substantially similar definitions are provided in § 70.76, “Backfitting,” § 72.62, “Backfitting,” and § 76.76, “Backfitting,” for non-reactor facilities.

No. [ML21006A431](#)). This revised document is currently before the Commission for its consideration.

**Activities Planned and Completed for the Reporting Period (Q1 FY 2022)**

<b>Backfit Activities</b>	<b>Projected Completion Date</b>	<b>Completion Date</b>
Completed determination (ADAMS Accession No. <a href="#">ML21064A350</a> ) that a proposed technical specification, pertaining to degraded voltage protection at the Oconee Nuclear Station, is not required under 10 CFR 50.36(c)(3), in accordance with the NRC's backfit rule (ADAMS Accession No. <a href="#">ML21047A241</a> ). <sup>44</sup>	07/31/21	07/26/21

**Projected Activities for the Next Two Reporting Periods (Q2 and Q3 FY 2022)**

<b>Projected Backfit Activities</b>	<b>Projected Completion Date</b>
Publish proposed rule that contains a proposed change to NRC regulations that would constitute backfitting if issued as a final rule: Regulatory Improvements for Production and Utilization Facilities Transitioning to Decommissioning (ADAMS Package No. <a href="#">ML21307A046</a> ).	03/04/22

**2-11 Risk-informed Activities**

The NRC staff continues to make progress to advance the use of risk insights more broadly to inform decision-making. There are numerous activities ranging in scope from agencywide initiatives, such as the “Be riskSMART” initiative, which is part of the transformation efforts discussed in section 2-1, to the advanced reactor risk-informed activities listed in section 2-7, to individual undertakings in program and corporate offices.<sup>45</sup> The NRC staff continues to implement and track the use of the agencywide Be riskSMART risk-informed decision making framework to inform a broad range of decisions spanning technical, legal, and corporate arenas. For example, the NRC staff continues to review and approve applications to adopt advanced risk management programs such as 10 CFR 50.69, “Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors” and Risk-Informed Technical Specifications Initiative 4b,<sup>46</sup> that provide for operational flexibilities that enhance safety by ensuring that power reactor licensees and the NRC prioritize the most risk significant issues.

<sup>44</sup> This activity was previously reported as completed for development of a recommendation. This should have been reported as completion of a determination and therefore is being included again for correction.

<sup>45</sup> The NRC maintains a listing of risk-informed activities that is updated annually at <https://www.nrc.gov/about-nrc/regulatory/risk-informed/rpp.html>.

<sup>46</sup> A description of these and other operating reactors risk-informed initiatives is available at <https://www.nrc.gov/about-nrc/regulatory/risk-informed/rpp/reactor-safety-operating.html>. To date, the NRC has approved 24 and 17 applications enabling licensees to adopt 10 CFR 50.69 and Risk-Informed Technical Specifications Initiative 4b, respectively.



Activities Planned and Completed for the Reporting Period (Q1 FY 2022)

Risk-Informed Activities	Projected Completion Date	Completion Date
Completed the license termination process for General Atomics TRIGA Mark I and Mark F non-power research reactors, License No. R-38 and License No. R-67, respectively (ADAMS Accession No. <a href="#">ML21281A171</a> ).	12/31/21	12/07/21
Completed participation in an expert panel exercise to characterize the safety impacts of spent fuel cladding gross ruptures. The Phenomena Identification and Ranking Table panel report, published by the Electric Power Research Institute (EPRI), will provide the technical basis for engagements with external stakeholders to identify operational and licensing efficiencies for spent fuel storage systems.	09/30/21	12/22/21 <sup>47</sup>

Projected Activities for the Next Two Reporting Periods (Q2 and Q3 FY 2022)

Projected Risk-Informed Activities	Projected Completion Date
Complete pilot program of risk tool to risk-inform technical reviews for spent fuel dry storage (ADAMS Accession No. <a href="#">ML20318A269</a> ).	01/31/22 <sup>48</sup>
Complete the acceptance review for the first-of-a-kind Risk-informed Process for Evaluations (RIPE) submittal regarding the diverse auxiliary feedwater actuation system for Palo Verde Nuclear Generating Station.	02/04/22
Complete report summarizing the Office of Nuclear Reactor Regulation (NRR) activities regarding the use of risk-informed decision-making (RIDM) for licensing reviews. The report will detail NRR's efforts to increase the use of RIDM and will provide recommendations on how to proceed into the next phase of realizing NRR's goal to enhance process efficiency and effectiveness.	02/28/22 <sup>49</sup>
Complete the revision of 10 materials inspection procedures (IPs) associated with Inspection Manual Chapter 2800. The NRC staff developed risk modules in each IP, with each module focusing on the risks of the relevant types of radioactive materials and their usage.	03/31/22 <sup>50</sup>
Develop guidance for use of RIPE in Technical Specification LARs.	06/30/22

## 2-12 Coronavirus Disease (COVID-19) Pandemic

<sup>47</sup> This activity was erroneously listed as completed in the previous report. While the panel was completed, the report was not issued until December 22, 2021. The report is available on EPRI's Web site:

<https://www.epri.com/research/products/000000003002020929>.

