



POLICY ISSUE

(Information)

April 15, 2024

SECY-24-0026A

FOR: The Commissioners

FROM: Raymond V. Furstenau
Acting Executive Director for Operations

SUBJECT: ACHIEVING TIMELY COMPLETION OF LICENSE RENEWAL SAFETY
AND ENVIRONMENTAL REVIEWS (LICENSE RENEWAL ROADMAP)

PURPOSE:

The U.S. Nuclear Regulatory (NRC) staff is providing additional information on the efficiency gains being realized with two currently ongoing reviews as a supplement to SECY-24-0026, "Achieving Timely Completion of License Renewal Safety and Environmental Reviews (License Renewal Roadmap)," (Agencywide Documents Access and Management System (ADAMS) Accession No. ML24059A131). The SECY highlights the NRC staff's plan to ensure timely and predictable licensing reviews in a targeted 18-month timeframe, while reducing staff resources necessary to complete the reviews and make a finding of reasonable assurance of adequate protection of public health and safety. This supplemental information is being provided to present detailed analysis of resource usage for two ongoing license renewal (LR) projects to illustrate the efficiency gains already being achieved.

DISCUSSION:

The staff has been applying lessons learned from prior LR reviews to active reviews, including initiatives adapted from new and advanced reactor reviews, resulting in process enhancements that have already led to efficiency gains. Although the reviews have not yet been completed, the gains may be seen in the recent data for the initial LR review for Comanche Peak Nuclear Power Plant (Comanche Peak), Units 1 and 2, and subsequent license renewal (SLR) review for

CONTACT: Angela Wu, NRR/DNRL
301-415-2995

Monticello Nuclear Generating Plant (Monticello), Unit 1. As these reviews are still ongoing, the data cited in this supplement is preliminary and does not portray the total expenditures for the reviews. These two reviews indicate that the resources needed for reviews are trending down, and the staff expects this trend to continue as the efficiencies in the roadmap are further implemented.

Comanche Peak License Renewal Application

On October 3, 2022, Vistra Operations Company LLC (Vistra) submitted to the NRC a license renewal application (LRA) for Facility Operating License Nos. NPF-87 and NPF-89 for Comanche Peak Units 1 and 2 (ML22276A082).

By letter dated November 23, 2022, the NRC staff accepted the application for review (ML22297A007). For the safety review, the staff issued the safety evaluation in 16 months on March 18, 2024 (ML24078A230). The Advisory Committee on Reactor Safeguards (ACRS) Full Committee Meeting is scheduled for April 30, 2024, which will be followed by a letter documenting the ACRS' recommendation on the staff's review.

For the environmental review, the staff issued the draft supplemental environmental impact statement (SEIS) on October 31, 2023 (ML23299A252), with the issuance of the final SEIS targeted for April 2024 (U.S. Environmental Public Agency availability scheduled for May 2024). The environmental review is on track be completed within 18 months.

A detailed schedule of public milestones can be found at: <https://www.nrc.gov/reactors/operating/licensing/renewal/applications/comanche-peak.html>. The review is currently on schedule.

Application	Receipt Date	Acceptance Date	Expected License Issuance Date	Estimated Duration to Issue License (months)
Comanche Peak Units 1 and 2, LRA	10/3/2022	11/23/2022	September 2024	22 months

