

## **Progress on Licensing Applications - Third Quarter in Fiscal Year 2020**

### **1. Progress to Eliminate 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 the first, second, and third quarters of fiscal year (FY) 2020, NRR successfully met all operating reactor performance indicators as defined in the FY 2020 Congressional Budget Justification (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19065A279).

The NRC Office of Nuclear Material Safety and Safeguards (NMSS) continues to focus on improving its Request for Additional Information (RAI) processes. On January 24, 2020, a memorandum was provided to all fuel cycle facility and spent fuel storage and transportation staff outlining clear licensing program expectations. Specifically, this memorandum emphasized focusing RAIs on information needed for the safety evaluation, and that RAIs should provide a justification and a regulatory basis and should be discussed with the applicant.

### **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 one subsequent license renewal application (SLRA) for a site with two units to extend operations from 60 to 80 years. An appeal related to a hearing request on another SLRA also remains pending before the Commission.

#### **Peach Bottom Atomic Power Station, Units 2 and 3**

On March 5, 2020, the NRC staff issued the renewed licenses for an additional 20 years to Exelon Generation Company, LLC for Peach Bottom Atomic Power Station, Units 2 and 3 (ADAMS Accession No. ML20010F285). The staff completed this action within the established 18-month review schedule for the project.

The application was submitted on July 10, 2018, and in November 2018, a petition for leave to intervene was submitted by Beyond Nuclear, Inc. (Beyond Nuclear). On June 20, 2019, the Atomic Safety and Licensing Board (ASLB) found that, although Beyond Nuclear had demonstrated standing to intervene, neither of its two proposed contentions were admissible. Therefore, the ASLB denied Beyond Nuclear's petition for leave to intervene and terminated the proceeding. On July 15, 2019, Beyond Nuclear appealed the ASLB's decision to the Commission. The appeal is pending before the Commission.

#### **Surry Power Station, Units 1 and 2**

On October 15, 2018, Dominion Energy Virginia (Dominion) submitted an SLRA for Surry Power Station, Units 1 and 2. For the safety review, the NRC staff issued the final safety evaluation report (SER) on March 9, 2020 (ADAMS Accession No. ML20052F520). For the environmental review, the staff issued the final supplemental environmental impact statement (SEIS) on April 6, 2020 (ADAMS Accession No. ML20071D538).

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 NRC staff issued an RAI on this issue on April 11, 2019, and noted the issue in the draft and final SEISs. On February 5, 2020, the staff issued another RAI requesting information about actions taken by Dominion to fulfill its CZMA obligations. A response to the RAI was received on May 20, 2020 (ADAMS Accession No. ML20142A290). In its RAI response, Dominion indicated that it has not yet secured a revised CZMA consistency determination from the Commonwealth of Virginia. On June 15, 2020, the NRC staff issued a letter to Dominion (ADAMS Accession No. ML20161A192), indicating that the staff anticipates that it will be able to complete its review of the application within four weeks of receipt of the updated information, but that the actual time needed to review the information will be fact-dependent.

On June 17, 2020 (ADAMS Accession No. ML20169A452), Dominion provided a letter indicating that it had not yet secured a revised CZMA consistency determination and that it will provide an update on the status of its efforts within 30 days. On July 15, 2020, Dominion provided a letter (ADAMS Accession No. ML20198M669) to extend the update on the status of the ongoing discussions or the response to the RAI for an additional 90 days. Dominion informed the NRC staff that it continues to correspond with the Virginia Department of Environmental Quality (VDEQ) and the Virginia Department of Game and Inland Fisheries with the goal of obtaining a revised CZMA consistency determination from the VDEQ. As indicated in the table below, the licensee's delay in demonstrating compliance with the CZMA has taken the staff beyond its estimated 18-month target schedule for completing the review.

| Surry   |                   |                  |                 |
|---|-------------------|------------------|-----------------|
| Application Review Time from Acceptance Review (Months)   |                   |                  | 19              |
| Milestone   | Original Schedule | Revised Schedule | Completion Date |
| Receive SLRA  | 10/15/2018        |                  | 10/15/2018      |
| Publish <i>Federal Register</i> notice (FRN) – SLRA 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 |
| EPA publishes FRN – availability of final SEIS                       | 03/2020 | 04/2020 | 04/17/2020 |
| Decision – Director, NRR   | 06/2020 | TBD     |            |
| *Public meeting via webinar.   |         |         |            |

### 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<br>(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. |
| University of Texas at Austin (UTA)                                  | 12/12/2011<br>(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<br>(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 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.<br><br>(As of August 5, 2020, the licensee has not provided the information to supplement its application on July 31, 2020, due to limited resources. The NRC will provide a status of the schedule on the next quarterly report.) |
| North Carolina State University       | 02/24/2017<br>(review in progress) | The licensee submitted a revised safety analysis report (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 schedule for completion in October 2021.  |
| University of California at Davis     | 06/11/2018<br>(review in progress) | Due to the COVID-19 public health emergency and consistent with a schedule extension agreed upon in an NRC staff letter dated 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 in 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 six MUR applications. These six MURs are for Joseph M. Farley Nuclear Plant, Units 1 and 2; Watts Bar Nuclear Plant, Unit 2; and Oconee Nuclear Station, Units 1, 2, and 3. The combined increase in reactor output from the six MURs would be approximately 266 megawatts thermal with an equivalent electrical generating capacity of approximately 89 megawatts electric. The current status of these reviews is provided in the table below.

| Power Uprate Applications Under Review |          |     |                |                           |                   |
|--|----------|-----|----------------|---------------------------|-------------------|
| Unit Name/No.                          | % Uprate | MWt | Submittal Date | Projected Completion Date | Power Uprate Type |
| Watts Bar, Unit 2                      | 1.4      | 48  | 10/15/2019     | 8/2020                    | MUR               |
| Farley, Unit 1                         | 1.6      | 46  | 10/31/2019     | 8/2020                    | MUR               |
| Farley, Unit 2                         | 1.6      | 46  | 10/31/2019     | 8/2020                    | MUR               |
| 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.

## 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, and is currently on track for issuing the final safety evaluation and meeting the Phase 6 milestone by September 8, 2020.

### 5. Status of Design Certification Renewal Applications

The NRC employs a 4-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 in progress. The direct final rule is scheduled to be completed in 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 remains 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 April - June 2020, no major uranium recovery licensing applications were reviewed by the NRC staff. Three uranium recovery facilities that are licensed to operate are 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.