<sup>48</sup> The projected completion date was changed from December 31, 2021, to January 31, 2022, because additional time is needed to consider feedback from risk tool users for the next steps of development.

<sup>49</sup> The projected completion date was changed from December 31, 2021, to February 28, 2022, because additional time is needed for the staff to finalize the recommendations in the report on the next phase of enhancing RIDM process efficiency and effectiveness.

<sup>50</sup> The projected completion date was changed from December 31, 2021, to March 31, 2022, to allow for additional time to address stakeholder comments and revisions.

The NRC COVID-19 Coordination Team (including a COVID-19 Task Force and Working Group) continues to develop and implement precautionary measures in response to the pandemic to help protect the health and safety of our workforce consistent with guidance provided by the Federal Government, including the Centers for Disease Control and Prevention (CDC), as well as considerations of State and local conditions around NRC facilities. In addition, the NRC continues to protect public health and safety and the environment. The NRC is monitoring the effects of the COVID-19 pandemic on NRC-licensed activities as well as actions taken in response to State, local, and site-specific conditions. The NRC is poised to take additional steps as warranted.

### NRC Re-Occupancy of Facilities

During this reporting period, the NRC executed its re-entry plans on November 7, 2021 and shifted to a hybrid environment at all locations, combining telework and in-office staff presence. Coinciding with re-entry, the NRC staff issued updated guidance for implementation of inspection programs following re-entry (ADAMS Accession No. [ML21295A302](#)). The agency continues to closely monitor guidance from the Federal Government's Safer Federal Workforce Taskforce, the CDC, and the Occupational Safety and Health Administration to facilitate a healthy and safe physical workspace. The NRC has been proactive in responding as circumstances warrant. Namely the agency recently decided in response to the omicron variant to allow employees maximum flexibilities to telework through February 26, 2022.

### Licensing and Oversight Items of Interest

The NRC staff has taken steps to identify areas of our regulations that are challenging during the pandemic, and the areas where temporary flexibilities, such as exemptions, would not compromise the ability of licensees to maintain the safe and secure operation of NRC-licensed facilities. The NRC staff continues to communicate the processes available to licensees for requesting these flexibilities in a transparent way through public communications, such as teleconferences, webcasts, and letters. In addition, these processes and the approved flexibilities are posted and updated on the NRC public Web site (<https://www.nrc.gov/about-nrc/covid-19/>).

The NRC has also developed portions of its Web site devoted to the regulatory activities taken in response to the COVID-19 pandemic. Specific posts related to [nuclear power plant licensees](#), [nuclear materials licensees](#), and [security and emergency preparedness](#) have been developed to keep the public informed on how the NRC is adapting its regulatory approach during the pandemic. Between October 1 and December 30, 2021, the NRC approved ten licensing actions granting temporary flexibilities to maintain the safe and secure operation of nuclear reactor and nuclear materials licensees. A complete list of licensing requests approved by the NRC in response to the COVID-19 pandemic is available on the NRC public Web site at <https://www.nrc.gov/about-nrc/covid-19/>.

Regulatory Activities Taken in Response to the COVID-19 Pandemic During the Reporting Period

<b>Licensee Type</b>	<b>Number of COVID-19 Requests Approved During the Reporting Period</b>	<b>Average Number of Days to Review COVID-19 Requests<sup>51</sup></b>
Power Reactor	3	10
Non-Power Reactor	0	N/A
Other (e.g., topical reports)	0	N/A
Decommissioning of Nuclear Facilities and Uranium Recovery	0	N/A
Storage and Transportation of Spent Nuclear Fuel	0	N/A
Fuel Cycle Facilities	6	20
Medical, Industrial and Academic Uses of Nuclear Materials and Agreement States	1	14

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<sup>51</sup> This average is calculated based on the dates the request is received and the review is completed; review time may be longer in cases where a supplement to a request is received after the initial submission date.

## Enclosure 3 – Summary of Activities

### 3-1 Reactor Oversight Process Findings

The table below provides the calendar year (CY) Reactor Oversight Process (ROP) findings for the year-to-date (YTD) and 3-year rolling metrics.