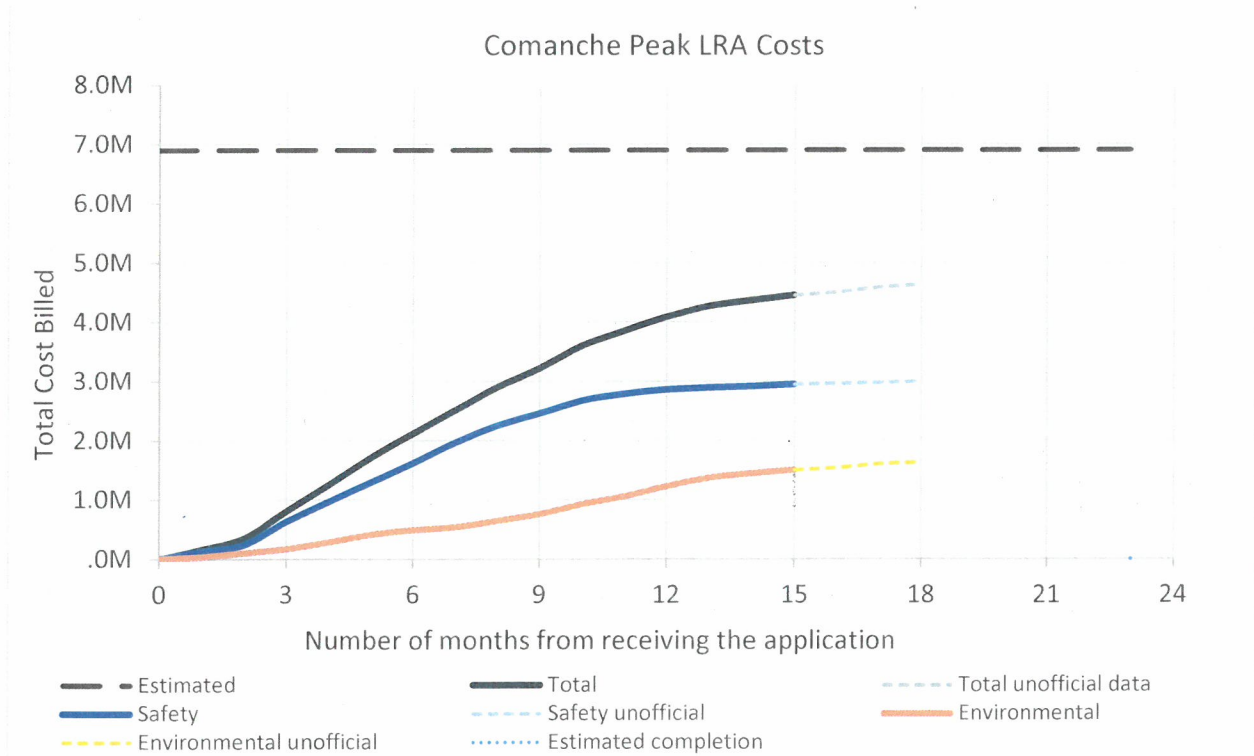
At the time of acceptance, the NRC staff estimated the Comanche Peak LRA review would require approximately 23,000 hours (ML22297A007). As of December 30, 2023, approximately 13,800 staff hours and \$0.4M in contractor costs have been charged. Per unofficial data, approximately 14,300 staff hours and \$0.5M in contractor costs have been charged as of March 23, 2024, which means only 62 percent of the original estimate for completing the project has been used. If contractor costs are also considered, then approximately 67 percent of the original expected resources have been expended.

At this point, according to preliminary data that hasn't been validated nor invoiced to the applicant, it appears that the staff will be under budget for this review. The table below summarizes the total costs expended as of dates shown:

License Renewal Application	Estimated Total Hours	Estimated Total Costs	Total Staff Hours Billed [Safety & Environmental]	Total Staff Hours Costs Billed [Safety & Environmental]	Contractor Costs Billed	Total Costs Billed
Comanche Peak LRA (as of 12/30/23) ¹	23,000	\$6.9M	Approx. 13,800 [Safety: 10,100 Env: 3,700 ³]	\$4.0M	\$0.4M	\$4.4M
Unofficial Data through 3/23/2024 ² :			Approx. 14,300 [Safety: 10,300 Env: 4,000 ³]	\$4.1M	\$0.5M	\$4.6M

Notes:

1. Official NRC billing data is provided through December 30, 2023. These staff hours and contractor costs have been invoiced to the licensee.
2. The next NRC billing cycle will take place in mid-April and will include staff hours and contractor costs charged through March 23, 2024. The Comanche Peak billing information provided above through March 23, 2024, is based on unofficial financial data which has not been validated or invoiced to the licensee.
3. The total staff hours billed for environmental does not reflect hours expended by contractors in support of the environmental review of the application. Contractor resources used to complete this review are reflected in the Contractor Costs Billed column which is a lagging indicator.



