

Progress on Licensing Applications – September 2017

1. Progress to Eliminate the Backlog of Pending Licensing Actions

Operating Reactors

The Commission has taken specific actions to ensure greater discipline and management oversight in the request for additional information (RAI) process.

On June 30, 2014, the Commission issued a Staff Requirements Memorandum (SRM) (Agencywide Documents Access and Management Systems (ADAMS) Accession No. ML14181B402) directing the staff to consider, in the context of Project Aim, ways to reduce the licensing action backlog and get back on target with respect to timeliness. In response to the SRM, the Office of Nuclear Reactor Regulation (NRR), as operating reactor business line lead, launched several initiatives and took other actions to focus on how the U.S. Nuclear Regulatory Commission (NRC) can leverage or revise its existing licensing processes to enhance agency efficiency, effectiveness, and predictability as a regulator, while maintaining a continued strong safety focus. These initiatives have analyzed the issues that caused the backlog, including issues related to the RAI process, and provided recommendations to NRR management regarding enhancements to the licensing review process. In part, as a result of recommendations from the initiatives, NRR management issued interim guidance to the staff in January 2015, and updated interim guidance in April 2016, that provides expectations to help ensure consistency of the licensing review process, sound decision-making, and discipline of schedule. In January 2017, this interim guidance was incorporated into NRR procedures. Some of the key items in the procedures that have added discipline and management oversight to the RAI process include the following:

- NRR staff review of an application will be limited to the scope of the licensing action and RAIs should have a clear nexus to information required to make a safety determination regarding the licensing action.
- At the point when RAIs are transmitted from the technical staff to the NRR project manager, the technical staff is expected to have developed a draft safety evaluation (SE). In addition to ensuring that the RAIs contain both a sound technical and regulatory basis, the technical staff should be able to correlate each RAI to a “hole” in the draft SE that the licensee response is intended to fill.
- NRR management will maintain a focus on RAIs. Prior to sending a second (and any subsequent) round of RAIs in a specific technical area, NRR division level management will apply additional oversight to discuss the need for the RAIs and whether alternative methods, such as a public meeting or audit, may be more effective and efficient for determining the necessary information that the licensee needs to submit.
- NRR project managers are expected to track licensee timeliness and adherence to RAI response schedules. Any significant delays in licensee responses will be brought to NRR management attention.

Training sessions were held with the technical and project management staff on RAI quality and process. In addition, following issuance of the finalized NRR guidance in this area in January 2017, an online training package was developed and provided to the NRR staff. This training covers expectations regarding added discipline and management oversight of the RAI process.

Other actions taken that help provide a stable and sustainable improvement in the RAI process and add accountability to the process include:

- In November 2014, NRR management began holding periodic meetings to discuss open licensing actions, develop alignment on the best approaches to completing these actions, and monitor licensing performance.
- In October 2016, NRR replaced the existing software used to manage and monitor licensing reviews with a newly developed software package called the Reactor Protection System -Licensing/Workload Management software. This system has the capability to better track RAI issuance and status.
- NRR performed an internal audit of a sample of RAIs issued between April and December 2016 and found that the overall adherence to quality, timeliness, and process expectations was satisfactory. The audit team identified areas for continued improvement and recommended increased staff training on the RAI guidance, development of staff job aids, and consideration of modifications to staff guidance to better reflect the reactor license renewal and non-power utilization facilities licensing processes.

NRC also considers its approach to RAIs in other areas of licensing work:

Decommissioning and Low-Level Waste

The Office of Nuclear Material Safety and Safeguard's Division of Decommissioning, Uranium Recovery, and Waste Programs' internal guidance includes the expectation that RAIs will be developed in conjunction with the draft Staff Evaluation Report (SER) to ensure that the RAI is necessary to reach a safety finding. In addition, the guidance contains the expectation to include a reference in the RAI to the specific requirement that has not been met, and encourages staff to conduct telephone conferences with licensees and applicants to efficiently resolve technical issues on RAIs. The NRC staff recently finalized an internal self-assessment that identifies possible efficiency improvements within the Uranium Recovery Program. The self-assessment includes recommendations for improving the efficiency of the RAI process, such as issuing RAIs as they are written rather than as a group, and reemphasizing the expectation that staff develop the draft safety evaluation and RAIs in concert. The staff has prioritized the recommendations and is developing an implementation plan.