Location	Number of Findings	CY 2018	CY 2019	CY 2020	CY2021
<b>Nationally</b>	<b>Total</b>	478	440	291	269 <sup>52</sup>
<b>Region I</b>	<b>Green</b>	107	95	50	58
	White	1	0	0	1
	<b>Yellow</b>	0	0	0	0
	<b>Red</b>	0	0	0	0
	Greater Than Green Security	0	0	0	0
	<b>Total</b>	<b>108</b>	<b>95</b>	<b>50</b>	<b>59</b>
	No. of Units Operating During CY	25	24	21 <sup>53</sup>	21
<b>Region II</b>	<b>Green</b>	113	110	77	66
	White	0	1	2	0
	<b>Yellow</b>	0	0	0	0
	<b>Red</b>	0	0	0	0
	Greater Than Green Security	0	0	1	0
	<b>Total</b>	<b>113</b>	<b>111</b>	<b>80</b>	<b>66</b>
	No. of Units Operating During CY	33	33	33	33
<b>Region III</b>	<b>Green</b>	110	96	51	64
	White	2	1	0	0
	<b>Yellow</b>	0	0	0	0
	<b>Red</b>	0	0	0	0
	Greater Than Green Security	0	0	0	1
	<b>Total</b>	<b>112</b>	<b>97</b>	<b>51</b>	<b>65</b>

<sup>52</sup> The inspection reports for the fourth quarter of CY 2021 will continue to be finalized through February 15, 2022. The report for the next reporting period will be updated to include any additional findings from the fourth quarter of CY 2021.

<sup>53</sup> The reduction of three units for CY 2020 reflects the permanent shutdown of Pilgrim Nuclear Station on May 31, 2019; Three Mile Island, Unit 1, on September 20, 2019; and Indian Point Nuclear Generating Unit 2 on April 30, 2020.

Location	Number of Findings	CY 2018	CY 2019	CY 2020	CY2021
	No. of Units Operating During CY	23	23	22 <sup>54</sup>	22
Region IV	Green	145	137	110	79
	White	0	0	0	0
	Yellow	0	0	0	0
	Red	0	0	0	0
	Greater Than Green Security	0	0	0	0
	<b>Total</b>	<b>145</b>	<b>137</b>	<b>110</b>	<b>79</b>
	No. of Units Operating During CY	18	18	18	18

### 3-2 Licensing Actions

The tables below provide the status of licensing actions organized by licensing program. Consistent with Section 102(c) of NEIMA, the licensing actions referenced in this section include “requested activities of the Commission” for which the U.S. Nuclear Regulatory Commission (NRC) staff issues a final safety evaluation. These totals do not include license amendment requests (LARs), as they are addressed separately in section 3-3. “Total Inventory” refers to the total number of licensing actions that are open and accepted by the NRC at the end of the quarter. “Licensing Actions Initiated During the Reporting Period” are the number of licensing actions (regardless of acceptance) that are received by the NRC during the reporting period.

#### Operating Reactors

Reporting Period	Total Inventory	Licensing Actions Initiated During the Reporting Period	Licensing Actions Completed During the Reporting Period	Percentage of Licensing Actions Completed Prior to the Generic Milestone Schedule <sup>55</sup>	Percentage of Licensing Actions Completed Prior to the Established Schedule <sup>56</sup>
Q2 FY 2021	264	135	105	100%	96%
Q3 FY 2021	223	58	76	100%	100%
Q4 FY 2021	207	83	95	100%	94%
Q1 FY 2022	132	33	107	100%	94%

<sup>54</sup> The reduction of one unit for CY 2020 reflects the permanent shutdown of Duane Arnold on August 10, 2020.

<sup>55</sup> Consistent with previous reports, this excludes unusually complex and Fukushima-related licensing actions accepted or initiated prior to July 13, 2019.

<sup>56</sup> The “established schedule” is the schedule communicated to the licensee and made publicly available at the completion of the acceptance review.

