**Progress on Licensing Applications - Fourth Quarter in Fiscal Year 2020**

1. Elimination of the Backlog of Pending Licensing Actions

The U.S. Nuclear Regulatory Commission (NRC), Office of Nuclear Reactor Regulation (NRR), has eliminated the backlog of licensing actions. In Fiscal Year (FY) 2020, NRR exceeded all operating reactor performance indicators as defined in the NRC's FY 2020 Congressional Budget Justification (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19065A279).

2. Status of License Renewal Reviews

**Power Reactors**

The NRC staff is not reviewing any initial license renewal applications at this time.

During this reporting period, the staff continued the review of a subsequent license renewal (SLR) application to extend operations from 60 to 80 years for Surry Power Station, Units 1 and 2. The staff also completed the acceptance review for a new SLR application for North Anna Power Station, Units 1 and 2.

In addition, there are matters pending before the Commission in adjudicatory proceedings associated with SLRs for which the NRC staff issued licenses before this reporting period. In December 2019, the NRC staff issued renewed licenses for Turkey Point Nuclear Generating Units 3 and 4 to operate for an additional 20 years (up to a total of 80 years); petitions for review of the Atomic Safety and Licensing Board's rulings on contentions in that proceeding are pending before the Commission. In addition, the NRC staff issued renewed licenses for Peach Bottom Atomic Power Station, Units 2 and 3 in March 2020 to operate for an additional 20 years (up to a total of 80 years); an appeal and a motion related to a hearing request in that proceeding is pending before the Commission.

Surry Power Station. Units 1 and 2

On October 15, 2018, Dominion Energy Virginia (Dominion) submitted an SLR application for Surry Power Station, Units 1 and 2.

One outstanding issue remains with respect to Dominion's obligations under the Coastal Zone Management Act (CZMA). Under the CZMA, the applicant must demonstrate that the proposed license renewal is consistent with and complies with enforceable policies of the Virginia Coastal Zone Management Program before the NRC can issue a renewed license. The staff anticipates that it will be able to complete its review of the application within 4 weeks of receipt of the updated information, but that the actual time needed to review the information will be fact-dependent.

The latest development is that on October 8, 2020, Dominion provided a letter (ADAMS Accession No. ML20282A538) to the NRC staff to extend the update for an additional 90 days. As indicated in the table below, the licensee's delay in demonstrating compliance with the CZMA will push the review beyond the staff's estimated 18-month target schedule for completion.

| Surry | | | |
|---|---|---|---|
| Application Review Time from Acceptance Review (Months) | | | 22 |
| Milestone | Original Schedule | Revised Schedule | Completion Date |
| Receive SLRA | 10/15/2018 | | 10/15/2018 |
| Publish Federal Register notice (FRN) - SLR application availability | 11/2018 | | 11/01/2018 |
| Publish FRN - docketing acceptance/rejection and opportunity for hearing | 12/2018 | | 12/17/2018 |
| Publish FRN - notice of intent to prepare an EIS and conduct environmental scoping process | 12/2018 | | 12/21/2018 |
| Public meeting - overview of subsequent license renewal process and environmental scoping process | 01/2019 | | 01/08/2019 |
| Environmental scoping process period ends | 02/2019 | | 01/22/2019 |
| Deadline for filing hearing requests and petitions for intervention | 02/2019 | | 02/15/2019 |
| Issue draft SEIS | 09/2019 | 10/2019 | 10/17/2019 |
| Public meeting - draft SEIS meeting | 10/2019 | 11/2019* | 11/07/2019 |
| Issue draft SER | 11/2019 | | 12/27/2019 |
| End of draft SEIS comment period | 11/2019 | 12/2019 | 12/10/2019 |
| Advisory Committee on Reactor Safeguards (ACRS) subcommittee meeting | 02/2020 | 02/2019 | 02/05/2020 |
| ACRS Full Committee meeting | 03/2020 | 04/2020 | 04/08/2020 |
| Issue final SER | 03/2020 | | 03/09/2020 |
| Issue final SEIS | 03/2020 | 04/2020 | 04/06/2020 |
| Environmental Protection Agency publishes FRN - availability of final SEIS | 03/2020 | 04/2020 | 04/17/2020 |
| Decision - Director, NRR | 06/2020 | TBD | |
| *Public meeting via webinar. | | | |

North Anna, Units 1 and 2

On August 24, 2020, Virginia Electric and Power Company (Dominion) submitted an SLR application for North Anna Power Station, Units 1 and 2 (ADAMS Accession Nos. ML20246G696 and ML20246G698). The staff completed its acceptance review on September 30, 2020, and notified Dominion that the application was acceptable for detailed technical review (ADAMS Accession Nos. ML20281A622 and ML20258A284). The staff is now performing a technical review of the application. The NRC staff has set an estimated target schedule to issue the draft SEIS in August 2021; the final SEIS in February 2022; the draft SER in November 2021; and the final SER in February 2022. Based on this projected schedule, the NRC's final decision on issuing the renewed licenses would be expected in April 2022.

