

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

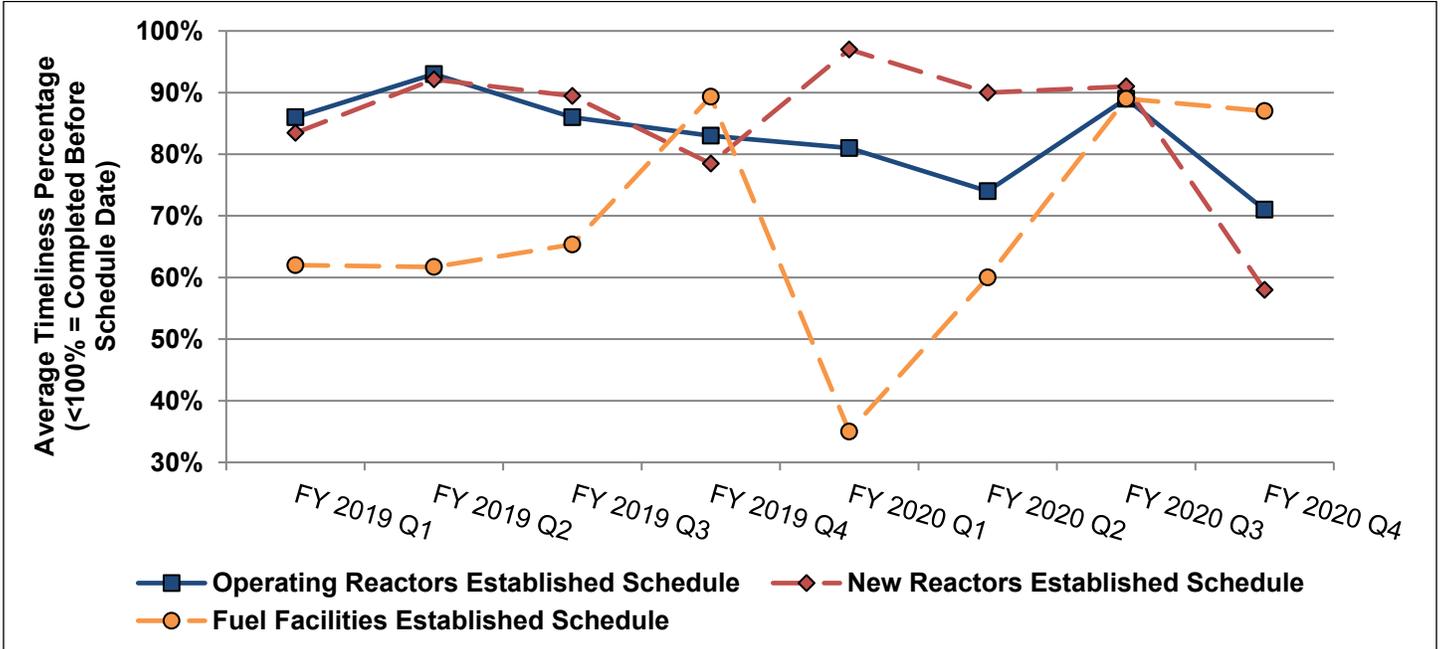
For the Reporting Period of July 1, 2020 through September 30, 2020

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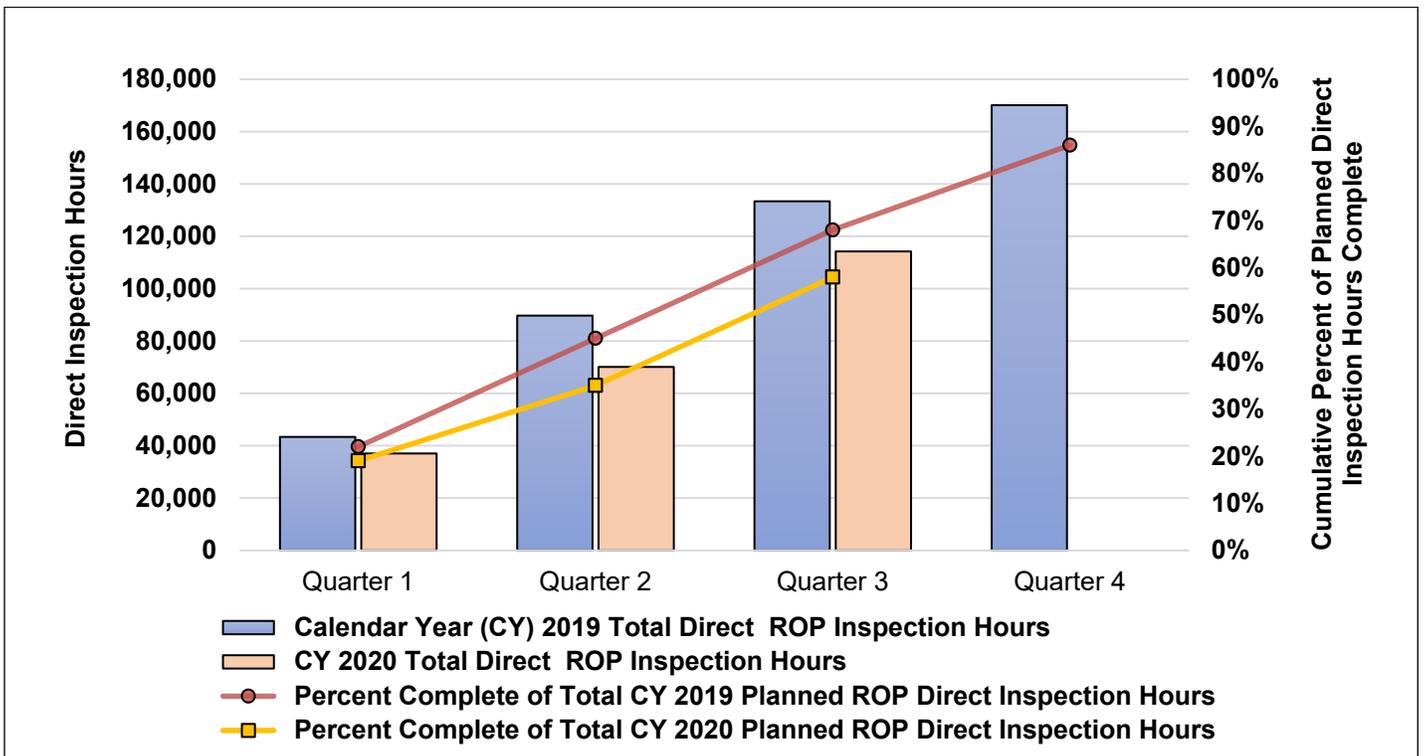
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Enclosure 1 – High Level Summary

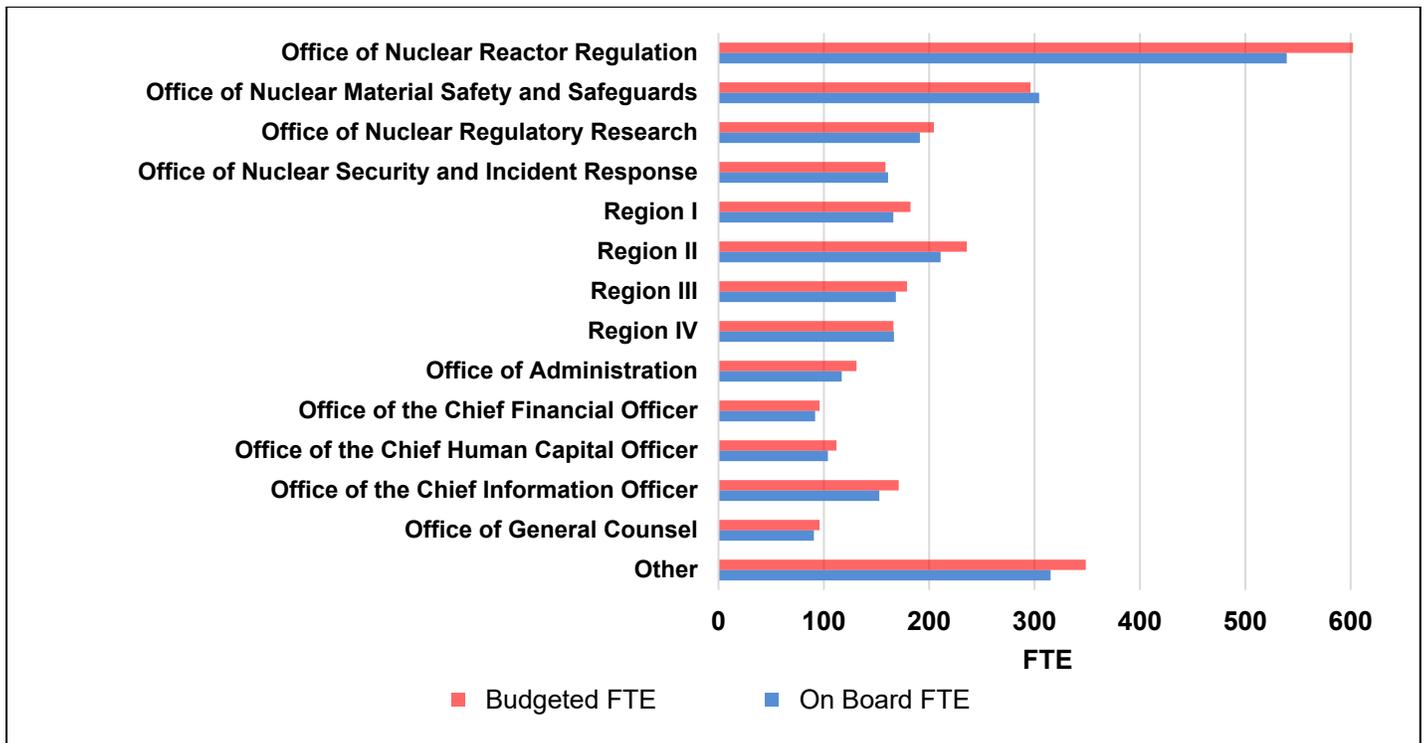
1-1 Average Timeliness Percentage for Licensing Actions Categorized Under the Nuclear Energy Innovation and Modernization Act



1-2 Reactor Oversight Inspection Hours and Percent Complete



1-3 FTE at the End of Q4 FY 2020 vs. Budgeted FTE



1-4 Budget Authority, FTE Utilization, and Fees

NRC FY 2020 Budget Authority - September 30, 2020 (Dollars in Thousands)