Safety and Environmental Reviews

In SECY-24-0026, Appendices D and E, the staff describes various efficiency efforts, many of which were applied to the Comanche Peak LRA review. For the safety review, the staff implemented 88 percent of the initiatives from table D-1 and 57 percent of the initiatives from table D-2 of appendix D. For the environmental review, the staff implemented 78 percent of the

initiatives from table E-2 of appendix E. Vistra proactively engaged in effective pre-application communication with the staff, submitted a complete and well-developed LRA, and promptly responded to the staff's questions. These factors, together with the process enhancements implemented by the staff, significantly contributed to the staff's efficient review.

During the aging management and environmental audits, Vistra continued to be proactive; the prompt responses to the staff's inquiries contributed to productive technical discussions. Comprehensive and thorough information on Vistra's electronic portal allowed the staff to efficiently identify what needed to be submitted on the docket to support both the safety and environmental reviews.

For the safety review, Vistra volunteered to submit three supplements over the course of the review, contributing to the efficient resolution of technical issues discussed during the audit and decrease in requests for additional information (RAIs) and requests for confirmatory information (RCIs). The staff issued 29 RAIs and 7 RCIs to obtain the information required for a regulatory finding. In comparison to a previous subsequent license renewal application (SLRA) review, Comanche Peak's safety review involved approximately 70 percent fewer RAIs and 70 percent fewer RCIs. The staff did not encounter any significantly challenging technical issues and did not need to use open or confirmatory items¹ during the review. This allowed the staff to eliminate an ACRS Subcommittee Meeting from the schedule that would have been used to consider such open or confirmatory items.

For the environmental review, as an initial license renewal, the staff was able to rely on the 2013 License Renewal Generic Environmental Impact Statement (LR GEIS) findings to support development of the environmental impact statement (EIS). For this review, the staff leveraged contractor support for many resource areas. Nearly all of the contractor billed hours provided in the table above reflect resources used to support the environmental review. The staff was able to effectively use technology to conduct both a virtual and reduced in-person audit resulting in limited RAIs and RCIs (12 RAIs and 25 RCIs). In addition, the staff received over 2,500 comment letters during the scoping process and successfully dispositioned these comments by applying process improvements. The staff received significantly fewer comments on the draft SEIS, which will be dispositioned in the final SEIS scheduled for publication in April 2024. The staff notes that the additional level of effort expected to finalize the SEIS and prepare the record of decision will be minimal.

Monticello Subsequent License Renewal Application:

On January 9, 2023, Northern States Power Company, a Minnesota corporation (NSPM), submitted a SLRA for Renewed Facility Operating License No. DPR-22 for Monticello Unit 1 (ML23009A352).

¹ An item is considered to be open if, in the staff's judgment, the staff has not determined that the item meets all applicable regulatory requirements at the time of the issuance of the safety evaluation. An item is considered confirmatory if, in the staff's judgment, the staff and the applicant have reached an acceptable resolution that meets all applicable regulatory requirements, but at the time of the issuance of the safety evaluation, the staff had not received the necessary documentation to confirm the resolution.

After reviewing the Comanche Peak LRA, including additional information Vistra submitted through January 31, 2024, the staff has determined that no open nor confirmatory items exist that require a formal response from Vistra.

By letter dated February 23, 2023, the NRC staff accepted the application for review (ML23047A175). For the safety review, the staff issued the safety evaluation in 13 months, on March 18, 2024 (ML24077A001). The ACRS Full Committee Meeting is scheduled for April 30, 2024, which will be followed by a letter documenting the ACRS' recommendation on the staff's review.

For the environmental review, the staff is preparing a full site-specific EIS for the SLR request. The staff issued the draft site-specific EIS on April 12, 2024, and plans to issue the final EIS by October 2024, which would be 20 months from acceptance. A detailed schedule of public milestones can be found at:

<https://www.nrc.gov/reactors/operating/licensing/renewal/applications/monticello-subsequent.html>. The safety review is currently ahead of schedule and the environmental review is on track for the final site-specific EIS, though the draft site-specific EIS was issued later than planned, as discussed below.