### New Reactors

Reporting Period	Total Inventory	Licensing Actions Initiated During the Reporting Period	Licensing Actions Completed During the Reporting Period	Percentage of Licensing Actions Completed Prior to the Generic Milestone Schedule	Percentage of Licensing Actions Completed Prior to the Established Schedule
Q2 FY 2021	2	0	0	N/A	N/A
Q3 FY 2021	2	1	1	100%	100%
Q4 FY 2021	2	1	1	100%	100%
Q1 FY 2022	2	3	3	100%	100%

### Fuel Facilities

Reporting Period	Total Inventory	Licensing Actions Initiated During the Reporting Period	Licensing Actions Completed During the Reporting Period	Percentage of Licensing Actions Completed Prior to the Generic Milestone Schedule	Percentage of Licensing Actions Completed Prior to the Established Schedule
Q2 FY 2021	2	4	4	100%	75% <sup>57</sup>
Q3 FY 2021	4	3	1	100%	100%
Q4 FY 2021	4	3	3	100%	0% <sup>58</sup>
Q1 FY 2022	2	11	13	100%	92% <sup>59</sup>

### 3-3 Licensing Amendment Request Reviews

The tables below provide the status of LARs organized by licensing program. Consistent with Section 102(c) of NEIMA,<sup>60</sup> the LARs referenced in this section include “requested activities of the Commission” for which the NRC staff issue a final safety evaluation. The total inventory is the number of open LARs at the end of the quarter. LARs are included in the total inventory after they have been accepted by the NRC (the acceptance review period is generally 30 days after the application is submitted).

<sup>57</sup> One licensing action was complex, which resulted in it exceeding the established schedule by 27 days. The licensing action was completed within the generic milestone schedule.

<sup>58</sup> One licensing action was complex; the other three actions were completed within 13 days of the established schedule. All the licensing actions were completed within the generic milestone schedule.

<sup>59</sup> One licensing action was complex due to security issues, which resulted in it exceeding the established schedule by 17 days.

<sup>60</sup> Consistent with Section 102(c) of NEIMA, the NRC is focusing this section on the total inventory of LARs and will not be providing separate information on unusually complex LARs in this report and future reports. Should data on unusually complex LARs be available, it would instead be incorporated into the existing section 3-3 tables.

### Operating Reactors

Reporting Period	Total Inventory	LARs Submitted During the Reporting Period	LAR Reviews Completed During the Reporting Period	Percentage of LAR Reviews Completed Prior to the Generic Milestone Schedule <sup>61</sup>	Percentage of LAR Reviews Completed Prior to the Established Schedule <sup>62</sup>
Q2 FY 2021	276	36	107	100%	90%
Q3 FY 2021	286	103	82	100%	98% <sup>63</sup>
Q4 FY 2021	293	106	102	100%	91%
Q1 FY 2022	317	105	81	99%	95% <sup>64</sup>

### New Reactors

Reporting Period	Total Inventory	LARs Submitted During the Reporting Period	LAR Reviews Completed During the Reporting Period	Percentage of LAR Reviews Completed Prior to the Generic Milestone Schedule	Percentage of LAR Reviews Completed Prior to the Established Schedule
Q2 FY 2021	1	0	0	N/A	N/A
Q3 FY 2021	1	0	0	N/A	N/A
Q4 FY 2021	1	1	1	100%	100%
Q1 FY 2022	0	0	1	100%	100%

<sup>61</sup> Consistent with previous reports, this excludes unusually complex and Fukushima-related LARs accepted or initiated prior to July 13, 2019.

<sup>62</sup> The “established schedule” is the schedule communicated to the licensee and made publicly available at the completion of the acceptance review.

<sup>63</sup> One review of an LAR exceeded the established schedule by 180 days, due to the NRC staff identifying an issue that resulted in the licensee submitting a supplement that changed the scope of the request. Given the change in scope, a supplemental *Federal Register* Notice was published, providing for a new 30-day public comment period and a 60-day opportunity to request a hearing. The staff completed its review in September 2021.

<sup>64</sup> One review of an LAR that proposed a first-of-a-kind design exceeded the established schedule by 180 days. The NRC staff identified an issue that resulted in the licensee submitting an update that expanded the licensee’s proposed submission and extended the staff’s review. The staff’s evaluation determined a regulatory audit was necessary to gain additional understanding of the design and identified additional information that required docketing by the licensee to support a staff decision on the LAR. With the efficiencies gained through the audit, the staff expects to complete its review in February 2022.

Fuel Facilities

Reporting Period	Total Inventory	LARs Submitted During the Reporting Period	LAR Reviews Completed During the Reporting Period	Percentage of LAR Reviews Completed Prior to the Generic Milestone Schedule	Percentage of LAR Reviews Completed Prior to the Established Schedule
Q2 FY 2021	10	4	8	100%	75% <sup>65</sup>
Q3 FY 2021	10	8	8	100%	83%
Q4 FY 2021	13	7	4	100%	100%
Q1 FY 2022	5	5	13	100%	100%

**3-4 Research Activities<sup>66</sup>**

Summary of New Research Projects

During the reporting period, the Office of Nuclear Regulatory Research (RES) initiated research on or substantially revised the following projects:

There are no research starts or substantial revisions to report for this period.