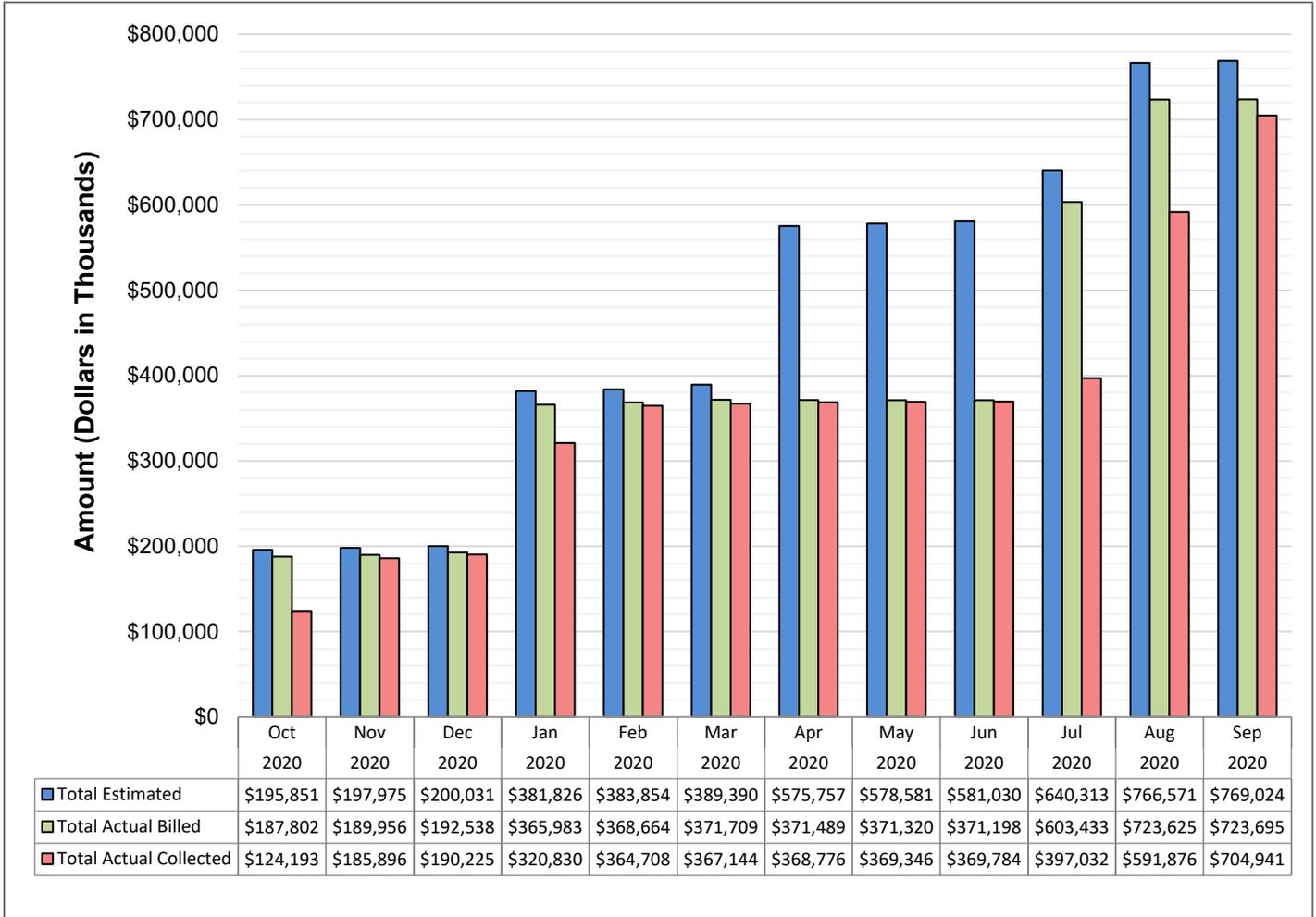
| Fund Sources | FY 2020 Budget ¹ | Percent Obligated | Percent Expended |
|-------------------------------------|-----------------------------|-------------------|------------------|
| Advanced Reactor | \$16,015 | 97% | 65% |
| Commission Funds | \$11,908 | 53% | 52% |
| Fee-Based Funds | \$830,150 | 97% | 76% |
| General Funds | \$1,553 | 71% | 43% |
| International Activities | \$14,500 | 93% | 80% |
| Integrated University Program | \$16,000 | 16% | 0% |
| Official Representation | \$25 | 25% | 19% |
| Total | \$890,151 | 95% | 74% |
| NRC Control Points | FY 2020 Budget | Percent Obligated | Percent Expended |
| Nuclear Reactor Safety | \$447,940 | 97% | 84% |
| Nuclear Materials and Waste Safety | \$105,282 | 98% | 81% |
| Decommissioning and Low-Level Waste | \$23,141 | 92% | 83% |
| Corporate Support | \$298,288 | 96% | 60% |
| Integrated University Program | \$16,000 | 16% | 0% |
| Total | \$890,151 | 95% | 74% |

¹ FY 2020 budget includes the enacted and carryover budget.

FTE Utilization, Hiring, and Attrition

| Total Year to Date (YTD) FTE Utilization | Projected End of Year FTE Total Utilization | Quarter 4 Hiring | Quarter 4 Attrition | YTD Hiring | YTD Attrition |
|--|---|------------------|---------------------|------------|---------------|
| 2789.7 | 2789.7 | 51 | 38 | 112 | 194 |

FY 2020 Fees Estimated, Fees Billed, and Fees Collected Through Q4²



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

| FY 2018 | FY 2019 | FY 2020 (Q1 – Q4) |
|---------|---------|-------------------|
| \$266.0 | \$245.3 | \$205.7 |

² In order to temporarily mitigate the financial impacts and economic disruptions caused by the Coronavirus Disease 2019 (COVID-19) public health emergency (PHE) for licensees, the NRC deferred all invoices scheduled to be issued in April, May, and June 2020 until July 22, 2020. See Enclosure 2, Section 2-12, "Coronavirus Disease 2019 Public Health Emergency," for more information on NRC's PHE-related actions.

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 quarter, and projected activities under each item for the next two quarters.

2-1 Transformation

The U.S. Nuclear Regulatory Commission’s (NRC) transformation initiative currently encompasses a broad set of activities intended to advance the agency towards the vision of being a more modern, risk-informed regulator. There are four focus areas: (1) recruiting, developing, and retaining a strong workforce; (2) improving decisionmaking 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.

During the reporting period, the NRC staff implemented an improved process for preparing Commission papers that includes formal requirements to ensure early alignment on the papers’ analytical approaches and key messages. The NRC staff also publicly briefed the Commission on the progress of transformation activities on September 17, 2020. The briefing focused on the Culture Improvement Strategy; the new agencywide innovation platform (Innovate NRC 2.0); the Signposts and Markers dashboard, which uses key indicators to inform strategic decisionmaking; and the use of data analytics to improve the Nuclear Reactor Safety Program.

Activities Planned and Completed for the Reporting Period (Q4 FY 2020)

| Transformation Activities | Projected Completion Date | Completion Date |
|--|---------------------------|-----------------|
| Begin implementation of improved process to streamline Commission paper preparation. | 07/30/2020 | 08/06/2020 |
| Brief the Commission on staff’s transformation activities (public meeting) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20253A225). | 09/17/2020 | 09/17/2020 |
| Complete initial training of senior leaders on behavior and how to effect cultural change as a part of the transformation initiative. | 09/30/2020 | 07/30/2020 |
| Develop the first iteration of the Signposts and Markers dashboard to inform decisionmaking processes, such as workforce planning and the agency environmental scan development. | 09/30/2020 | 09/30/2020 |

Projected Activities for the Next Two Reporting Periods (Q1 and Q2 FY 2021)

| Projected Transformation Activities | Projected Completion Date |
|--|---------------------------|
| Conduct series of “KNOWvember” seminars on transformation focus areas and knowledge management activities. | 11/30/2020 |

| Projected Transformation Activities | Projected Completion Date |
|--|----------------------------------|
| Conduct seminar for all agency staff on strategic and managerial aspects of risk-informed decisionmaking. | 12/31/2020 ³ |
| Launch 2021 Objectives and Key Results transformation performance management framework. | 01/04/2021 |
| Launch a platform for employees to highlight opportunities and key markers for career progression in disciplines where future staff skills gaps are anticipated. | 02/01/2021 |
| Communicate the progress of transformation activities to stakeholders and members of the public at the 2021 Regulatory Information Conference. | 03/11/2021 |
| Conduct a survey of NRC staff on organizational culture to assess progress made since the initial survey in March 2020. | 03/30/2021 |

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. This process projects the amount and type of work anticipated in the next 5 years and identifies the workforce needs in order to perform it. By analyzing the current workforce and comparing it to future needs, skill gaps or surpluses 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 FY 2020 strategies included recruitment and retention activities, as well as cross-training, cross-qualification, and knowledge management activities to build expertise in areas projected to experience skill and proficiency gaps in the future.

Activities Planned and Completed for the Reporting Period (Q4 FY 2020)

| Workforce Development and Management Activities | Projected Completion Date | Completion Date |
|--|----------------------------------|------------------------|
| Onboard 55 summer hire students for virtual internships; 37 students are slated to return next summer. | 09/01/2020 | 09/01/2020 |
| Complete 14 weeks of initial training in regulatory and technical fundamentals for the NRC's Nuclear Regulator Apprenticeship Network. | 09/30/2020 | 09/30/2020 |

Projected Activities for the Next Two Reporting Periods (Q1 and Q2 FY 2021)

| Projected Workforce Development and Management Activities | Projected Completion Date |
|--|----------------------------------|
| Complete Agency Environmental Scan to support 2021 SWP activities. | 12/04/2020 ⁴ |

³ Conducting seminars for all agency staff on strategic and managerial aspects of risk-informed decisionmaking was previously scheduled for completion on September 1, 2020, but has been delayed due to limited availability of the main seminar speaker.

⁴ Completion of the Agency Environmental Scan to support 2021 SWP activities was previously scheduled for completion on September 30, 2020, but has been moved to December 4, 2020, because this activity was merged with an activity that was scheduled to be completed later to streamline the overall process.

2-3 Accident Tolerant Fuel

The NRC continues to make significant progress in its preparation for licensing reviews of Accident Tolerant Fuel (ATF) designs for use in U.S. commercial power reactors. The NRC staff is executing the ATF project plan (ADAMS Accession No. [ML19301B166](#)). The NRC staff is currently reviewing one ATF fuel vendor topical report on a new type of fuel pellet called ADOPT. The staff is also reviewing another vendor topical report that discusses allowing the use of a limited number of higher burnup lead test assemblies. The NRC staff is also preparing for additional ATF submittals from fuel vendors expected in CY 2021.

The NRC recently approved three ATF-related requests. The first documents the NRC’s review and acceptability of Global Nuclear Fuel - Americas, LLC’s assumptions and methodology for performing criticality analyses up to 8 weight percent uranium-235 (ADAMS Accession No. [ML20219A463](#)). The second allows the transportation of fuel rods with chromium-coated cladding, doped pellets, and enrichment to up to 7 weight percent uranium-235 (ADAMS Accession No. [ML20255A295](#)). The third is for transportation of ATF lead test assemblies to Monticello Nuclear Generating Plant (ADAMS Accession No. [ML20283A357](#)).

The NRC staff led a workshop on higher burnup fuels in July 2020. The primary purpose of the workshop was to relay the NRC staff’s expectations regarding licensing submittals for higher burnup fuels, including clarification on the expected content and estimated timelines for submission.

