

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

### **1. Progress to Eliminate the Backlog of Pending Licensing Actions**

The U.S. Nuclear Regulatory Commission (NRC) has taken specific actions to ensure greater discipline and management oversight in the request for additional information (RAI) process, which may prevent future backlogs of licensing actions while still ensuring that key questions are asked by the NRC staff to ensure health and safety requirements are met.

The Office of Nuclear Reactor Regulation (NRR) made significant strides in reducing the backlog of licensing actions and thus reducing the inventory of licensing actions greater than 1-year-old from 139 in September 2014 to 14 by the end of 2017. Through the use of strict controls and metrics, the staff has been able to maintain this inventory at historically low levels. This improvement is due in large part to the RAI-related improvements implemented over the last several years and in place today. In January 2017, guidance was incorporated into NRR procedures to set expectations to enhance consistency, for decisionmaking, and for the discipline of the staff's schedules.

The Office of Nuclear Material Safety and Safeguards (NMSS) also issued expectations and guidance to employees to improve its RAI process. The staff's continual efforts on RAIs have significantly improved the NRC's ability to monitor safety reviews. The agency has formed a working group to align, where appropriate, licensing strategies across the agency, including the RAI process. This working group includes representatives from NMSS, NRR, the Office of Nuclear Security and Incident Response, and the Office of the General Counsel.

### **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 issued the subsequent renewed licenses for two sites (each site had two units). The staff also continued the review of the subsequent license renewal application (SLRA) for another site with two units to extend operations from 60 to 80 years.

#### **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 for Peach Bottom Atomic Power Station, Units 2 and 3 (Peach Bottom) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20010F285). The original schedule and the actual completion dates for milestones of the review of the Peach Bottom SLRA are provided below. A schedule change letter was issued on July 31, 2019, to identify changes to the dates for issuance of the Safety Evaluation Report (SER) and the meeting with the Advisory Committee on Reactor Safeguards (ACRS) Subcommittee on Plant License Renewal (ADAMS Accession No. ML19210C571).

On July 10, 2018, the NRC received an SLRA from Peach Bottom. In November 2018, a petition for leave to intervene was submitted by Beyond Nuclear, Inc. (Beyond Nuclear). The Atomic Safety and Licensing Board (ASLB) heard oral argument on standing and contention admissibility on March 27, 2019. On June 20, 2019, the ASLB found that, although Beyond

Nuclear had demonstrated standing to intervene, neither of its two proposed contentions was admissible. Therefore, the ASLB denied Beyond Nuclear's petition to intervene and request for hearing 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.

Peach Bottom			
Application Review Time from Acceptance Review Date (Months)			18
Milestone	Original Schedule	Revised Schedule	Completion Date
Receive SLRA	07/10/2018		07/10/2018
Publish <i>Federal Register</i> Notice (FRN) - SLRA availability	08/2018		08/01/2018
Publish FRN - docketing acceptance/rejection and opportunity for hearing	09/2018		09/06/2018
Publish FRN - notice of intent to prepare an Environmental Impact Statement (EIS) and conduct environmental scoping process	09/2018		09/10/2018
Public meeting - overview of subsequent license renewal process and environmental scoping process	09/25/2018		09/25/2018
Environmental scoping process period ends	10/2018		10/10/2018
Deadline for filing hearing requests and petitions for intervention	11/2018		11/05/2018
Issue draft Supplemental Environmental Impact Statement (SEIS)	07/2019		07/30/2019
Public meeting - draft SEIS meeting	09/2019		09/12/2019
End of draft SEIS comment period	09/2019		09/23/2019
Issue SER	09/2019	10/2019	11/19/2019
ACRS subcommittee meeting	10/2019	11/2019	11/05/2019
ACRS Full Committee meeting	12/2019		12/04/2019
Issue final SEIS	01/2020		01/27/2020
EPA publishes FRN - availability of final SEIS	02/2020	01/2020	01/31/2020
Decision - Director, NRR	03/2020		03/05/2020

Surry Power Station, Units 1 and 2

For the safety review, the NRC staff issued the draft SER on December 27, 2019 (ADAMS Accession No. ML19353C656), to support a February 5, 2020, meeting with the ACRS Subcommittee on Plant License Renewal. The staff issued the final SER on March 9, 2020 (ADAMS Accession No. ML20052F520), to support an April 8, 2020, meeting with the ACRS Full Committee.

For the environmental review, the staff issued the final SEIS on April 6, 2020 (ADAMS Accession No. ML20071D538), and EPA published the Notice of Availability of the final SEIS on April 17, 2020.

One outstanding issue is 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 it has not yet secured a revised CZMA consistency determination letter from the Commonwealth of Virginia and that it will provide another update on the status of its efforts within 30 days of its May 20, 2020, letter.

The original schedule, the actual completion dates for milestones, and the scheduled date for completion of the review of the Surry SLRA are provided below. The licensee's ability to demonstrate compliance with the CZMA could impact the 18-month schedule for completing the review.

Surry			
Application Review Time from Acceptance Review (Months)			16
Milestone	Original Schedule	Revised Schedule	Completion Date
Receive SLRA	10/15/2018		10/15/2018
Publish 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

Surry			
Application Review Time from Acceptance Review (Months)			16
Milestone	Original Schedule	Revised Schedule	Completion Date
End of draft SEIS comment period	11/2019	12/2019	12/10/2019
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		

\*Public meeting via webinar.