<sup>65</sup> Two licensing actions had delayed issuance at the end of the year, which resulted in both items exceeding the established schedule by 2 percent (5 days).

<sup>66</sup> This section provides information about projects that were started or completed during the reporting period that exceeded 300 staff hours or \$500K of program support for the total duration of the project.



Summary of Completed Research Projects<sup>67</sup>

During the reporting period, RES completed the following activities:

<b>Request to Maintain NRC Capabilities to Perform Anticipated Transient Without SCRAM (ATWS) Confirmatory Reviews (NRR-2015-010)</b>	
<b>Importance to the NRC Mission</b>	Maintain NRC confirmatory capabilities to perform safety analysis of anticipated transient without SCRAM for extended reactor operating windows to support licensing reviews.
<b>Research Results or Findings</b>	<p>The research program was requested to conduct an experimental study of fuel heat-up processes that were predicted to occur during ATWS scenarios. Licensees have requested amendments to expand their allowable operating domain to new power and flow conditions. Maximum extended load line limit analysis plus or extended flow window operation can exacerbate the consequences of ATWS events compared to plants operating at lower core power-to-flow ratios.</p> <p>Based on the assessment of the experimental results, a new approach to modeling minimum stable film boiling was adopted in the NRC's TRACE thermal hydraulics code. Minimal stable film boiling is a thermal hydraulic phenomenon. The research produced a new experimental validation database, four peer-reviewed technical publications, a publicly available NUREG report detailing the experiments and findings, and several technical reports detailing the experimental setup, results, preliminary analysis of these results and the TRACE assessment.</p>
<b>Duration of the Project</b>	6 years
<b>Estimate of Total Research Resources</b>	2.5 FTE and \$2.2 M over the 6-year period

<sup>67</sup> The research project resources are estimates of staff hours and program support costs based on inspection of project records, including staffing plans and contract spending plans.

### 3-5 Fees Billed

The tables below provide information on Part 170 fees billed for each fee class. For each fee class, the NRC staff compared the fees billed to the receipts estimated in the annual fee rule.<sup>68</sup>

Fee Class	FY 2021 Part 170 Receipts Estimated – Annual Fee Rule (\$M)	Part 170 Billed in Q1 FY 2022 (\$M)	Total Part 170 – Billed in FY 2022 (\$M)
Fuel Facilities	\$7.4	\$2.3	\$2.3
Generic Decommissioning	\$0.5	\$0.9	\$0.9
Materials Users <sup>69</sup>	\$1.0	\$0.2	\$0.2
Operating Power Reactors	\$157.0	\$44.5	\$44.5
Research and Test Reactors	\$3.7	\$0.7	\$0.7
Spent Fuel Storage / Reactor Decommissioning	\$12.4	\$3.9	\$3.9
Transportation	\$3.6	\$1.0	\$1.0
Uranium Recovery	\$0.3	\$0.2	\$0.2

#### Significant Ongoing Licensing Actions

The following table includes a comparison of the fees billed to projected resources for subsequent license renewal application reviews, Oklo's Aurora COL application review, the SHINE Medical Technologies, LLC (SHINE) operating license application review, and the Kairos Hermes construction permit application review.

Docket	Project Name	Projected Resources (\$M) <sup>70</sup>	Fees Billed to Date (\$M) <sup>71</sup>
Point Beach Units 1 and 2 05000266/05000301	Point Beach Units 1 and 2 Subsequent License Renewal Application — Safety Review	\$5.0 <sup>72</sup>	\$2.3

<sup>68</sup> The FY 2021 Final Fee Rule estimated collections are being used until the FY 2022 Proposed Fee Rule is published. The FY 2021 Final Fee Rule was published on June 16, 2021 (86 FR 32146).

<sup>69</sup> Materials Users—Billed as flat fee applications and included in the estimates and billed.

<sup>70</sup> Projected resources are calculated based on the FTE estimates provided to applicants in the acceptance letters. Dollar amounts are obtained by multiplying the hours estimate by the professional hourly rate.

<sup>71</sup> The NRC bills its licensees/applicants in the first month of the quarter following the timeframe in which the work was performed. For example, NRC work performed in October, November, and December, would be invoiced to the licensee/applicant in January. Therefore, the total billed amounts listed in Table 3-5 reflects costs for NRC work performed through September 2021.