New Reactors

In October 2016, the Office of New Reactors (NRO) revised an RAI job aid document to be used as guidance by staff when preparing RAI's to include a new quality check audit process where, in addition to the technical branch supervisor, the division management of both the technical and project management organizations review an RAI before it is issued to the applicant or licensee.

2. Status of License Renewal Reviews

Operating Reactors

Applicant	Application Accepted for Review	Review status for long-term application reviews
Indian Point 2&3	08/01/2007	The NRC staff is working to address public comments received on its draft second supplement to the final supplemental environmental impact statement, which was issued for comment in December 2015. In addition, an SER supplement will be issued to address new information received by the staff concerning safety issues. On February 8, 2017, New York State and Riverkeeper filed an unopposed motion to the Atomic Safety Licensing Board (ASLB) to withdraw their contentions and terminate the adjudicatory proceeding. The Licensing Board granted that motion and terminated the adjudicatory proceeding on March 13, 2017 (LBP-17-13) and that decision became final on July 11, 2017. The schedule for a final decision on license renewal will be determined pending the completion of the staff's review.
Diablo Canyon 1&2	01/21/2010	In May 2011 and July 2016, the NRC suspended the license renewal review. In June 2016, Pacific Gas and Electric requested the suspension to allow it to seek approval from the California Public Utilities Commission of an agreement in principle not to proceed with license renewal for Diablo Canyon.
Seabrook 1	07/21/2010	The NRC staff continues to work with the applicant to ensure technical issues for closure of the alkali silica reaction (ASR) open item in the SER are properly addressed. On August 2016, the licensee submitted a license amendment request (LAR) to the current license to adopt a methodology for the analysis of seismic Category I structures with concrete affected by ASR. The staff plans to complete the LAR review on the ASR issue before completing the license renewal application review. The current schedule is under review. In response to a petition to intervene on the LAR, on October 6, 2017, the ASLB granted the admission of one contention regarding the impact of the seismic methodology on ASR. This issue remains pending before the Board.
South Texas Project 1&2	01/13/2011	The NRC issued the renewed operating licenses for the South Texas Project on September 28, 2017.

Applicant	Application Accepted for Review	Review status for long-term application reviews
Waterford	05/31/2016	The NRC staff continues work on the safety and environmental reviews and has been working on specific questions regarding the Waterford neutron fluence time-limited aging analysis.
River Bend	08/07/2017	The River Bend application was received on May 31, 2017, and accepted for review on August 7, 2017, following a supplement from the applicant. The application review schedule has been established and the review is expected to take approximately 18 months. A public scoping meeting was held on Tuesday, September 19, 2017, in St. Francisville, LA. A petition to intervene on the River Bend license renewal application has been filed.

Research and Test Reactors License Renewal Applications Currently Under Review

Facility Name	Application Date	Status
Texas A&M University (TAMU) Aerojet-General Nucleonics (AGN) Reactor	07/22/1997	The review of the TAMU AGN reactor license renewal application (LRA) is on hold. The licensee disassembled and relocated the reactor into storage at the Texas Engineering Experiment Station, where the licensee intends to build a new facility to house the AGN. The NRC will resume its review of the LRA once the licensee submits a revised safety analysis report describing the new location of the reactor.
Aerotest Radiography and Research Reactor	02/28/2005	This review had been on hold due to issues associated with foreign ownership, control, or domination. Following the completion of an indirect license transfer in August 2017 that resolved those issues, the NRC has resumed its review of Aerotest's license renewal application.
University of Texas at Austin	12/12/2011	The review is in progress. The licensee is completing neutronics and thermal-hydraulic analyses, which are needed for the NRC to complete its review.
University of Massachusetts at Lowell	10/20/2015	The review is in progress and on schedule.
North Carolina State University	02/24/2017	The review is in progress and on schedule.