The NRC held the initial panel discussion for the Severe Accident Phenomena Identification Ranking Table (PIRT) exercise during this reporting period. This PIRT exercise includes a panel of international experts that will address the significant issues affecting core degradation and radiological releases under severe accident conditions for various ATF designs. The scope of the PIRT exercise also includes the impact of higher burnup and higher enrichment fuels. Once PIRT results are reported, the NRC will have a better understanding of how ATF concepts affect severe accident progression. This information will help improve the agency’s severe accident computer code MELCOR.

Activities Planned and Completed for the Reporting Period (Q4 FY 2020)

| ATF Activities | Projected Completion Date | Completion Date |
|---|---------------------------|-----------------|
| Update of the public ATF Web page ⁵ to provide more information in a more user-friendly format with infographics and embedded links. | 07/31/2020 | 07/24/2020 |
| Complete review of ATF-related request for a minimum margin of subcriticality to support future processing of enrichments up to 8 percent (ADAMS Accession No. ML20219A463). | 10/30/2020 | 08/13/2020 |
| Conduct higher burnup fuel public workshop. This workshop will relay initial NRC expectations to the nuclear industry for licensing submittals for higher burnup fuels, including clarification on the expected content and estimated timelines for submission. | 08/31/2020 | 07/30/2020 |

⁵ <https://www.nrc.gov/reactors/atf.html>.

| ATF Activities | Projected Completion Date | Completion Date |
|--|---------------------------|-------------------------|
| Complete review of ATF-related request to allow the transportation of fuel rods with chromium-coated cladding, doped pellets, and fuel rods enriched to up to 7 percent (ADAMS Accession No. ML20255A295). | 08/31/2020 | 09/15/2020 ⁶ |
| Hold phenomena identification and ranking exercise for severe accidents. This exercise will provide information on the performance of various ATF concepts, higher burnup fuel, and fuel with enrichment above 5 percent in severe reactor accidents to support refinement of regulatory guidance. | 09/31/2020 | 09/11/2020 |

Projected Activities for the Next Two Reporting Periods (Q1 and Q2 FY 2021)

| Projected ATF Activities | Projected Completion Date |
|---|---------------------------|
| Issue iron-chromium-aluminum (FeCrAl) cladding report. This report will identify and discuss degradation and failure modes of FeCrAl cladding concepts, including fuel performance characteristics that may not be addressed within existing regulatory documents. | 10/31/2020 |
| Issue Spent Fuel Storage and Transportation of ATF Concepts report. This report will provide an assessment of available information related to the storage and transportation of spent nuclear fuel involving near-term ATF concepts, specifically Cr-coated zirconium alloy and FeCrAl cladding. | 10/31/2020 |
| Complete review of ATF-related request for Framatome to transport ATF lead test assemblies to Monticello Nuclear Generating Plant. | 01/08/2021 ⁷ |

2-4 Digital Instrumentation and Control

The NRC staff continues to complete digital instrumentation and control (DI&C) infrastructure improvements to address: (1) protection against common cause failure and (2) commercial grade dedication of digital equipment.

Regarding protection against common cause failure, the NRC staff briefed the Advisory Committee on Reactor Safeguards (ACRS) DI&C subcommittee on September 8, 2020, on its update of Branch Technical Position (BTP) 7-19, "Guidance for Evaluation of Diversity and Defense-In-Depth in Digital Computer Based Instrumentation and Control Systems." The staff subsequently held a public meeting on September 24, 2020, to discuss comments from the ACRS and other stakeholders. The staff is currently working on finalizing this guidance.

Regarding commercial grade dedication of digital equipment, the NRC staff provided comments to the Nuclear Energy Institute (NEI) on draft NEI 17-06, "Guidance on Using IEC 61508 SIL

⁶ This ATF-related request was previously scheduled for completion on August 31, 2020, but was delayed due to additional time required for internal peer review. The applicant was kept informed of the delay.

⁷ The staff completed this activity on October 9, 2020 (ADAMS Accession No. [ML20283A357](#)), which will be reflected for the next reporting period.

Certification to Support the Acceptance of Commercial Grade Digital Equipment for Nuclear Safety Related Applications,” on December 19, 2019, and additional comments following public meetings in April, July, and September 2020. NRC staff anticipates receiving NEI 17-06 by the end of CY 2020 for NRC review and potential endorsement.

The NRC staff continues to review and prepare for anticipated digital modernization license amendment requests (LARs). On August 26, 2020, the staff accepted a LAR from Entergy for an upgrade to the core protection calculator at Unit 3 of the Waterford Steam Electric Station (Waterford). The NRC staff anticipates issuing a licensing decision by the end of August 2021. In a public-private partnership with the Department of Energy’s (DOE’s) Light Water Reactor Sustainability Program, Exelon Generation Corporation, LLC (Exelon) plans to develop and implement an extensive digital modernization of multiple safety systems at the Limerick Generating Station. NRC expects to receive the LAR in CY 2021. The NRC staff held the first preapplication meeting with Exelon on June 12, 2020, and anticipates the next pre-application meeting by the end of CY 2020.

Activities Planned and Completed for the Reporting Period (Q4 FY 2020)

| Digital Instrumentation and Control Activities | Projected Completion Date | Completion Date |
|--|---------------------------|-----------------|
| Update BTP 7-19, “Guidance for Evaluation of Diversity and Defense-In-Depth in Digital Computer Based Instrumentation and Control Systems.” | | |
| <ul style="list-style-type: none"> Second ACRS Subcommittee Meeting. | 09/08/2020 | 09/08/2020 |
| <ul style="list-style-type: none"> Hold a public meeting with NEI to discuss industry comments (ADAMS Accession No. ML20258A269). | 09/24/2020 | 09/24/2020 |
| Endorse NEI 17-06, “Guidance on Using IEC 61508 SIL Certification to Support the Acceptance of Commercial Grade Digital Equipment for Nuclear Safety Related Applications,” through issuance of a regulatory guide (RG). | | |
| <ul style="list-style-type: none"> Hold a public meeting to discuss resolution of NRC staff comments (ADAMS Accession No. ML20183A258). | 07/09/2020 | 07/09/2020 |
| Significant Digital Modernization LAR Milestones | | |
| <ul style="list-style-type: none"> Complete acceptance review for Entergy LAR for Waterford Unit 3.⁸ | 8/28/2020 | 8/26/2020 |

Projected Activities for the Next Two Reporting Periods (Q1 and Q2 FY 2021)

| Projected Digital Instrumentation and Control Activities | Projected Completion Date |
|---|---------------------------|
| Update BTP 7-19, “Guidance for Evaluation of Diversity and Defense-In-Depth in Digital Computer Based Instrumentation and Control Systems.” | |
| <ul style="list-style-type: none"> ACRS Full Committee Meeting. | 11/30/2020 |

⁸ On July 23, 2020, Entergy submitted a LAR for NRC review to upgrade the core protection calculator at Waterford Unit 3. The LAR is based on updated NRC guidance in Revision 2 of DI&C interim staff guidance (ISG)-06, “Licensing Process” (ADAMS Accession No. [ML18143B633](#)), with a new streamlined “Alternate Review Process” for early design approval (ISG-06 is a completed DI&C guidance activity previously tracked in this report). The acceptance review decision is a major milestone in the NRC license amendment review process.

| Projected Digital Instrumentation and Control Activities | Projected Completion Date |
|---|---------------------------|
| <ul style="list-style-type: none"> • Hold a public meeting to discuss resolution of comments. | 12/21/2020 |
| <ul style="list-style-type: none"> • Submit request to the Office of Management and Budget (OMB) for major/non-major rule determination for BTP 7-19 under the Congressional Review Act in preparation for final issuance. | 12/31/2020 |
| <ul style="list-style-type: none"> • Issue Revision 8 to BTP 7-19 | 03/01/2021 ⁹ |
| Endorse NEI 17-06, "Guidance on Using IEC 61508 SIL Certification to Support the Acceptance of Commercial Grade Digital Equipment for Nuclear Safety Related Applications," through issuance of an RG. | |
| <ul style="list-style-type: none"> • Observe audit of a third-party certifying body. | 11/30/2020 |
| <ul style="list-style-type: none"> • NEI to submit NEI 17-06 for NRC review. | 12/31/2020 |

2-5 Vogtle Electric Generating Plant Units 3 and 4

The NRC issued two combined licenses 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. During this reporting period, SNC updated its public milestone for initial fuel loading of Vogtle Electric Generating Plant (Vogtle) Unit 3 from November 23, 2020, to April 30, 2021. The NRC's Vogtle Readiness Group (VRG) increased their meeting frequency to assess NRC activities and schedule, and to identify any regulatory challenges that might affect transition to operations. During the COVID-19 public health emergency (PHE), construction inspections and licensing activities continue with only minor interruptions due to the successful application of technology for telework and remote access to licensee information. The NRC continues to perform on-site inspections at Vogtle.

During this reporting period, the NRC issued two key documents related to Vogtle. On August 14, 2020, the NRC staff issued a memorandum that outlines the plan to provide an effective and efficient transition of Vogtle Units 3 and 4, from the Construction Reactor Oversight Process to the Reactor Oversight Process (ROP) (ADAMS Accession No. [ML20191A383](#)). The plan describes inspections and assessments performed before and after the 10 CFR 52.103(g) finding (i.e., the finding that all inspections, tests, analyses, and acceptance criteria (ITAAC) have been successfully completed) and provides details on how each unit transitions to the ROP. In addition, on September 24, 2020, the NRC staff issued a memorandum to the Commission providing updates on ITAAC completion, inspection activities, including construction and operational programs, licensing activities, and any current challenges for Unit 3 (ADAMS Accession No. [ML20183A090](#)).

⁹ Final issuance is contingent on the NRC receiving a major/non-major rule determination from OMB within 60 days.

Activities Planned and Completed for the Reporting Period (Q4 FY 2020)

| Vogtle Electric Generating Plant Units 3 and 4 Activities | Projected Completion Date | Completion Date |
|--|----------------------------------|------------------------|
| Develop a supplement to the AP1000 Transition Plan that details the current NRC plan for the transition of Vogtle Unit 3 from the construction Reactor Oversight Process to the Reactor Oversight Process (ADAMS Accession Nos. ML20191A383 and ML20191A398). | 08/31/2020 | 08/14/2020 |
| Issue amendments for LARs 20-001, 20-002, and 20-003 (ADAMS Accession Nos. ML20132A032 , ML20196L674 , and ML20237F487 , respectively). | 09/30/2020 | 09/24/2020 |
| Issue memorandum to inform the Commission of the status of Vogtle Unit 3 construction. This memorandum will provide updates on ITAAC completion, inspection activities (including construction and operational programs), licensing activities, and any current challenges (ADAMS Accession No. ML20183A090). | 09/30/2020 | 09/24/2020 |

Projected Activities for the Next Two Reporting Periods (Q1 and Q2 FY 2021)

| Projected Vogtle Electric Generating Plant Units 3 and 4 Activities | Projected Completion Date |
|---|----------------------------------|
| Issue amendments for LARs 20-004 and LAR 20-005 (provided the requisite findings are made). | 12/30/2020 |
| Conduct public meeting to discuss VRG activities. ¹⁰ | 03/31/2021 |

NRC Inspections and ITAAC Reviews for the Reporting Period (Q4 FY 2020)

A combined license allows a licensee to construct a plant and to operate it once construction is complete if certain standards identified in the combined license are satisfied. These standards are called ITAAC. The majority of ITAAC are from the design certification for the particular reactor technology the plant uses. Throughout the construction process, NRC inspectors will perform inspections based upon [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>.