<sup>72</sup> When the formal acceptance letter for the Point Beach subsequent license renewal application was sent to the licensee on January 15, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. [ML21006A417](#)), the NRC estimated that it would take approximately \$6.4M to complete the application review.

Docket	Project Name	Projected Resources (\$M) <sup>70</sup>	Fees Billed to Date (\$M) <sup>71</sup>
Point Beach Units 1 and 2 05000266/05000301	Point Beach Units 1 and 2 Subsequent License Renewal Application — Environmental Review	\$1.4	\$1.0
North Anna Units 1 and 2 05000338/05000339	North Anna Units 1 and 2 Subsequent License Renewal Application — Safety Review	\$5.0 <sup>73</sup>	\$2.9
North Anna Units 1 and 2 05000338/05000339	North Anna Units 1 and 2 Subsequent License Renewal Application — Environmental Review	\$1.4	\$1.2
Oconee Units 1, 2, and 3 05000269/05000270/ 05000287	Oconee Units 1, 2, and 3 Subsequent License Renewal Application — Safety Review	\$5.0 <sup>74</sup>	\$1.4
Oconee Units 1, 2, and 3 05000269/05000270/ 05000287	Oconee Units 1, 2, and 3 Subsequent License Renewal Application — Environmental Review	\$1.4	\$0.2
SHINE Medical Technologies, LLC 05000608	SHINE Medical Isotope Production Facility Operating License Application Review — Safety and Environmental Reviews	\$6.2 <sup>75</sup>	\$4.9
Oklo Aurora 05200049	Oklo Aurora COL Application – Safety and Environmental Reviews <sup>76</sup>	\$0.7 <sup>77</sup>	\$0.5
St. Lucie Units 1 and 2 05000335/05000389	St. Lucie Units 1 and 2 Subsequent License Renewal Application — Safety Review	\$5.0 <sup>78</sup>	\$0.3
St. Lucie Units 1 and 2 05000335/05000389	St. Lucie Units 1 and 2 Subsequent License Renewal Application —	\$1.4	\$0.1

<sup>73</sup> When the formal acceptance letter for the North Anna subsequent license renewal application was sent to the licensee on October 13, 2020 (ADAMS Accession No. [ML20258A284](#)), the NRC estimated that it would take approximately \$6.4M to complete the application review.

<sup>74</sup> When the formal acceptance letter for the Oconee subsequent license renewal application was sent to the licensee on July 22, 2021 (ADAMS Accession No. [ML21194A245](#)), the NRC estimated that it would take approximately \$6.4M to complete the application review.

<sup>75</sup> The projected resource estimate was provided to SHINE by letter dated April 30, 2020 (ADAMS Accession No. [ML20114E315](#)).

<sup>76</sup> In prior reporting periods the fees billed for the Oklo COL Application were attributed to the safety review. These fees encompass both the safety and environmental reviews, as now reflected in the table text.

<sup>77</sup> On January 6, 2022, the NRC staff notified Oklo of its decision to deny the Aurora COL application, without prejudice, (ADAMS Accession No. [ML21357A034](#)). Because the staff denied this COL application, this project will no longer be included in this report as an ongoing licensing action.

<sup>78</sup> When the formal acceptance letter for the St. Lucie subsequent license renewal application was sent to the licensee on September 24, 2021 (ADAMS Accession No. [ML21246A091](#)), the NRC estimated that it would take approximately \$6.4M to complete the application review.

Docket	Project Name	Projected Resources (\$M) <sup>70</sup>	Fees Billed to Date (\$M) <sup>71</sup>
	Environmental Review		
Kairos Hermes 05007513	Kairos Hermes – Construction Permit – Safety and Environmental Reviews	\$5.5 <sup>79</sup>	\$0

### 3-6 Requests for Additional Information

The table below provides information on requests for additional information (RAIs) associated with licensing actions that are considered “requested activities of the Commission” for which the NRC staff issues a final safety evaluation, consistent with Section 102(c) of NEIMA. While Section 102(c) of NEIMA only applies to licensing actions accepted after July 13, 2019, the RAI data also include licensing actions accepted prior to July 13, 2019, to provide a complete inventory.

Type of Facility or Activity Type	Total Inventory of Open RAIs as of the End of Reporting Period	Total Number of RAIs Issued in Reporting Period	Total Number of RAIs Responded to in Reporting Period	Total Number of RAIs Closed in Reporting Period <sup>80</sup>
Operating Reactors	175	78	78	95
Non-Power Production and Utilization Facilities <sup>81</sup>	615	23	42	64
Design Certifications for New Reactors <sup>82</sup>	N/A	N/A	N/A	N/A
Early Site Permits for New Reactors <sup>83</sup>	N/A	N/A	N/A	N/A
Combined Licenses for New Reactors	10	0	0	0
Construction Permits for New	0	0	0	0

<sup>79</sup> The projected resource estimated was provide to Kairos Power LLC by letter dated December 15, 2021 (ADAMS Accession No. [ML21343A214](#)).