3. Status of Power Uprate Application Reviews

The NRC staff currently has the following power uprate applications under review:

Browns Ferry, Units 1, 2 and 3

The Browns Ferry, Units 1, 2, & 3, extended power uprate application was accepted for review on January 11, 2016. The NRC's Advisory Committee on Reactor Safeguards (ACRS) concluded its review of the application during the June 2017 full committee meeting and recommended that the Commission approve the proposed extended power uprate. The NRC staff completed its safety evaluation and the amendments were issued on August 14, 2017.

Peach Bottom Units 2 and 3

The Peach Bottom Units 2 & 3, measurement uncertainty recapture uprate application was accepted for review on March 20, 2017. The NRC staff is currently performing its safety evaluation. As noted in graphical item #4, the NRC approved a previous extended power uprate for Peach Bottom Units 2 & 3, in 2014.

Hope Creek Generating Station

The Hope Creek Generating Station, measurement uncertainty recapture uprate application was accepted for review on August 16, 2017. The staff is currently performing its safety evaluation.

Design Certification Applications

US-APWR

Mitsubishi Heavy Industries (MHI) submitted its 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 Mitsubishi designed reactors in Japan following the Fukushima event. The NRC staff will continue the review of the US-APWR DC application at a reduced pace until further notice from the applicant. A completion date is not known at this time.

APR1400

On December 23, 2014, Korea Electric Power Corp. and Korea Hydro & Nuclear Power Co., Ltd., submitted to the NRC its application for the certification of the APR1400 standard plant design for use in the U.S. domestic energy market. The Phase 2 review (issuing an SER with open items) for all chapters of the application was completed by the staff in May 2017. The Phase 3 review (ACRS review of SER with open items) was completed in June 2017. The staff is currently in Phase 4 of its review (issuing the advanced SER with no open items). The final SER is projected to be issued in September 2018.

NuScale

On January 6, 2017, NuScale submitted the first small modular reactor design certification application for review by the NRC. On March 15, 2017, the NRC completed its acceptance review and concluded that the application was acceptable for review and docketed the application. The staff issued the acceptance review letter to NuScale on March 23, 2017, and developed a full review schedule with public milestones that was transmitted to NuScale in the form of a schedule letter on May 22, 2017. The staff's review is currently in Phase 1 (preparing the preliminary SER and issuing RAIs) and Phase 2 (issuing an SER with open items). The staff has identified 17 critical issues that require resolution. The final SER is scheduled to be completed in September 2020.

Design Certification Renewal Applications

ABWR Renewal (General Electric-Hitachi (GEH))

On December 7, 2010, GEH submitted an application for renewal of the ABWR DC. The NRC staff issued a letter to GEH on July 20, 2012, describing certain design changes (28 items) that GEH should have included in the application. By letter dated September 17, 2012, GEH stated it planned to address the 28 items and submit Revision 6 of the ABWR Design Control Document (DCD) no later than the second quarter of 2014. On March 17, 2014, GEH submitted a subsequent letter to the NRC stating that it would not be providing Revision 6 of the DCD earlier than May 2015. By letter dated February 19, 2016, GEH submitted its revised application (Revision 6) incorporating changes to the ABWR DCD. On August 30, 2016, the staff issued a schedule letter to GEH, which was based on resolving all open items by January 2017. However, some open items associated with the review of the application remain unresolved. On August 3, 2017, the staff issued a letter to GEH stating that the NRC will not be able to meet the original schedule due to unresolved issues with the application. The letter also stated that the NRC will issue a revised schedule letter to GEH after additional interactions with the applicant are held to resolve these issues.