### Research and Test Reactors License Renewal Applications Currently Under Review

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 TAMU AGN license currently allows only possession of the reactor. The licensee partially disassembled and placed the reactor into storage at the Texas Engineering Experiment Station Training, Research, Isotopes, General Atomics reactor facility, where the licensee has started construction on support laboratory space for the AGN reactor. The NRC staff will resume its review of the license renewal application once the licensee submits a revised safety analysis report (SAR) as part of an application for a construction permit to reassemble the AGN in its new location.

Research and Test Reactors		
Facility Name	Application Date	Status
University of Texas at Austin (UTA)	12/12/2011 (review in progress)	The schedule for completion of the review is July 2021. The NRC staff is reviewing the updated/corrected UTA neutronic and thermal-hydraulic analyses provided by letter dated April 16, 2020. A virtual audit is planned to follow-up on any items identified by the NRC staff review of these analyses. The review schedule will be updated as needed following the audit.
University of Massachusetts at Lowell	10/20/2015 (review in progress)	The review is now on schedule for completion in September 2020 (revised). The NRC staff commenced a regulatory audit in February 2020 to address open items remaining following the review of RAI responses and other supplemental information submitted by the licensee in 2019 and 2020. During the audit, the licensee stated that it would submit additional information supplementing its renewal application (including a follow-up Technical Specifications submittal and other information) to address information needs identified by the NRC staff. On April 21, 2020, the licensee stated that based on its current operational status (due to the Coronavirus Disease (COVID-19) public health emergency), it expected to need until at least May 31, 2020, to submit all additional information. By letter dated April 27, 2020, the NRC staff provided the licensee with the revised target completion date of September 30, 2020, for the review, based on a May 31, 2020, submittal date of the additional information. The NRC staff has substantially completed a draft of the SER, with open items to be resolved.

Research and Test Reactors		
Facility Name	Application Date	Status
North Carolina State University	02/24/2017 (review in progress)	<p>The review remains on schedule for completion in October 2021. The NRC staff has prepared a draft SER, which is the basis for RAIs dated October 18, 2018, related to safety, financial, environmental, operator requalification, and supporting information. By letter dated November 1, 2018, the licensee provided partial responses to these RAIs. By letter dated December 13, 2018, the licensee requested an additional 60 days to complete the RAI responses. By letter dated February 14, 2019, the licensee submitted the remaining responses, including additional computational analysis indicating it would change the requested power level increase from 2.6 MW to 2.0 MW.</p> <p>The NRC staff is reviewing the revised SAR, the fueled experiment update, and the site audit findings.</p>
University of California at Davis	06/11/2018 (review in progress)	<p>The review is now on schedule for completion in September 2022 (revised). By letter dated April 3, 2020, the licensee stated that the final preparation of the updated final SAR has been delayed due to the COVID-19 public health emergency and subsequent shelter-in-place order from the State of California and requested an extension until July 10, 2020, for submitting the UFSAR.</p>

### 3. Status of Power Uprate Application Reviews

The NRC staff has no power uprate applications under review.

### 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 suspended one review at the applicant's request and has another DC application under review.

### 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. A final Phase 2 SER was not issued at the time. As a result, 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 mutually understood and clearly defined path toward resolution. The letter further emphasized that to meet the overall 42-month schedule for review, NuScale must resolve the remaining issues and open items with the NRC staff in order to meet the Phase 4 milestone.

After that letter, 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. The review is in Phase 5 (ACRS Review of Advanced SER with No Open Items) and proceeding concurrently with Phase 6 (Final SER with No Open Items). 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. Under the updated schedule, following the submittal of the final design information to the NRC, the staff will complete its analyses and engage with the ACRS in June and July 2020, respectively. As a result, Phase 5 is anticipated to be completed by July 31, 2020, rather than by June 23, 2020. 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 staff is currently assessing future schedule impacts of any NuScale design changes.

### 5. Status of Design Certification (DC) 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 - RAls and Supplemental RAls
- Phase 2 - SER without Open Items
- Phase 3 - ACRS Review of SER without Open Items
- Phase 4 - Final SER

The NRC staff has one DC renewal application under review.

#### 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 has no combined license applications under review.

On March 11, 2020, the NRC received Oklo Power LLC's custom<sup>1</sup> combined license application for its Aurora design, a compact, fast, micro-reactor that, if approved, would be constructed and operated at the Idaho National Laboratory. On June 15, 2020, the NRC docketed Oklo's application, and the NRC staff began its review.

#### 7. Status of Early Site Permit Applications

The NRC staff has no early site permit applications under review.

#### 8. Status of Uranium Recovery Licensing Application Review

For the timeframe of January - March 2020, no major uranium recovery licensing applications were reviewed. In September 2018, Wyoming became an Agreement State and now has authority over uranium recovery facilities. The NRC has three facilities licensed to operate that remain under its 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 continues to pursue the Dewey Burdock site and is in the process of obtaining other permits. NuFuels is not pursuing construction or operation.

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<sup>1</sup> A custom combined license application is a Part 52 combined license application that contains all necessary design information and does not reference a standard design certification, standard design approval, manufacturing license, or an early site permit. See 10 CFR 52.73(a).