¹⁰ A public meeting to discuss VRG activities was added to ensure public engagement during the Vogtle 3 and 4 construction.

| Number of ITAAC Remaining Requiring Inspection | Total Inspections Completed ¹¹ | ITAAC Inspected ¹² | ITAAC Inspections Closed ¹³ |
|--|---|-------------------------------|--|
| 244 | 55 | 38 | 11 |

ITAAC Reviews Completed for the Reporting Period (Q4 FY 2020)

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 ID No. | Received Date | Approval Date |
|----------|-----------------|---------------|---------------|
| Vogtle 3 | 2.1.02.08e | 07/06/2020 | 07/07/2020 |
| Vogtle 4 | 2.3.05.03a.ii | 07/22/2020 | 07/24/2020 |
| Vogtle 3 | 2.2.03.08c.ii | 07/24/2020 | 08/04/2020 |
| Vogtle 3 | 2.2.03.08c.i.04 | 07/30/2020 | 07/31/2020 |
| Vogtle 3 | 2.1.02.08d.i | 07/31/2020 | 08/18/2020 |
| Vogtle 4 | 2.5.05.03b | 07/31/2020 | 08/05/2020 |
| Vogtle 3 | C.3.8.02.01 | 08/07/2020 | 08/10/2020 |
| Vogtle 4 | C.3.8.02.01 | 08/07/2020 | 08/10/2020 |
| Vogtle 3 | C.2.6.09.02 | 08/11/2020 | 09/10/2020 |
| Vogtle 3 | 2.3.05.03d.ii | 08/19/2020 | 08/20/2020 |
| Vogtle 3 | 2.7.06.02.ii | 08/27/2020 | 09/10/2020 |
| Vogtle 3 | 2.1.02.09b.ii | 08/28/2020 | 09/02/2020 |
| Vogtle 3 | 3.3.00.02a.i.a | 09/15/2020 | 09/17/2020 |
| Vogtle 3 | 2.3.05.03c.ii | 09/21/2020 | 09/25/2020 |

Vogtle Units 3 and 4 LAR Reviews Completed (Q4 FY 2020)

| Number of LAR Reviews Forecast to be Completed in the Reporting Period | Number of LAR Reviews that were Completed in the Reporting Period |
|--|---|
| 3 | 3 |

2-6 NuScale Small Modular Reactor (SMR) Design Certification

On March 15, 2017, the NRC accepted the NuScale Power, LLC (NuScale) application for an SMR design certification review. On August 28, 2020, the NRC staff's technical review was completed.

In February 2020, the NRC was informed that NuScale had identified an issue with the emergency core cooling system (ECCS). As a result, NuScale implemented design changes affecting the ECCS actuation timing and addressed concerns related to containment water level accumulation and boron dilution in the downcomer. The proposed design changes required NuScale to revise parts of its Final Safety Analysis Report and associated technical and topical

¹¹ 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).

¹² "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.

¹³ "ITAAC Inspection Closed" refers to the number of ITAAC for which all associated inspections have been completed during the reporting period.

reports, which required further NRC review. NuScale submitted the proposed final design changes and supporting information to the NRC on May 20, 2020 (ADAMS Accession No. [ML20141L787](#)).

The staff completed its review and presented the findings related to the proposed design changes to the ACRS in July 2020. As a result, Phase 5 (ACRS Review of Advanced Safety Evaluation Report (SER) with No Open Items) was completed on July 31, 2020. The staff completed the final SER on August 28, 2020, (ADAMS Accession No. [ML20023A318](#)) and issued a standard design approval to NuScale on September 11, 2020 (ADAMS Accession No. [ML20247J564](#)). The staff is preparing the draft proposed rule that will propose certifying the design and anticipates publishing the proposed rule for public comment in February 2021.

Activities Planned and Completed for the Reporting Period (Q4 FY 2020)

| NuScale SMR Design Certification Activities | Projected Completion Date | Completion Date |
|---|----------------------------------|------------------------|
| ACRS full committee meeting on NuScale’s Boron Redistribution and Technical Specifications (presentation by the NRC staff) (ADAMS Accession No. ML20170A337). | 07/08/2020 | 07/08/2020 |
| ACRS full committee meeting on NuScale’s boron redistribution, NuScale’s design certification final letter, and lessons learned (ADAMS Accession No. ML20170A348). | 07/25/2020 | 07/22/2020 |
| Complete Phase 5 of the safety review (ACRS Review of Advanced SER with No Open Items). | 07/31/2020 ¹⁴ | 07/31/2020 |
| Complete Phase 6 of the safety review (Final SER with No Open Items) (ADAMS Accession No. ML20231A804). | 09/08/2020 | 08/28/2020 |
| Issue standard design approval for the NuScale SMR design certification (ADAMS Accession No. ML20247J564). | 09/11/2020 | 09/11/2020 |

Projected Activities for the Next Two Reporting Periods (Q1 and Q2 FY 2021)

| Projected NuScale SMR Design Certification Activities | Projected Completion Date |
|---|----------------------------------|
| Publish proposed rule for NuScale SMR design certification. ¹⁵ | 02/08/2021 |

2-7 Advanced Nuclear Reactor Technologies

The NRC is making significant progress in preparation for reviewing non-light-water-reactor (non-LWR) designs, consistent with the staff’s vision and strategy (ADAMS Accession No. [ML16356A670](#)). The NRC staff is currently executing the implementation action plans to

¹⁴ Due to NuScale’s design change and proposed schedule modification for submitting the revised supporting documentation, the Phase 5 milestone of June 23, 2020, was delayed. This milestone was revised to reflect a Phase 5 milestone of July 31, 2020, upon receipt of NuScale’s final design change package; the NRC staff informed NuScale about this update in a letter on May 1, 2020 (ADAMS Accession No. ML20112F455).

¹⁵ Additional information regarding this rulemaking is available at the following Web page: <https://www.nrc.gov/reading-rm/doc-collections/rulemaking-ruleforum/active/RuleDetails.html?id=40>

achieve non-LWR safety review readiness.¹⁶ During this reporting period, the NRC staff issued a draft white paper to support public and ACRS interactions on developing a risk-informed, technology-inclusive regulatory framework for advanced reactors (10 CFR Part 53 rulemaking). The NRC staff also issued the final safety evaluation for a Tristructural Isotropic (TRISO) topical report. The NRC also issued a draft white paper with proposed fuel qualification methodology for non-LWR developers on qualification of fuel as part of its efforts to implement provisions in the Nuclear Energy Innovation and Modernization Act (NEIMA).

On October 6, 2020, the NRC, in coordination with the DOE and the Fusion Industry Association, held a public forum with over 190 participants on developing a regulatory framework for commercial fusion reactors. Chairman Svinicki provided opening remarks and answered questions along with DOE’s Under Secretary for Science, Paul Dabbar. The NRC staff will coordinate future meetings with DOE, the Fusion Industry Association, and other stakeholders to support developing options for Commission consideration on a framework for regulating commercial fusion facilities.

The NRC’s public Web site lists the open and resolved technical and policy issues related to SMRs and non-LWRs and is updated periodically to show the status of the issues (<https://www.nrc.gov/reactors/new-reactors/smr.html#techPolicyIssues>). 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.html#stakeholder>).

Activities Planned and Completed for the Reporting Period (Q4 FY 2020)

| Advanced Nuclear Reactor Technologies Activities | Projected Completion Date | Completion Date |
|---|----------------------------------|------------------------|
| Issue a draft white paper to support public and ACRS interactions on developing a risk-informed, technology-inclusive regulatory framework for advanced reactors (10 CFR Part 53 rulemaking) (ADAMS Accession No. ML20195A270). | 07/31/2020 | 07/20/2020 |
| Issue final safety evaluation for TRISO topical report (ADAMS Accession No. ML20216A323). | 08/30/2020 | 08/11/2020 |
| Issue Scoping Summary Report for the Advanced Nuclear Reactor Generic Environmental Impact Statement (ADAMS Accession No. ML20260H180). | 09/25/2020 | 09/25/2020 |
| Issuance of report by the Idaho National Laboratory entitled, “Risk-Informed, Performance-Based, Technology-Inclusive Regulatory Infrastructure: Technology-Inclusive Determination of Mechanistic Source Terms for Offsite Dose-Related Assessments for Advanced Nuclear Reactor Facilities” (ADAMS Accession No. ML20192A250). | 09/30/2020 | 06/30/2020 |
| Issuance of report by Oak Ridge National Laboratory (ORNL) entitled, “MSR Fuel Salt Qualification Methodology” (ADAMS Accession No. ML20197A257). | 09/30/2020 | 07/01/2020 |

¹⁶ 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.html#advSumISRRA>).

| Advanced Nuclear Reactor Technologies Activities | Projected Completion Date | Completion Date |
|---|----------------------------------|------------------------|
| Issuance of two technical input reports by ORNL and Pacific Northwest National Laboratory (PNNL) for the NRC's review of American Society of Mechanical Engineers Boiler and Pressure Vessel Code Section III Division 5 (ADAMS Accession Nos. ML20269A125 and ML20269A145). | 09/30/2020 | 09/04/2020 |
| Issue draft white paper with proposed fuel qualification methodology to provide guidance for non-LWR developers on qualification of fuel under NEIMA (ADAMS Accession No. ML20191A259). | 12/31/2020 | 09/15/2020 |
| Issuance of report by PNNL on environmental impacts of non-LWR fuel cycle and transportation (ADAMS Accession Nos. ML20267A157). | 12/31/2020 | 09/30/2020 |
| Issue Code Assessment Report, Volume 4, on Dose Assessment. (ADAMS Accession No. ML20028F255). | 12/31/2020 | 09/04/2020 |

Projected Activities for the Next Two Reporting Periods (Q1 and Q2 FY 2021)

| Projected Advanced Nuclear Reactor Technologies Activities | Projected Completion Date |
|--|----------------------------------|
| Host NRC Standards Forum to facilitate the identification of needed consensus codes and standards and explore collaboration to accelerate their development with a focus on advanced non-light water reactors. | 10/13/2020 |
| Issue a paper to the Commission on micro-reactors. The paper will discuss potential licensing and policy issues specific to micro-reactors. | 10/30/2020 ¹⁷ |
| Issue two technical input reports by ANL and NUMARK Associates, Inc. for the NRC's review of American Society of Mechanical Engineers Boiler and Pressure Vessel Code Section III Division 5. | 10/30/2020 ¹⁸ |
| Issue a memorandum to the Commission providing a schedule with milestones and resource requirements to achieve publication of the final 10 CFR Part 53 rule by October 2024. | 11/02/2020 |
| Issue final white paper with proposed fuel qualification methodology to provide guidance for non-LWR developers on qualification of fuel under NEIMA. | 12/31/2020 |
| Issue Final Interim Staff Guidance, "Environmental Considerations Associated with Micro-reactors." | 12/31/2020 |
| Issue annual paper to the Commission on the status of advanced reactor readiness activities. | 01/31/2021 |

¹⁷ Issuance delayed from the previous projected date of August 30, 2020, due to higher priority activities.