Combined Operating License Applications

Turkey Point Units 6 and 7

On June 30, 2009, Florida Power & Light Company (FPL) submitted a Combined Operating License (COL) application for two AP1000 units at the existing Turkey Point Nuclear Generating Station site in Miami-Dade County, FL. On September 4, 2009, the NRC staff issued a letter to FPL indicating the Turkey Point COL application was acceptable for docketing and indicated that as a subsequent COL applicant referencing the AP1000 design, the Turkey Point COL review schedule would also be dependent on the review schedules for the AP1000 DC application as well as the Vogtle reference COL (R-COL) application. In addition, the staff indicated that additional information was needed in the areas of geology, hydrology, and structural engineering in order to develop a complete and integrated review schedule and that review of Section 2.5 of the application would not begin until the information requested had been provided. On May 28, 2010, the staff issued a schedule letter to FPL projecting a final SER completion date of December 2012 and a final environmental impact statement (EIS) completion date of October 2012. In this letter, the staff reiterated its concern that it still had not received the additional information from FPL related to Section 2.5 of its application and that the review of Section 2.5 would not begin until this information was received by the staff. By letter dated October 27, 2011, the NRC issued a revised schedule to FPL due to the dependence of the Turkey Point COL review on the reviews of the AP1000 DC amendment and Vogtle R-COL applications' reviews. The revised schedule projected final SER and final EIS completion dates of November 2013 and February 2014, respectively.

On May 4, 2012, the NRC issued a letter to FPL identifying two significant issues that were affecting the staff's ability to complete its safety and environmental reviews of the Turkey Point COL application: (1) geology, seismology, and geotechnical engineering and (2) the alternative sites analyses. Based on the significant issues identified above, the NRC indicated to FPL that the staff's safety and environmental reviews in these areas of the Turkey Point COL application would be suspended until FPL made substantial modifications to its COL application.

In a letter dated April 17, 2014, the staff informed FPL that publication of the final EIS would be re-evaluated based on the number and complexity of comments received (approximately 11,000 comment letters) on the draft EIS from Federal, State, and local agencies, members of the public, and interested stakeholders. The revised schedule projected final EIS completion in October 2016.

By letter dated August 26, 2014, the staff issued a letter to FPL indicating sufficient quality information had been submitted such that the NRC staff could schedule the review of Sections 2.5.1 through 2.5.5. The new schedule projected issuance of the final SER in October 2016.

Also in an October 27, 2015, letter, the staff informed FPL that the staff continued to actively engage with the AP1000 licensees as well as Westinghouse Electric Company to resolve several generic design issues. Since then the NRC staff has reviewed the additional information provided by Duke Energy Florida under the Levy Nuclear Plant docket and the information was subsequently reviewed by the ACRS in April 2016.

In a letter dated April 14, 2016, FPL endorsed departures related to changes in the AP1000 design certification that had also been submitted by Duke Energy Florida for the Levy COL application. On May 13, 2016, the NRC issued a revised schedule letter to FPL for the Turkey Point COL application contingent upon FPL providing the required information related to the departures by May 16, 2016, and all such proposed departures being equally and fully applicable to Turkey Point Units 6 & 7, and not requiring any additional staff review. The new schedule projected issuance of the final SER in November 2016. The NRC staff completed its safety review and presented the advanced final SER to ACRS on August 19, 2016. The final SER for Turkey Point was issued on November 10, 2016. The NRC issued the final EIS on October 28, 2016.

On May 2-3, 2017, the ASLB conducted an evidentiary hearing in Homestead, FL, in the contested proceeding involving the Southern Alliance for Clean Energy, National Parks Conservation Association, and other joint intervenors. On July 10, 2017, the ASLB ruled in favor of the NRC staff and terminated the contested proceeding. No appeal was filed within the appeal deadline. On April 18, 2017, the City of Miami, City of South Miami, and Village of Pinecrest (petitioners) filed a new petition seeking a hearing. On July 31, 2017, the ASLB rejected the pending contention and terminated the contested proceeding involving those petitioners. The petitioners filed an appeal that is pending before the Commission.