**Research and Test Reactors**

The NRC staff is reviewing license renewal applications for four research and test reactors, and the review of one application is on hold. The current status of these reviews is provided in the table below.

| Research and Test Reactors | | |
|---|---|---|
| Facility Name | Application Date | Status |
| Texas A&M University (TAMU) Aerojet-General Nucleonics (AGN) Reactor | 07/22/1997 (review on hold) | The review of the TAMU AGN reactor license renewal application is on hold pending relocation and reassembly of the reactor. The license currently allows only possession of the reactor. The NRC staff will resume its review of the license renewal application once the licensee submits a revised safety analysis report (SAR). |
| University of Texas at Austin (UTA) | 12/12/2011 (review in progress) | The review is currently scheduled to be completed by July 2021. The schedule may be updated following an audit of the UTA neutronic and thermal-hydraulic analyses. |

| Research and Test Reactors | | |
|---|---|---|
| Facility Name | Application Date | Status |
| University of Massachusetts at Lowell | 10/20/2015 (review in progress) | Based on its operational status due to the COVID-19 public health emergency, the licensee informed the NRC that it would submit, no sooner than July 31, 2020, its application supplement addressing open items related to request for additional information (RAI) responses and supplemental information that the licensee submitted in 2019 and 2020. By letter dated July 16, 2020, the NRC staff stated that it plans to complete its review within 4 months of receipt of the supplement, provided that the staff identifies no open items or other issues. On September 30, 2020, the licensee submitted the supplemental information to the staff for review. The staff currently plans to complete the review in January 2021. |
| North Carolina State University | 02/24/2017 (review in progress) | The licensee submitted a revised SAR in August 2019 and revised technical specifications in September 2019, and the NRC performed a regulatory audit related to the revised technical specifications in November 2019. The staff continues to review the revised SAR, revised technical specifications, and audit findings.<br><br>The review is currently scheduled for completion in October 2021. |
| University of California at Davis | 06/11/2018 (review in progress) | Due to the COVID-19 public health emergency and consistent with a schedule extension agreed to by the NRC staff on May 13, 2020, the licensee submitted its revised license renewal application, including an updated final SAR, on July 6, 2020. The licensee proposes to reduce the licensed power level to 1.0 MW and eliminate pulsing capability at the facility.<br><br>The review is currently scheduled for completion on September 2022. |

3. Status of Power Uprate Application Reviews

The NRC receives three types of applications to increase the power output of operating nuclear power plants: 1) extended power uprate (EPU); 2) stretch power uprate (SPU); and

3) measurement uncertainty recapture power uprate (MUR). EPUs, SPUs, and MURs have been approved for power increases as high as 20, 7, and 2 percent, respectively. The NRC staff has no EPU or SPU applications under review.

The NRC staff is currently reviewing three MUR applications for Oconee Nuclear Station, Units 1, 2, and 3. The combined increase in reactor output at the site from the three proposed MURs would be approximately 126 megawatts thermal. The current status of these reviews is provided in the table below.

| Power Uprate Applications Under Review[1] | | | | | |
|---|---|---|---|---|---|
| Unit Name/No. | % Uprate | MWt | Submittal Date | Projected Completion Date | Power Uprate Type |
| Oconee, Unit 1 | 1.6 | 42 | 02/19/2020 | 12/2020 | MUR |
| Oconee, Unit 2 | 1.6 | 42 | 02/19/2020 | 12/2020 | MUR |
| Oconee, Unit 3 | 1.6 | 42 | 02/19/2020 | 12/2020 | MUR |

Additional information regarding the power uprates and the status of applications is available at the NRC public website: https://www.nrc.gov/reactors/operating/licensing/power-uprates.html.

4. Status of Design Certification Applications

The NRC employs a six-phase schedule to monitor progress towards completion of the safety reviews for design certification (DC) applications. These phases are:

Phase 1 - Preliminary SER with RAIs issued to applicant
Phase 2 - SER with open items issued
Phase 3 - Response to the ACRS regarding SER with open items issued
Phase 4 - Advanced SER with no open items issued
Phase 5 - Response to ACRS regarding SER with no open items issued
Phase 6 - Final SER issued

The NRC staff is currently reviewing one DC application and has suspended one review at the applicant's request.