¹⁸ Two of the four technical input reports projected in the FY 2020 Q3 report were issued in August and September 2020. The remaining two reports are now scheduled for October 30, 2020, to address additional comments.

| Projected Advanced Nuclear Reactor Technologies Activities | Projected Completion Date |
|--|---------------------------|
| Issue final technology-inclusive, risk-informed, and performance-based design review guide for instrumentation and controls systems for advanced reactors. | 01/31/2021 ¹⁹ |
| Issue three technical reports on molten salt chemistry, salt compatibility with high temperature materials, and high temperature corrosion. | 03/31/2021 |
| Issue Material Control and Accounting guidance for Category II facilities (NUREG-2159). | 05/31/2021 ²⁰ |

2-8 Oklo Power LLC (Oklo) Combined License Application for the Aurora Compact Fast Reactor

The NRC began pre-application discussions with Oklo in November 2016 on an advanced reactor design that uses liquid metal for heat transport. The proposed Aurora design would use heat pipes to transport heat from the reactor core to a power conversion system, where it would then be used to generate electricity. On March 11, 2020, Oklo submitted a custom combined license (COL) application²¹ for the Aurora reactor to the NRC (ADAMS Accession No. [ML20075A000](#)). The NRC staff determined that the application is acceptable for docketing and is proceeding with the safety and environmental reviews. On June 5, 2020, the NRC issued a letter to Oklo (ADAMS Accession No. [ML20149K616](#)) indicating that the staff plans to complete the review in a two-step process. In Step 1, the NRC staff plans to engage Oklo in public meetings, conduct regulatory audits, and issue requests for additional information (RAIs) to efficiently align on four key safety and design aspects of the proposed licensing basis. After aligning on the key aspects in Step 1, the NRC staff will have defined the scope of the full detailed technical review and will develop a schedule to efficiently perform the review in Step 2. Successful completion of Step 2 will involve the staff making its reasonable assurance findings regarding the custom COL application for the Aurora design, conducting its environmental review, and issuing the staff's final SER after the ACRS completes its review.

The NRC holds periodic public meetings to discuss the review of the custom Aurora Powerhouse. 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>).

Activities Planned and Completed for the Reporting Period (Q4 FY 2020)

| Oklo COL Review Activities | Projected Completion Date | Completion Date |
|--|---------------------------|-----------------|
| Hold initial public meeting to discuss the methodology used in the analysis and evaluation of the maximum credible accident. | 08/04/2020 | 08/04/2020 |

¹⁹ The schedule for final issuance has been revised to ensure sufficient time for ACRS review and comment. The ACRS subcommittee meeting was held on October 21, 2020, and the ACRS full committee is scheduled for December 3, 2020.

²⁰ Issuance delayed from the original projected date of January 31, 2020, due to higher priority licensing actions.

²¹ 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.

| Oklo COL Review Activities | Projected Completion Date | Completion Date |
|--|---------------------------|-------------------|
| Hold initial public meeting to discuss the process to be used for classifying structures, systems, and components (SSCs) in the Aurora design and the treatment for each classification of SSCs. | 08/05/2020 | 08/05/2020 |
| Complete an audit on the maximum credible accident heat transfer in reactor system. | 08/29/2020 | 08/29/2020 |
| Hold initial public meeting to discuss scope and application of the Quality Assurance Program. | 08/31/2020 | N/A ²² |
| Issue RAIs on the Step 1 review topics (ADAMS Accession Nos. ML20265A346 , ML20267A529 , ML20265A121 , ML20265A123). | 09/23/2020 | 09/23/2020 |

Projected Activities for the Next Two Reporting Periods (Q1 and Q2 FY 2021)²³

| Projected Oklo COL Review Activities | Projected Completion Date |
|---|---------------------------|
| Complete an audit on the methodology used in the analysis and evaluation of the maximum credible accident. | 10/21/2020 ²⁴ |
| Hold second public meeting to discuss the methodology used in the analysis and evaluation of the maximum credible accident. | 10/31/2020 |
| Hold second public meeting to discuss the process to be used for classifying SSCs in the Aurora design and the treatment for each classification of SSCs. | 10/31/2020 |
| Conduct audits for Step 1 review topics ²⁵ related to maximum credible accident, classification of SSCs, and applicability of regulations | 10/30/2020 |
| Complete initial outreach to local stakeholders (e.g., Governor's office, Congressional staff, Tribes) regarding the environmental impacts. | 10/31/2020 |
| Complete Step 1 and document the NRC staff's understanding of alignment with Oklo on key technical issues. | 11/05/2020 |
| Issue letter documenting the status of all Step 1 issues. | 11/05/2020 |
| Issue Notice of Intent to Prepare an Environmental Impact Statement and initiate project scoping process for the Oklo Aurora design. | 12/31/2020 |

2-9 Reactor Oversight Process

The ROP is a risk-informed, performance-based oversight program that contains provisions for continuous self-assessment and improvement. The staff developed recommendations to make changes to the ROP in SECY-19-0067, "Recommendations for Enhancing the Reactor Oversight Process," (ADAMS Accession No. [ML19070A050](#)) which are being considered by the

²² This activity was projected for FY2020 Q4 in the FY 2020 Q3 report. The staff plans to address this issue instead through the RAI process and subsequent inspection.

²³ The public meeting dates are subject to change. The NRC's public Web site is updated periodically to show the status of the meetings (<https://www.nrc.gov/reactors/new-reactors/col/aurora-oklo/public-meetings.html>).

²⁴ The projected date for this audit was extended to allow the staff additional time to review the applicant's audit materials.

²⁵ The FY2020 Q3 report included a planned activity to conduct an audit on the Quality Assurance program. That has been expanded in this report to conduct audits as needed for all Step 1 issues.

Commission. The staff 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 annual ROP self-assessment program.

Activities Planned and Completed for the Reporting Period (Q4 FY 2020)

| Reactor Oversight Process Activities | Projected Completion Date | Completion Date |
|--|---------------------------|-----------------|
| Complete effectiveness review of the cross-cutting issues process and issue report (ADAMS Accession No. ML20239A806). | 10/31/2020 | 09/21/2020 |

Projected Activities for the Next Two Reporting Periods (Q1 and Q2 FY 2021)

| Projected Reactor Oversight Process Activities | Projected Completion Date |
|--|---------------------------|
| Issue revision to Inspection Procedure 95001, “Supplemental Inspection Response to Action Matrix Column 2 Inputs.” | 10/31/2020 |
| Complete comprehensive review of problem identification and resolution program and issue report. | 11/27/2020 ²⁶ |
| Complete Annual Regional ROP Implementation Audit (Region IV) and issue audit report. | 11/30/2020 |
| Conduct effectiveness review of the Very Low Safety Significance Issue Resolution process and issue a report. | 03/31/2021 |
| Conduct effectiveness review of Action Matrix Change for White Findings and issue a report. | 03/31/2021 |
| Complete CY 2020 ROP Self-Assessment and issue paper to the Commission. | 03/31/2021 |

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....”²⁷ 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 clarified its backfitting and issue finality policy as well as its policy on “forward fits,” which are requirements or staff interpretations of requirements imposed as a condition of agency approval of a licensee request that result in the modification of or

²⁶ Completion of the comprehensive review was previously scheduled for September 30, 2020. The completion date was delayed to seek additional internal review and feedback on the preliminary conclusions.

²⁷ 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.

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.” The NRC completed draft NUREG-1409, “Backfitting Guidelines,” Revision 1, in March 2020 and issued a notice of availability in the *Federal Register* 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 forward fitting policy, including how to process violations that are contested based on unjustified backfitting.

Activities Planned and Completed for the Reporting Period (Q4 FY 2020)

| Backfit Activities | Projected Completion Date | Completion Date |
|--|----------------------------------|------------------------|
| Receive public comments on draft NUREG-1409, Revision 1. | 07/31/2020 | 07/31/2020 |

Projected Activities for the Next Two Reporting Periods (Q1 and Q2 FY 2021)

| Projected Backfit Activities | Projected Completion Date |
|--|----------------------------------|
| Evaluate public comments and prepare NUREG-1409, Revision 1 for internal agency concurrence. | 11/30/2020 ²⁸ |
| Provide NUREG-1409, Revision 1 to the Commission for review. | 03/31/2021 ²⁹ |

2-11 Risk-Informed Activities

The NRC staff continues to make progress to advance the use of risk insights more broadly to inform decisionmaking. 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.³⁰ The NRC staff has started implementing the agencywide Be riskSMART risk-informed decisionmaking framework to inform a broad range of decisions spanning technical, legal, and corporate arenas. As part of the Be riskSMART initiative, the staff is tracking its use of risk-informed decisionmaking.

²⁸ The previous projected completion date for this activity was September 30, 2020. Additional time is needed to address the over 200 individual public comments received on the draft NUREG. The NRC expects that resolution of those comments will result in substantially improved and clarified final NUREG-1409 guidance.

²⁹ The previous projected date for this activity was December 31, 2020, and has been extended for the reasons discussed in the prior footnote.

³⁰ 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>.

Activities Planned and Completed for the Reporting Period (Q4 FY 2020)

| Risk-Informed Activities | Projected Completion Date | Completion Date |
|--|---------------------------|-----------------|
| Issue a letter on industry use of focused cyber security guidance to better risk-inform rule implementation for important-to-safety and safety-related digital assets, based on lessons learned from implementation and oversight of the NRC's cyber security requirements (ADAMS Accession No. ML20223A256). | 08/30/2020 | 08/28/2020 |
| Provide a Commission paper with options for a risk-informed, holistic approach to credit realistic law enforcement response, operator action, and use of Flexible Coping Strategies (FLEX) ³¹ equipment. ³² | 08/31/2020 | 07/30/2020 |
| Coordinate and participate in a FLEX Summit with NEI and Electric Power Research Institute covering topics such as FLEX operating experience and the use of FLEX beyond the original purpose, such as crediting of FLEX equipment for NRC licensing and oversight and modeling in probabilistic risk assessments. | 09/10/2020 | 09/10/2020 |
| Issue a letter on industry use of focused cyber security guidance to better risk-inform rule implementation for balance of plant digital assets, based on lessons learned from implementation and oversight of the NRC's cyber security requirements (ADAMS Accession No. ML20209A442). | 09/30/2020 | 08/14/2020 |
| Document the Be riskSMART risk-informed decisionmaking framework in agency guidance. | 09/30/2020 | 09/30/2020 |
| Modify risk-informed decisionmaking curriculum to incorporate the Be riskSMART framework. | 09/30/2020 | 09/30/2020 |
| Complete decision-making on all seismic probabilistic risk assessments submitted in response to the 10 CFR 50.54(f) letter (ADAMS Accession No. ML12053A340) as part of the agency's post-Fukushima actions. | 09/30/2020 | 09/24/2020 |
| Publish Draft Revision 1 to NUREG/CR-7002, "Criteria for Development of Evacuation Time Estimate Studies" for public comment (ADAMS Accession No. ML20233A7002). | 01/04/2021 | 08/27/2020 |

³¹ FLEX is the nuclear industry's term for the strategies that were implemented in response to NRC Order EA-12-049 (ADAMS Accession No. [ML12054A735](#)), which was issued following the earthquake and tsunami at the Fukushima Dai-ichi nuclear power plant in March 2011, to establish requirements for mitigation strategies for beyond-design-basis external events.