Per a Commission Order, the mandatory hearing was delayed to allow environmental consultations with other government agencies to proceed. Those consultations have now concluded. The Commission's mandatory hearing on the COL application was scheduled for October 5, 2017, but was delayed at FPL's request to allow personnel to focus on preparing for and responding to Hurricane Irma. The mandatory hearing is currently rescheduled for December 12, 2017.

Early Site Permit Applications

Clinch River

On May 12, 2016, the Tennessee Valley Authority (TVA) submitted an Early Site Permit (ESP) application for the Clinch River Nuclear Site located in Oak Ridge, TN. By letter dated August 11, 2016, TVA identified certain aspects of the application for which it intended to provide supplemental information. The NRC responded to TVA in a letter dated August 19, 2016, and informed TVA that its application would remain in a tendered but not docketed status

until all of the supplemental information identified was provided to NRC. By December 15, 2016, TVA had provided the supplemental information in support of its application, and by letter dated January 5, 2017, the NRC staff informed TVA that its application, as supplemented, was accepted for docketing and detailed technical review.

NRC staff began its detailed technical review of the ESP application the first week of January 2017 and developed a full review schedule with public milestones that was transmitted to TVA on March 17, 2017. The Phase A review (preparing the preliminary SER and issuing RAIs) for all chapters of the application was completed by the staff on August 4, 2017. The staff is currently in Phase B (issuing the advanced SER with no open items) of its review. The final SER is projected to be issued in September 2019.

On June 12, 2017, the Southern Alliance for Clean Energy, Tennessee Environmental Coalition, and Blue Ridge Environmental Defense League filed petitions seeking a hearing. On September 12, 2017, the ASLB conducted oral argument on these petitions.

4. Status of Uranium Recovery Licensing Application Review

Uranium Recovery Applicant	Application Accepted for Review	Review Status
Cameco North Trend Expansion	08/28/07	<p>The applicant requested the NRC staff to stop its review of the North Trend application and to focus its efforts on the review of the Marsland expansion. The SER for the North Trend expansion was completed in July 2013. The NRC staff has suspended its work related to the development of the draft Environmental Assessment (EA) and conduct of Section 106 consultations pursuant to the National Historic Preservation Act. In addition, the hearing to address contentions related to groundwater is on hold, pending completion of the NRC staff's environmental review. The current schedule for remaining milestones will be determined after the NRC staff has completed its review for the Marsland expansion.</p>
Uranium One Ludeman Expansion	05/16/12	<p>NRC environmental and safety reviews are in progress for the Ludeman Project, which is an expansion to the existing Willow Creek Project. The licensee is working to resolve safety and environmental issues. NRC met with the licensee on February 22, 2017, to discuss these issues and the licensee's plan to submit an amended application, which addresses a major change of design planned by the licensee. On March 28, 2017, the NRC staff issued a letter to the licensee requesting an updated schedule of when they would submit the required information necessary for the staff to complete its review. In April 2017, the applicant provided all information except for the amended application. The staff received the amended technical report in June 2017 and the amended environmental report in August 2017. The NRC staff is on schedule to complete the SER by March 2018. Based on the amended environmental report, the staff's cultural resources review can now be completed. The NRC staff is on schedule to issue the final EA by August 3, 2018, and reach a decision on the license amendment on August 31, 2018.</p>