<sup>80</sup> RAIs are considered closed once the final safety evaluation, environmental assessment, or environmental impact statement is finalized except for RAIs associated with new reactor application reviews. Due to the phased approach taken over several years for new reactor application reviews, RAIs are closed throughout the review process once the staff has determined that no additional information is needed to resolve the issue.

<sup>81</sup> For the purposes of RAI reporting, non-power production and utilization facilities include all operating research and test reactors and medical radioisotope facilities licensed under 10 CFR Part 50, including the ongoing review of the SHINE operating license application.

<sup>82</sup> No design certification applications are currently under review by the NRC; therefore, there will be no RAI data to report until an application is submitted and accepted by the NRC for review.

<sup>83</sup> No early site permit applications are currently under review by the NRC; therefore, there will be no RAI data to report until an application is submitted and accepted by the NRC for review.

Type of Facility or Activity Type	Total Inventory of Open RAIs as of the End of Reporting Period	Total Number of RAIs Issued in Reporting Period	Total Number of RAIs Responded to in Reporting Period	Total Number of RAIs Closed in Reporting Period <sup>80</sup>
Reactors or Non-Power Production and Utilization Facilities <sup>84</sup>				
Fuel Facilities	20	11	15	51
Power Reactor Decommissioning	99	24	39	17
Research and Test Reactor Decommissioning	0	0	0	0
Spent Fuel	680	55	20	3
Materials	0	0	0	0
Pre-Application Activities for Advanced Reactors	9	5	0	0

<sup>84</sup> This activity was added to track performance on construction permit applications for new light water reactors, advanced reactors, and non-power production and utilization facilities.

### 3-7 Workforce Development and Management

#### FY 2022 Staffing by Office<sup>85</sup>

	FY 2022 Budget	FTE Utilization 09/26/21 - 10/23/21	FTE Utilization 10/24/21 - 11/20/21	FTE Utilization 11/21/21 - 12/18/21	FTE Utilization as of 12/18/21	Delta (Q1 FTE Utilization – FY 2022 Budget)	End of Year (EOY) <sup>86</sup> Projection w/ Personnel Actions	Delta (EOY Projection – FY 2022 Budget)
<b>Totals</b>	2888.4	210.4	209.5	209.3	629.3	-2259.1	2768.6	-119.8
COMM	45.0	2.0	1.8	1.7	5.5	-39.5	32.7	-12.3
OIG	63.0	4.6	4.6	4.6	13.8	-49.2	60.6	-2.4
<b>Totals Other Offices</b>	2780.4	203.8	203.1	203.1	610.0	-2170.4	2675.2	-105.2
OCFO	92.0	6.5	6.7	6.8	20.0	-72.0	91.4	-0.6
OGC	90.7	7.4	7.5	7.5	22.3	-68.4	93.6	2.9
OCA	10.0	0.8	0.8	0.8	2.3	-7.7	9.8	-0.2
OCAA	7.0	0.5	0.5	0.5	1.6	-5.4	6.7	-0.3
OPA	13.0	1.0	1.0	1.0	3.0	-10.0	13.0	0.0
SECY	17.0	1.2	1.2	1.2	3.7	-13.3	17.0	0.0
OIP	34.0	2.5	2.5	2.5	7.6	-26.4	34.8	0.8
ASLBP	23.0	1.6	1.6	1.6	4.7	-18.3	21.3	-1.7
ACRS	23.5	1.8	1.9	1.8	5.4	-18.1	23.4	-0.1
OEDO	26.0	2.0	2.0	2.0	6.1	-19.9	26.8	0.8
NRR	565.6	40.2	40.0	40.1	120.3	-445.3	534.4	-31.2
NMSS	303.4	23.1	22.8	22.6	68.4	-235.0	298.1	-5.3
RES	203.5	15.1	14.7	14.8	44.5	-159.0	196.4	-7.1
NSIR	151.4	11.4	11.1	11.0	33.6	-117.8	145.7	-5.7
R-I	173.2	13.1	12.9	12.9	39.0	-134.2	164.4	-8.8
R-II	208.0	15.0	15.0	15.0	45.0	-163.0	193.4	-14.6
R-III	170.7	12.4	12.7	12.8	37.9	-132.8	164.9	-5.8
R-IV	160.9	13.1	12.9	13.0	38.9	-122.0	166.6	5.7
OE	31.5	2.4	2.4	2.4	7.1	-24.4	29.9	-1.6
OI	35.0	2.8	2.7	2.7	8.2	-26.8	34.3	-0.7
OCIO	169.0	11.3	11.3	11.2	33.8	-135.2	153.8	-15.2
ADM	121.0	8.7	8.9	8.8	26.4	-94.6	118.1	-2.9
SBCR	13.0	1.0	1.0	1.0	3.0	-10.0	13.5	0.5
OCHCO	135.0	8.8	8.9	8.9	26.6	-108.4	121.0	-14.0
CSU	3.0	0.2	0.2	0.2	0.6	-2.4	2.9	-0.1