³² This paper is not publicly available.

Projected Activities for the Next Two Reporting Periods Q1 and Q2 FY 2021

| Projected Risk-Informed Activities | Projected Completion Date |
|---|---------------------------|
| Finalize Risk-Informed Process for Exemptions (RIPE) initiative and associated NRC staff guidance. RIPE leverages current regulations and risk initiatives to allow reactor licensees to justify plant-specific exemptions using a streamlined NRC review process (ADAMS Accession No. ML20161A040). | 10/30/2020 ³³ |
| Brief ACRS on proposed final Draft Revision 3 to RG 1.200, “An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk- Informed Activities” for public comment (ADAMS Accession No. ML19308B636). | 11/05/2020 |
| Provide training to NRC management and staff by Professor Malcolm Sparrow related to risk and regulatory strategies. | 11/06/2020 |
| Publish draft regulatory basis for rulemaking to align licensing processes and apply lessons learned from new reactor Licensing for public comment (ADAMS Accession No. ML19161A169). | 12/16/2020 |
| Implement the near-term recommendations on building a smarter fuel cycle licensing program (ADAMS Accession No. ML20184A267). | 11/30/2020 |
| Issue draft Revision 2 of RG 1.205, “Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants,” for public comment (ADAMS Accession No. ML20231A856). | 12/18/2020 |
| Implement the recommendations on building a smarter fuel cycle inspection program (ADAMS Accession No. ML20183A242). | 12/31/2020 |
| Implement revisions to the independent spent fuel storage installation inspection guidance. | 12/31/2020 |
| Publish Integrated Human Error Analysis System for Event and Condition Analysis Human Reliability Analysis Method workshop report. | 12/31/2020 |
| Complete review of LAR to revise the emergency plans for SNC fleet to change emergency response organization staffing composition and extend staff au | 03/23/2021 |
| Issue Revision 3 of RG 1.200, “An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities” (ADAMS Accession No. ML20238B871). | 03/31/2021 |

2-12 Coronavirus Disease 2019 Public Health Emergency

On January 31, 2020, the U.S. Department of Health and Human Services declared a PHE for the United States to aid the nation’s healthcare community in responding to COVID-19. On March 11, 2020, the COVID-19 outbreak was characterized as a pandemic by the World Health Organization. On that same day, the NRC COVID-19 Task Force began developing and implementing precautionary measures in response to the PHE 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. Throughout the PHE, the NRC continues to protect public health and safety and the environment. The NRC is monitoring the effects of the COVID-19 PHE 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 appropriate steps as needed.

³³ The original projected date for the RIPE initiative and guidance has been extended to allow for additional refinement and review.

On September 15, 2020, the NRC staff briefed the Commission on the NRC's response to the COVID-19 PHE, including licensing and oversight activities, the use of technology, public engagement, and strategies to overcome ongoing and emergent challenges (ADAMS Accession No. [ML20253A200](#)). This public meeting is part of the NRC's ongoing efforts to ensure transparency during the COVID-19 PHE.

NRC Re-Occupancy of Facilities

On June 15, 2020, the NRC moved to Phase 1 of the Re-Occupancy Plan at NRC headquarters, all four regions, and the Technical Training Center (TTC). During Phase 1, building occupancy only moderately increased thereby facilitating NRC efforts to be consistent with CDC, Occupational Safety and Health Administration, and OMB health and safety guidance (e.g., social distancing and use of personal protective supplies). On July 12, 2020, NRC headquarters, Region I, and Region III transitioned to Phase 2 while Region II, Region IV, and the TTC remain in Phase 1 due to consideration of State and local conditions. Enhanced screening (i.e., temperature checks and access questions) does not apply to facilities in Phase 2, and building occupants are instead requested to self-screen prior to coming to an NRC facility. No changes to the NRC's re-occupancy status occurred during this reporting period.

Licensing and Oversight Items of Interest

The NRC staff has taken a number of steps to identify areas of our regulations that are challenging during the PHE, 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 has communicated the processes available to licensees for requesting these flexibilities in a transparent way through public communications, such as teleconferences 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/>).

From April through September 2020, the agency noticed 431 public meetings in the Washington, DC area and in States with NRC-licensed or proposed facilities to address a range of NRC issues. Due to health and safety concerns related to COVID-19, 417 of these meetings were held virtually or via teleconference. The NRC has also developed portions of its Web site devoted to the regulatory activities taken in response to the COVID-19 PHE. 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. Between July 1, 2020, and September 30, 2020, the NRC issued 61 licensing actions granting temporary flexibilities to maintain the safe and secure operation of nuclear reactor and nuclear materials licensees. A complete list of licensing actions approved by the NRC in response to the COVID-19 PHE is available on the NRC public Web site at <https://www.nrc.gov/about-nrc/covid-19/>.

On October 15, 2020, the NRC hosted a public meeting with stakeholders, including representatives from NEI, NextEra, Entergy, and the public, to discuss and solicit feedback on potential future licensing and regulatory issues to address the COVID-19 PHE going forward (ADAMS Accession [ML20269A175](#)). The NRC staff emphasized that each request submitted by industry will be considered on a case- and situation-specific basis, and the staff will consider applicable exemption standards to ensure that adequate safety and security are preserved.

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

| Licensee Type | Number of COVID-19 Requests Approved During the Reporting Period | Average Number of Days to Approve COVID-19 Requests ³⁴ |
|---|--|---|
| Power Reactor | 51 | 36 |
| Non-Power Reactor | 2 | 15 |
| 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 | 0 | N/A |
| Medical, Industrial and Academic Uses of Nuclear Materials and Agreement States | 8 | 24 |

Enclosure 3 – Summary of Activities

3-1 Reactor Oversight Process Findings

The table below provides the CY ROP findings for the YTD and 3-year rolling metrics.

| Location | Number of Findings | CY 2017 | CY 2018 | CY 2019 | CY 2020 (YTD) |
|-------------------|----------------------------------|------------|------------|------------|------------------|
| Nationally | Total | 560 | 478 | 440 | 149 |
| Region I | Green | 126 | 107 | 95 | 29 |
| | White | 2 | 1 | 0 | 0 |
| | Yellow | 0 | 0 | 0 | 0 |
| | Red | 0 | 0 | 0 | 0 |
| | Greater Than Green Security | 0 | 0 | 0 | 0 |
| | Total | 128 | 108 | 95 | 29 |
| | No. of Units Operating During CY | 25 | 25 | 24 | 22 ³⁵ |
| Region II | Green | 119 | 113 | 110 | 37 |
| | White | 3 | 0 | 1 | 1 |
| | Yellow | 0 | 0 | 0 | 0 |
| | Red | 0 | 0 | 0 | 0 |
| | Greater Than Green Security | 2 | 0 | 0 | 1 |
| | Total | 124 | 113 | 111 | 39 |
| | No. of Units Operating During CY | 33 | 33 | 33 | 33 |

³⁴ The average is calculated based on the date received and date completed, which may include review time of supplemental information submitted after the date received.

³⁵ The reduction of two units for CY 2020 reflects the permanent shutdown of Pilgrim Nuclear Station on May 31, 2019, and Three Mile Island, Unit 1, on September 20, 2019. Additionally, Indian Point Nuclear Generating Unit 2 permanently ceased operations on April 30, 2020, but will remain counted in this table until the conclusion of CY 2020 as it transitions to decommissioning.

| Location | Number of Findings | CY 2017 | CY 2018 | CY 2019 | CY 2020 (YTD) |
|------------|----------------------------------|------------|------------|------------|---------------|
| Region III | Green | 133 | 110 | 96 | 22 |
| | White | 4 | 2 | 1 | 0 |
| | Yellow | 0 | 0 | 0 | 0 |
| | Red | 0 | 0 | 0 | 0 |
| | Greater Than Green Security | 0 | 0 | 0 | 0 |
| | Total | 137 | 112 | 97 | 22 |
| | No. of Units Operating During CY | 23 | 23 | 23 | 23 |
| Region IV | Green | 167 | 145 | 137 | 61 |
| | White | 2 | 0 | 0 | 0 |
| | Yellow | 0 | 0 | 0 | 0 |
| | Red | 0 | 0 | 0 | 0 |
| | Greater Than Green Security | 2 | 0 | 0 | 0 |
| | Total | 171 | 145 | 137 | 61 |
| | 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 NRC staff issues a final safety evaluation. These totals do not include LARs, as they are addressed separately in section 3-3. The total inventory of licensing actions is the number open at the end of the quarter.

Operating Reactors³⁶

| 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 ³⁷ | Percentage of Licensing Actions Completed Prior to the Established Schedule ³⁸ |
|------------------|-----------------|---|---|---|---|
| Q1 FY 2020 | 159 | 40 | 44 | 100% | 77% |
| Q2 FY 2020 | 173 | 96 | 82 | 100% | 94% |
| Q3 FY 2020 | 191 | 213 | 203 | 100% | 93% |
| Q4 FY 2020 | 238 | 233 | 186 | 100% | 98% |

³⁶ The table is updated to include results obtained after the prior reporting periods using a new data analytics tool that compiles real-time results. The tool replaces a manual process and was developed as part of an agencywide effort to provide improved tracking and data.

³⁷ Consistent with previous reports, this excludes unusually complex and Fukushima-related licensing actions accepted or initiated prior to July 13, 2019.

³⁸ The established scheduled 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 |
|------------------|-----------------|---|---|---|---|
| Q1 FY 2020 | 5 | 2 | 0 | N/A | N/A |
| Q2 FY 2020 | 3 | 0 | 1 | 100% | 100% |
| Q3 FY 2020 | 8 | 5 | 0 | N/A | N/A |
| Q4 FY 2020 | 3 | 1 | 6 | 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 |
|------------------|-----------------|---|---|---|---|
| Q1 FY 2020 | 6 | 3 | 1 | 100% | 100% |
| Q2 FY 2020 | 6 | 4 | 4 | 100% | 100% |
| Q3 FY 2020 | 4 | 3 | 5 | 100% | 100% |
| Q4 FY 2020 | 3 | 1 | 2 | 100% | 100% |

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, the LARs referenced in this section include “requested activities of the Commission” for which the NRC staff issues 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).