U.S. Advanced Pressurized-Water Reactor

Mitsubishi Heavy Industries, Ltd. (MHI) submitted its U.S. Advanced Pressurized-Water Reactor (US-APWR) DC application on December 31, 2007. By letter dated November 5, 2013, MHI initiated a coordinated slowdown of NRC licensing activities in order to focus its resources towards supporting the restart of the Mitsubishi-designed reactors in Japan following the Fukushima event. Since that time, the NRC staff had been performing the review of the DC application at a reduced pace, had completed Phase 2 for several chapters, and was making progress on the Phase 4 review for six DC chapters. In a letter dated March 3, 2020, MHI asked the NRC to suspend the safety review of the US-APWR DC application until further notice. MHI does not intend to modify the US-APWR design or to update the DC document during the suspension period. Therefore, this item will be removed in the next quarterly report. The NRC will provide updates on any future activities associated within this DC application if MHI requests the review to be recommenced.

[1] In October 2020, MURs were completed for Farley 1 and 2 and Watts Bar 2.

NuScale

On January 6, 2017, NuScale submitted the first small modular reactor DC application for review by the NRC. On March 15, 2017, the NRC completed its acceptance review and docketed the application. The staff then issued the acceptance review letter to NuScale on March 23, 2017, and developed a full review schedule with public milestones, which was transmitted to NuScale on May 22, 2017. On April 11, 2018, the staff completed Phase 1 of the review. The staff completed Phase 2 of the review on July 12, 2019, except for Chapters 15 and 20 of the SER, which remained preliminary. On May 16, 2019, the NRC staff issued a letter to NuScale communicating that the staff had not met the Phase 2 milestone because several issues remained unresolved without a clearly defined path toward resolution. The staff further emphasized that to meet the overall 42-month target schedule for review and Phase 4 milestone, NuScale must resolve the remaining issues and open items with the NRC staff.

The NRC staff worked with NuScale to complete Phase 3 of the review on July 12, 2019, and completed Phase 4 of the review on December 12, 2019. In February 2020, NuScale informed the NRC that NuScale had identified an issue with an analysis that was necessary for the staff's safety finding. On May 1, 2020, the NRC issued a letter to NuScale (ADAMS Accession No. ML20112F455), updating the status and schedule for the NuScale review. On May 20 and May 28, 2020, NuScale submitted the final design changes and supporting information to the NRC (ADAMS Accession Nos. ML20141N012 and ML20149M119, respectively). The NRC staff then completed its analysis of the design changes in June 2020 and engaged with the ACRS in July 2020. The staff completed Phase 5 of its review on July 31, 2020. On August 28, 2020, the staff completed the final SER (ADAMS Accession No. ML20231A804) and on September 11, 2020, the staff issued a standard design approval to NuScale (ADAMS Accession No. ML20247J564). The staff is now preparing the draft proposed rule that will propose certifying the design and anticipates publishing the proposed rule for public comment in February 2021.

5. Status of Design Certification Renewal Applications

The NRC employs a four-phase schedule to monitor progress toward completion of the safety reviews for DC renewal applications. These phases are:

Phase 1 - RAIs and Supplemental RAIs
Phase 2 - SER without Open Items
Phase 3 - ACRS Review of SER without Open Items
Phase 4 - Final SER

The NRC staff is currently reviewing one DC renewal application.

Advanced Boiling-Water Reactor Renewal (General Electric-Hitachi)

The NRC completed its technical review and issued the final SER for this renewal application on March 30, 2020. The Advanced Boiling-Water Reactor DC renewal rulemaking is ongoing with the direct final rule now scheduled to be published in the *Federal Register* in February 2021; this is the NRC's first design certification renewal rulemaking.[2]

[2] The original scheduled completion date was September 2020.

6. Status of Combined License Applications

The NRC staff is currently reviewing one combined license (COL) application.

On March 11, 2020, Oklo Power LLC (Oklo) submitted a COL application for the Aurora reactor to the NRC (ADAMS Accession No. ML20075A00). On June 5, 2020, the NRC issued a letter to Oklo (ADAMS Accession No. ML20149K616), accepting the application for docketing and 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 RAIs to efficiently align on four key safety and design aspects of the licensing basis: 1) maximum credible accident; 2) classification of structures, systems and components; 3) applicability of regulations; and 4) the Quality Assurance Program. This will help the NRC staff to define the scope of the full, detailed technical review and develop a schedule.

On July 31, 2020, 28 national and regional environmental and civic organizations filed an emergency petition requesting that the Commission reverse or suspend the docketing decision and hearing notice and return the application to Oklo. The matter is pending before the Commission.

7. Status of Early Site Permit Applications

There are no early site permit applications currently under review.

8. Status of Uranium Recovery License Applications

For the timeframe of July - September 2020, no major uranium recovery licensing applications were reviewed by the NRC staff. Three uranium recovery facilities are licensed to operate under NRC jurisdiction: Crow Butte Resources, Inc.'s, Crow Butte in situ recovery facility in Nebraska, Powertech (USA), Inc.'s; Dewey Burdock site in South Dakota; and NuFuels, Inc.'s Crownpoint site in New Mexico. The Crow Butte facility remains in a standby status. Powertech is in the process of obtaining permits from other regulators for the Dewey Burdock site. NuFuels is not pursuing construction or operation.