Uranium Recovery Applicant	Application Accepted for Review	Review Status
<p>Cameco Smith Ranch License Renewal</p>	<p>07/05/12</p>	<p>Environmental and safety reviews are in progress. Open issues are currently being addressed. On May 2, 2013, the NRC staff issued RAIs on safety and environmental aspects of the renewal request. On April 21, 2015, the licensee submitted its responses to the RAI. The NRC staff is working with the licensee to close remaining open issues. On May 2, 2016, the staff communicated to the licensee that its response to the RAI was incomplete. In December 2016 the staff requested the licensee to provide a schedule for completing its response to the remaining aspects of the RAI. On January 10, 2017, the licensee provided a subsequent update on when it expects to respond to part, but not all, of the NRC staff's RAI. The NRC staff responded to Cameco's letter on April 14, 2017. The NRC staff and Cameco also held the first of several public meetings to address Cameco's development of sufficient RAI responses. The NRC staff's SER completion date of July 2018 and EA completion date of August 2018 were based on receipt of Cameco's RAI responses by June 30, 2017. However, the responses were not received by June 30, 2017, therefore, the NRC staff's schedule for completing this action will be impacted. The NRC staff has informed Cameco and will revise the SER and EA completion dates once Cameco determines its schedule for responding.</p>
<p>Crow Butte Marsland Expansion</p>	<p>10/05/12</p>	<p>Environmental and safety reviews are in progress. The NRC staff issued RAIs in July 2013. The licensee responded in November 2015. After reviewing the responses, the NRC determined that additional information was required to resolve the RAIs. Cameco submitted responses to the open issues in June and August of 2017. At this time, the NRC staff is proceeding with its review and is currently on schedule to complete the SER in January 2018, the final EA in April 2018, and make a final licensing decision in May 2018. The Marsland expansion review has an admitted contention that will go to hearing after completion of the NRC staff's review.</p>

Uranium Recovery Applicant	Application Accepted for Review	Review Status
Hydro Resources, Inc. (HRI) License Renewal	06/24/13	The sites, located very close to Navajo Nation lands, were licensed in 1998. Construction has not yet commenced. The license renewal review was placed in abeyance on November 13, 2014, at the request of HRI in order to continue its work with the Navajo Nation Council. In March 2016, the NRC approved the transfer of control of the license from the HRI parent company, Uranium Resources, Inc., to Laramide Resources. The parties finalized the transaction in January 2017. The schedule for remaining milestones associated with the licensing review is to be determined.
Kennecott Sweetwater License Renewal	11/25/14	The licensee has maintained the facility in stand-by since 1983, waiting on better market conditions to recommence operations. Environmental and safety reviews are in progress. On October 18, 2016, the licensee submitted supplemental information related to groundwater detection monitoring. On November 14, 2016, the licensee submitted revised environmental information. The NRC staff has identified issues with these submittals and will be working with the licensee to resolve them. The issues identified with this revised environmental information impacted the December 2016 SER completion date, will impact the July 2017 final EA date, and will impact the final licensing decision completion date of August 2017. By letter dated July 26, 2017, the licensee identified its schedule for addressing the remaining safety review RAIs. Based on the licensee's schedule, the staff plans to complete its SER and final EA in February 2018. The staff is on schedule to reach a licensing decision in August 2018.
Strata Kendrick Expansion	01/14/16	On May 27, 2016, and September 14, 2016, the NRC staff issued RAIs for the environmental review and for the safety review, respectively. On December 15, 2016, the licensee requested that the NRC cease all activities related to this review. As a result of the licensee's request, the NRC staff is no longer reviewing this licensing action. The staff's safety and environmental reviews, including development of the Supplemental EIS, are on hold.

Uranium Recovery Applicant	Application Accepted for Review	Review Status
Lost Creek KM Horizon/East Expansion	05/02/17	<p>By letter dated February 27, 2017, the applicant resubmitted a revised application. The NRC staff has accepted the application for review on May 2, 2017. The NRC staff issued its initial RAI on July 27, 2017, and its second RAI on August 28, 2017. The final safety evaluation report is scheduled to be completed in August 2018. The NRC staff continues to coordinate with the U.S. Bureau of Land Management (BLM) in its preparation of the EIS in accordance with the BLM/NRC Memorandum of Understanding and the letter of December 4, 2014, designating BLM as the lead agency and the NRC as a cooperating agency. BLM is scheduled to publish the final EIS in December 2018.</p>