Operating Reactors³⁹

| 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 ⁴⁰ | Percentage of LAR Reviews Completed Prior to the Established Schedule ⁴¹ |
|------------------|-----------------|--|---|---|---|
| Q1 FY 2020 | 394 | 97 | 122 | 100% | 92% |
| Q2 FY2020 | 343 | 84 | 138 | 100% | 92% |
| Q3 FY 2020 | 382 | 125 | 95 | 100% | 96% |
| Q4 FY 2020 | 362 | 125 | 145 | 100% | 91% |

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 |
|------------------|-----------------|--|---|---|---|
| Q1 FY 2020 | 12 | 4 | 6 | 100% | 100% |
| Q2 FY 2020 | 6 | 2 | 8 | 100% | 100% |
| Q3 FY 2020 | 5 | 3 | 4 | 100% | 100% |
| Q4 FY 2020 | 3 | 1 | 3 | 100% | 100% |

Fuel Facilities⁴²

| 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 |
|------------------|-----------------|--|---|---|---|
| Q1 FY 2020 | 12 | 10 | 4 | 100% | 100% |
| Q2 FY 2020 | 11 | 5 | 6 | 100% | 100% |
| Q3 FY 2020 | 12 | 14 | 13 | 100% | 93% |
| Q4 FY 2020 | 14 | 7 | 5 | 100% | 80% |

³⁹ The table is updated to include results obtained after the prior reporting periods using a new data analytics tool that compiles real-time results. The tool replaces a manual process and was developed as part of an agencywide effort to provide improved tracking and data analytics.

⁴⁰ Consistent with previous reports, this excludes unusually complex and Fukushima-related LARs accepted or initiated prior to July 13, 2019.

⁴¹ The established scheduled is the schedule communicated to the licensee and made publicly available at the completion of the acceptance review.

⁴² Corrections were made to previous quarters due quality checking older records and formats, to present the most accurate data to date.

Unusually Complex LARs⁴³

The staff has identified certain LARs (accepted for review prior to July 13, 2019) as unusually complex. Consistent with the previous reports, these unusually complex submittals are not included in the internal performance measures as they do not lend themselves to realistic schedule forecasting. Rather, they are given escalated management attention to ensure progress is made toward resolving outstanding issues and completing the reviews in a timely manner.

| Unusually Complex LAR Description | Exclusive Justification | Age (Months) |
|--|---|---------------------|
| North Anna Units 1 and 2 –Revision of the Small Break Loss of Coolant Accident (SBLOCA) Analytical Methodologies. | Involves multiple plant specific SBLOCA methodologies. | 25 |
| Surry Units 1 and 2 –Revision of Analytical Methodologies for SBLOCA. | Involves multiple plant specific SBLOCA methodologies. | 25 |
| Seabrook Unit 1 – Exemption to support resolution of GL 2004-02, “Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors.” | Exemption requested relies on completion of the significant review of a unique, plant-specific methodology to resolve issues from GL 2004-02. | 25 ⁴⁴ |
| Point Beach Units 1 and 2 – Exemption to support resolution of GL 2004-02, “Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors.” | Exemption requested relies on completion of the significant review of a unique, plant-specific methodology to resolve issues from GL 2004-02. | 23 ⁴⁵ |
| Shearon Harris – Request to modify departure from nucleate boiling ratio safety limit to support transition to a new fuel design. | Unique, first of a kind review based on a correlation with a fuel of a different design. | 15 ⁴⁶ |

3-4 Research Activities⁴⁷

Summary of New Research Projects⁴⁸

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

⁴³ There were no unusually complex LARs for New Reactors or Fuel Facilities within the reporting period.

⁴⁴ The Seabrook LAR was determined to be unusually complex during the technical review.

⁴⁵ The Point Beach LAR was determined to be unusually complex during the technical review.

⁴⁶ The Shearon Harris LAR was determined to be unusually complex during the technical review.

⁴⁷ Provides information about projects that were started during the reporting period and exceeded 300 staff hours or \$500K of program support for the duration of the project (consistent with previous reports).

⁴⁸ 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.

| Regulatory Research Supporting Licensing of Near-Term Accident Tolerant Fuel | |
|---|---|
| Importance to the NRC Mission | The NRC staff is preparing to review license applications for near-term ATF concepts proposed by nuclear fuel vendors. These licensing activities may include the development of new regulatory guidance documents, topical report reviews, and confirmatory calculations. To efficiently support these activities, the staff is enhancing its capability to analyze the performance of these fuels for fresh fuel transportation, spent fuel dry storage and transportation, and support the agency's ATF Project Plan through external engagements. |
| Planned Activities: | The scope of work from FY 2020 through FY 2023 includes activities in support of the safety review of transportation packages for fresh/spent ATF and the dry storage of spent ATF. This work addresses fresh/spent ATF with uranium-235 (U-235) enrichments less than 5 percent by weight and includes commissioning the formation of a phenomenon identification and ranking table on spent fuel storage and transportation of Cr-coated Zircaloy and FeCrAl claddings. |
| Requesting Business Line | Spent Fuel Storage and Transportation |
| Estimated Completion | FY 2023 |
| Estimate of Total Research Resources | \$0.6M for program support and 0.6 FTE |

| Regulatory Research Supporting Licensing of Increased Enrichment and Higher Burnup LWR Fuels | |
|---|---|
| Importance to the NRC Mission | The NRC staff is preparing to review license applications for the Phase 1 (~67 GWd/mtU rod average) and Phase 2 (~75 GWd/mtU rod average) higher burnup activities, along with increased enrichments (greater than 5 percent by weight in U-235), being pursued by nuclear fuel vendors and industry. These licensing activities support the development of new regulatory guidance documents, topical report reviews, and confirmatory calculations. To efficiently support these activities, the staff is enhancing its ability to analyze the performance of these fuels for fresh fuel transportation, spent fuel storage and transportation, and to support the agency's Accident Tolerant Fuel Project Plan through external engagements. |
| Planned Activities: | The scope of these research includes activities in support of the safety review of transportation packages for fresh/spent fuel and the dry storage of fuel. This work ensures that the staff and the NRC's confirmatory codes are ready for application reviews on fresh fuels with increased U-235 enrichments and spent fuel storage and transportation with increased U-235 enrichments and higher burnups through technical reports, assessment reports, confirmatory calculations, and expert elicitation on the technical basis of higher burnup and increased enrichment. |
| Requesting Business Line | Spent Fuel Storage and Transportation |
| Estimated Completion | FY 2023 |

| Regulatory Research Supporting Licensing of Increased Enrichment and Higher Burnup LWR Fuels | |
|---|--|
| Estimate of Total Research Resources | \$4.5M for program support and 1.3 FTE |

| Technical Assistance for Research on Innovative Methods and Technologies to Enhance Seismic Safety for Design and Construction of Commercial Reactors | |
|--|--|
| Importance to the NRC Mission | This project supports the licensing review of advanced non-LWRs by addressing seismic safety within the Licensing Modernization Project (LMP) framework, and by identifying and evaluating technical criteria for regulatory guidance for the design and review of seismic isolation technologies included in licensing applications for commercial nuclear power plants. |
| Planned Activities: | Development of a technology-inclusive, risk-informed and performance-based pathway for advanced non-LWR to address seismic safety within the LMP framework. The scope of this research includes (1) evaluating feasibility and adequacy of potential technical criteria through demonstration studies, (2) performing communication and outreach activities to help reach consensus with pertinent stakeholders on a viable and practical technology-inclusive, risk-informed, and performance-based approach forward for advanced non-LWR seismic safety (3) developing associated implementation guidance, and (4) identifying potential regulatory improvements for future rulemaking activities. Other activities include identifying and evaluating technical criteria for regulatory guidance for the design and review of seismic isolation technologies included in licensing application for commercial nuclear power plants. |
| Requesting Business Line | New Reactors |
| Estimated Completion | FY 2023 |
| Estimate of Total Research Resources | \$0.9M for program support |

Summary of Completed Research Projects⁴⁹

During the reporting period, Office of Nuclear Regulatory Research completed the following projects:

| Development of the Technical Basis for the Evaluation of Neutron Absorber Materials in Spent Fuel Pools | |
|--|---|
| Importance to the NRC Mission | Provided technical information and data to support regulatory decisions related to the use and monitoring of aluminum-based neutron absorber materials in spent fuel pools. |

⁴⁹ 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.

| Development of the Technical Basis for the Evaluation of Neutron Absorber Materials in Spent Fuel Pools | |
|--|--|
| Research Results or Findings | This research showed that aluminum-based neutron absorber materials qualification programs addressed the relevant degradation mechanisms and that the current monitoring program guidance is adequate for the intended service life of neutron absorber panels. Three reports were published under the project: “Assessment of Aluminum-Based Neutron Absorber Materials Qualification Testing and Surveillance Monitoring Programs” (ADAMS Accession No. ML19353A030); “Addressing Uncertainties in “SuperBADGER” Measurements at the Zion Nuclear Power Plant Spent Fuel Pool on December 5-8, 2014, Revision 1” (ADAMS Accession No. ML19318F214); and “Characterization and Analysis of Boral from the Zion Nuclear Power Plant Spent Fuel Pool” (ADAMS Accession No. ML19155A215). |
| Duration of the Project | 6 years |
| Estimate of Total Research Resources | \$1.1M for program support and 4.5 FTE |

3-5 Fees Billed

The tables below provide information on Part 170 fees billed for each fee class. For each fee class, the staff compared the fees billed to the receipts estimated in the annual fee rule.⁵⁰

| Fee Class | FY 2019 Part 170 Receipts Final – Annual Fee Rule (\$M) | Part 170 Billed in FY 2020 Q4 (\$M) | Total Part 170 – Billed in FY 2020 (\$M) |
|--|--|--|---|
| Fuel Facilities | \$6.8 | \$2.9 | \$6.4 |
| Generic Decommissioning | \$3.6 | \$1.8 | \$3.7 |
| Materials Users ⁵¹ | \$1.0 | \$0.3 | \$1.0 |
| Operating Power Reactors | \$186.7 | \$81.8 | \$177.1 |
| Research and Test Reactors | \$3.0 | \$1.9 | \$3.2 |
| Spent Fuel Storage / Reactor Decommissioning | \$15.9 | \$6.2 | \$11.7 |
| Transportation | \$2.8 | \$1.0 | \$2.3 |
| Uranium Recovery | \$0.4 | \$0.1 | \$0.4 |

Significant Ongoing Licensing Actions

The following table includes a comparison of the fees billed to projected resources for the NuScale SMR design certification review, subsequent license renewal application reviews, Oklo’s Aurora COL application, and the SHINE Medical Technologies, LLC (SHINE) operating

⁵⁰ In order to mitigate the financial impacts and economic disruptions to licensees caused by the COVID-19 PHE, the NRC deferred all invoices scheduled to be issued in April, May, and June 2020 until July 22, 2020.