<sup>85</sup> Some numbers might not add due to rounding.

<sup>86</sup> Based on FTE utilization as of December 18, 2021.

### 3-8 Inspection Activities

The table below shows the average number of hours of direct inspection per plant in CY 2021.

Average Reactor Oversight Process Direct Inspection Hours

Nationwide Per Plant (unit)	Column 1 of ROP Action Matrix	Column 2 of ROP Action Matrix	Column 3 of ROP Action Matrix	Column 4 of ROP Action Matrix
1,685 Hours	1,624 Hours	2,397 Hours <sup>87</sup>	3,450 Hours <sup>88</sup>	No Plants in Column 4

The table below shows the staff hours expended for inspection-related effort at operating power reactor sites by CY.

Items	Description	CY 2020 (Hours)	CY 2021 (Hours)
i.	Baseline Inspection	219,178	227,375
ii.	Plant-Specific Inspection	7,521	4,773
iii.	Generic Safety Issue Inspections	911	2,426
iv.	Performance Assessment	1,880	3,486 <sup>89</sup>
v.	Other Activities	86,074	91,971
vi.	Total Staff Effort	315,563	330,030
vii.	Total Staff Effort Per Operating Site	5,536 <sup>90</sup>	5,893 <sup>91</sup>

<sup>87</sup> As of December 31, 2021, Callaway Plant (one-unit Pressured Water Reactor (PWR)) was in Column 2 of the ROP Action Matrix ([ROP Action Matrix](#)). Surry Power Station Unit 2 (two-unit PWR) was in Column 2 in Q1 CY 2021 and returned to Column 1 on April 1, 2021 (ADAMS Accession No. [ML20365A007](#)). Clinton Power Station (one-unit Boiling Water Reactor (BWR)) was in Column 2 in Q1 and Q2 CY 2021 and returned to Column 1 on July 1, 2021 (ADAMS Accession No. [ML21197A022](#)). Turkey Point Nuclear Generating Unit 3 (two-unit PWR) was in Column 2 in Q1, Q2, and Q3 CY 2021 and returned to Column 1 on October 1, 2021 (ADAMS Accession No. [ML21307A137](#)). James A. Fitzpatrick (one-unit BWR) was in Column 2 in Q1, Q2, and Q3 CY 2021 and returned to Column 1 on October 1, 2021 (ADAMS Accession No. [ML21308A407](#)).

<sup>88</sup> On March 3, 2021, Grand Gulf Nuclear Station (one-unit BWR) entered Column 3 of the ROP Action Matrix in Q4 CY 2020 (ADAMS Accession No. [ML21055A008](#)) and returned to Column 1 on November 18, 2021 (ADAMS Accession No. [ML21306A311](#)).

<sup>89</sup> The increase in Performance Assessment hours is due to a change in tabulation of hours. The CY 2020 hours did not include hours assigned to ROP cycles other than 2020, while the CY 2021 hours includes ROP Cycle 2020 hours charged in 2021. Applying the same methodology to the CY 2020 hours would increase the number to 3,569 from 1,880.

<sup>90</sup> Total staff effort is divided by 57 sites for CY 2020, due to Three Mile Island Unit 1 permanently ceasing operations on September 20, 2019.

<sup>91</sup> Total staff effort is divided by 56 sites for CY 2021, due to Duane Arnold Unit 1 permanently ceasing operations in August 2020. Because Duane Arnold Unit 1 operated for the majority of CY 2020, it was included as an operating site in CY 2020.

### **3-9 Backfit**

#### Facility-Specific Backfits

No facility-specific backfits were issued during the reporting period.

#### Generic Backfits

No generic backfits were issued during the reporting period.

#### Backfit Appeals Filed by Licensees and Applicants

There were no backfit appeals submitted to the NRC during the reporting period.