⁵¹ Materials Users—Billed as flat fee applications and included in the estimates and billed.

license application review. The subsequent renewed licenses for Turkey Point Units 3 and 4 and Peach Bottom Units 2 and 3 were issued on December 4, 2019, and March 5, 2020, respectively.

| Docket | Project Name | Projected Resources (\$M) ⁵² | Fees Billed to Date (\$M) ⁵³ |
|---|---|---|---|
| NuScale Power Reactor 05200048 | NuScale SMR Design Certification Application Review | \$66.0 ⁵⁴ | \$56.2 |
| NuScale Power Reactor 99902043 | NuScale SMR Topical Report Reviews (Only those that directly support the design certification review) | | \$8.3 |
| Peach Bottom Units 2 and 3 05000277/05000278 | Peach Bottom Units 2 and 3 Subsequent License Renewal Application — Safety Review | \$4.3 | \$4.3 |
| Peach Bottom Units 2 and 3 05000277/05000278 | Peach Bottom Units 2 and 3 Subsequent License Renewal Application — Environmental Review | \$1.5 | \$1.6 |
| Surry Units 1 and 2 05000280/05000281 | Surry Units 1 and 2 Subsequent License Renewal Application — Safety Review | \$4.9 | \$4.6 |
| Surry Units 1 and 2 05000280/05000281 | Surry Units 1 and 2 Subsequent License Renewal Application — Environmental Review | \$1.4 | \$1.9 ⁵⁵ |
| SHINE Medical Technologies, LLC 05000608 | SHINE Medical Isotope Production Facility Operating License Application Review — Safety and Environmental Reviews | \$6.2 ⁵⁶ | \$2.7 |

⁵² 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 \$275/hour.

⁵³ 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 July, August, and September, would be invoiced to the licensee/applicant in October. Therefore, the total billed amounts listed in Table 3-5 reflects costs for NRC work performed through June 2020.

⁵⁴ When the NuScale design certification application was submitted, the NRC staff did not provide projected resources to applicants. This number was calculated for this report using fees billed to date (for the NuScale design certification application and supporting topical reports - \$58.1M) plus a projection of the fees that the NRC staff expects to bill through the end of the technical review in September 2020 (\$7.9M). This estimate is based on critical assumptions such as high quality and timely submittals by NuScale for the remainder of the review. Costs associated with pre-application activities are not included.

⁵⁵ When the Surry subsequent license renewal application was accepted for review on December 3, 2018, the NRC estimate was \$6.3M. At that time, the NRC had not yet completed the review of the first subsequent license renewal application to provide a basis for comparison. The staff provided a revised estimated cost of \$7.6M.

⁵⁶ The projected resource estimate was provided to SHINE by letter dated April 30, 2020 (ADAMS Accession No. [ML20114E315](#)).

| Docket | Project Name | Projected Resources (\$M) ⁵² | Fees Billed to Date (\$M) ⁵³ |
|----------------------|--|---|---|
| Oklo Aurora 05200049 | Oklo Aurora COL Application – Safety Review | \$0.5 ⁵⁷ | \$0.0 ⁵⁸ |
| Oklo Aurora 05200049 | Oklo Aurora COL Application – Environmental Review | \$0.2 | \$0.0 |

3-6 Requests for Additional Information

The table below provides information on 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 ⁵⁹ |
|---|--|---|---|---|
| Operating Reactors | 518 | 310 | 226 | 163 |
| Non-Power Production and Utilization Facilities ⁶⁰ | 450 | 10 | 31 | 10 |
| Design Certifications for New Reactors | 0 | 0 | 0 | 0 |
| Early Site Permits for New Reactors ⁶¹ | N/A | N/A | N/A | N/A |
| Combined Licenses for New Reactors | 10 | 10 | 0 | 0 |
| Fuel Facilities | 148 | 136 | 20 | 13 |
| Power Reactor Decommissioning | 38 | 16 | 10 | 5 |
| Research and Test Reactor Decommissioning | 6 | 0 | 6 | 0 |

⁵⁷ When the Oklo COL application was accepted, the NRC indicated that the staff plans to complete the review in a two-step process. This table only contains the projected resources to complete the identified Step 1 safety and environmental aspects of the review.

⁵⁸ Fees billed to date for the Oklo Aurora Combined License Application safety and environmental review are smaller than the number of significant figures reported.

⁵⁹ 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.

⁶⁰ 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.

⁶¹ There are no early site permit applications 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 ⁵⁹ |
|--|--|---|---|---|
| Spent Fuel | 746 | 46 | 58 | 11 |
| Materials | 6 | 0 | 0 | 0 |
| Pre-Application Activities for Advanced Reactors | 27 | 0 | 0 | 14 |

3-7 Workforce Development and Management

FY 2020 Staffing by Office⁶²

| | FY 2020 Budget | FTE Utilization 06/21/20 – 08/01/20 | FTE Utilization 08/02/20 – 08/29/20 | FTE Utilization 08/30/20 – 09/26/20 | FTE Utilization as of 09/26/20 | Delta (Q4 FTE Utilization – FY 2020 Budget) | End of Year (EOY) ⁶³ Projection w/ Personnel Actions | Delta (EOY Projection – FY 2020 Budget) |
|-----------------------------|----------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------------|---|---|---|
| Totals | 2979.0 | 326.2 | 215.2 | 213.0 | 2789.7 | -189.3 | 2789.7 | -189.3 |
| COMM | 45.0 | 4.0 | 2.7 | 2.7 | 30.3 | -14.7 | 30.3 | -14.7 |
| OIG | 63.0 | 6.7 | 4.4 | 4.2 | 55.2 | -7.8 | 55.2 | -7.8 |
| Totals Other Offices | 2871.0 | 315.5 | 208.0 | 206.1 | 2704.2 | -166.8 | 2704.2 | -166.8 |
| OCFO | 96.0 | 10.7 | 7.0 | 6.9 | 90.7 | -5.3 | 90.7 | -5.3 |
| OGC | 96.0 | 10.5 | 7.0 | 6.9 | 91.6 | -4.4 | 91.6 | -4.4 |
| OCA | 11.0 | 1.2 | 0.8 | 0.8 | 10.4 | -0.6 | 10.4 | -0.6 |
| OCAA | 8.0 | 0.8 | 0.5 | 0.5 | 6.4 | -1.6 | 6.4 | -1.6 |
| OPA | 15.0 | 1.5 | 1.0 | 1.0 | 13.5 | -1.5 | 13.5 | -1.5 |
| SECY | 18.0 | 2.0 | 1.3 | 1.3 | 16.0 | -2.0 | 16.0 | -2.0 |
| OIP | 35.0 | 3.8 | 2.5 | 2.5 | 32.9 | -2.1 | 32.9 | -2.1 |
| ASLBP | 24.0 | 2.5 | 1.6 | 1.6 | 22.0 | -2.0 | 22.0 | -2.0 |
| ACRS | 24.0 | 3.2 | 1.9 | 2.2 | 27.2 | 3.2 | 27.2 | 3.2 |
| OEDO | 23.0 | 2.4 | 1.6 | 1.6 | 20.7 | -2.3 | 20.7 | -2.3 |
| NRR | 601.3 | 63.9 | 41.9 | 40.9 | 560.7 | -41.6 | 560.7 | -41.6 |
| NMSS | 296.2 | 36.0 | 23.9 | 23.5 | 308.7 | 12.5 | 308.7 | 12.5 |
| RES | 205.4 | 22.4 | 14.7 | 14.5 | 188.1 | -16.3 | 188.1 | -16.3 |
| NSIR | 158.5 | 18.9 | 12.2 | 12.2 | 159.6 | 1.1 | 159.6 | 1.1 |
| R-I | 182.3 | 19.5 | 12.8 | 12.8 | 168.4 | -13.9 | 168.4 | -13.9 |
| R-II | 235.7 | 24.6 | 16.5 | 16.2 | 216.6 | -19.1 | 216.6 | -19.1 |
| R-III | 178.9 | 19.8 | 13.0 | 12.9 | 171.3 | -7.6 | 171.3 | -7.6 |
| R-IV | 166.1 | 18.9 | 12.5 | 12.8 | 161.1 | -5.0 | 161.1 | -5.0 |
| OE | 30.6 | 3.4 | 2.3 | 2.3 | 29.9 | -0.7 | 29.9 | -0.7 |
| OI | 38.0 | 4.5 | 3.0 | 3.0 | 39.7 | 1.7 | 39.7 | 1.7 |
| OCIO | 171.0 | 17.7 | 11.7 | 11.7 | 151.9 | -19.1 | 151.9 | -19.1 |
| ADM | 131.0 | 13.5 | 8.9 | 8.9 | 115.0 | -16.0 | 115.0 | -16.0 |
| SBCR | 13.0 | 1.4 | 0.9 | 0.9 | 10.9 | -2.1 | 10.9 | -2.1 |
| OCHCO | 112.0 | 12.4 | 8.4 | 8.2 | 88.7 | -23.3 | 88.7 | -23.3 |

⁶² Some numbers might not add due to rounding.

⁶³ Based on FTE utilization as of September 26, 2020.

| | FY 2020 Budget | FTE Utilization 06/21/20 – 08/01/20 | FTE Utilization 08/02/20 – 08/29/20 | FTE Utilization 08/30/20 – 09/26/20 | FTE Utilization as of 09/26/20 | Delta (Q4 FTE Utilization – FY 2020 Budget) | End of Year (EOY) ⁶³ Projection w/ Personnel Actions | Delta (EOY Projection – FY 2020 Budget) |
|-----|----------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------------|---|---|---|
| CSU | 1.0 | 0.2 | 0.2 | 0.2 | 2.2 | 1.2 | 2.2 | 1.2 |

3-8 Inspection Activities

The table below shows the average number of hours of direct inspection per plant in FY 2020.

Average Reactor Oversight Process Direct Inspection Hours

| Nationwide Per Plant | Column 1 of ROP Action Matrix | Column 2 of ROP Action Matrix | Column 3 of ROP Action Matrix | Column 4 of ROP Action Matrix |
|----------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 1,190 Hours | 1,210 Hours | 892 Hours ⁶⁴ | No Plants in Column 3 | 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 2019 (Hours) ⁶⁵ | CY 2020 (YTD) (Hours) ⁶⁶ |
|-------|---------------------------------------|-------------------------------|-------------------------------------|
| i. | Baseline Inspection | 235,718 | 165,431 |
| ii. | Plant Specific Inspection | 9,096 | 5,458 |
| iii. | Generic Safety Issue Inspections | 3,200 | 573 |
| iv. | Performance Assessment | 1,532 | 1,660 |
| v. | Other Activities | 98,614 | 67,883 |
| vi. | Total Staff Effort | 348,160 | 241,005 |
| vii. | Total Staff Effort Per Operating Site | 6,003 | 4,228 |

3-9 Backfit

Facility-Specific Backfits

There were no facility-specific backfits issued during the reporting period.

Generic Backfits

There were no generic backfits issued during the reporting period.

⁶⁴ Browns Ferry Nuclear Plant (three-unit boiling water reactor site), Vogtle Electric Generating Plant (two-unit pressurized water reactor site), and Surry Power Station Unit 2 (two-unit pressurized water reactor site) were in Column 2 of the ROP Action Matrix year-to-date in CY 2020.

⁶⁵ Total staff effort is divided by 58 sites for CY 2019, due to Pilgrim Nuclear Station permanently ceasing operations on May 31, 2019. Because Three Mile Island, Unit 1, operated for the majority of CY 2019, it was included as an operating site.

⁶⁶ 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.

Backfit Appeals Filed by Licensees and Applicants

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