Application	Receipt Date	Acceptance Date	Expected License Issuance Date	Estimated Duration to Issue License (months)
Monticello Unit 1, SLRA	1/9/2023	2/23/2023	12/2024	22 months

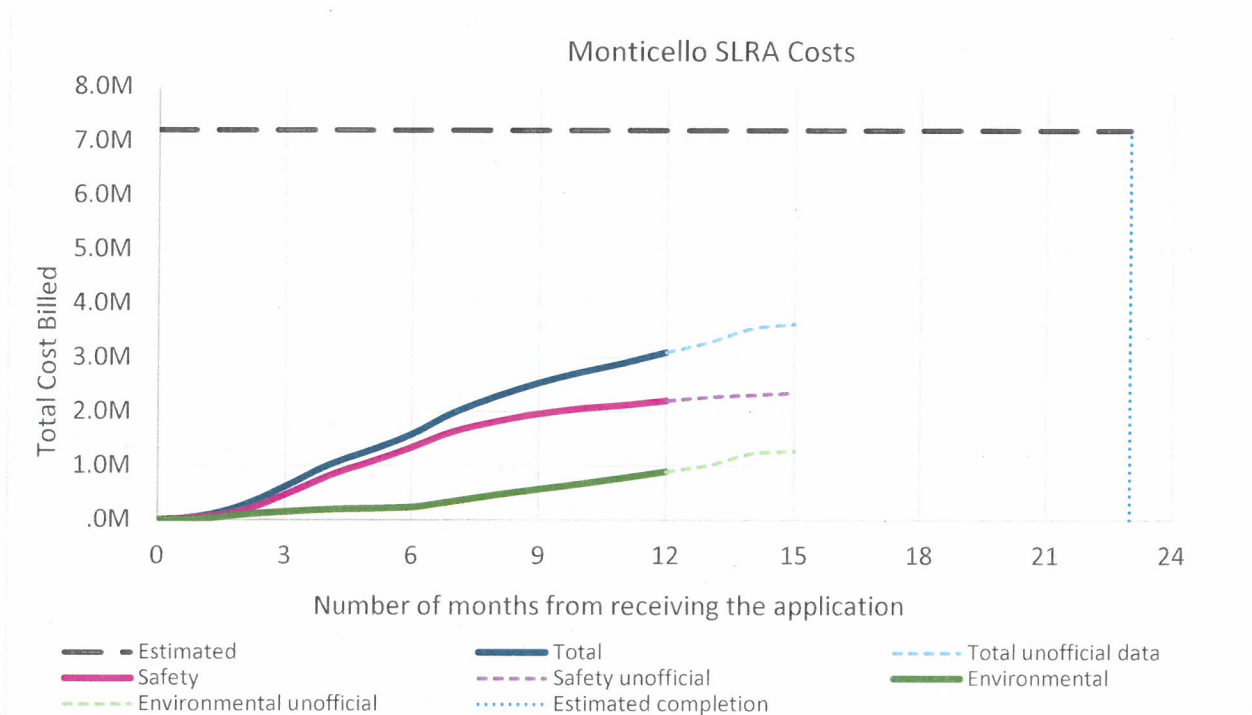
At the time of acceptance, the NRC staff estimated the Monticello SLRA would require approximately 24,000 hours (ML23047A175). As of December 30, 2023, approximately 9,700 staff hours and \$0.2M in contractor costs have been charged for the review. Using unofficial data, the approximate hours charged as of March 23, 2024, are 11,000 staff hours, 46 percent of the original estimate for the project and \$0.4M in contractor costs. If contractor costs are also considered, then approximately 50 percent of the original expected resources have been expended.

At this point, based on preliminary data that hasn't been validated or billed to the applicant for the Monticello review, which is not as far along as the Comanche Peak review, the staff is currently under budget relative to its anticipated resource expenditures. A summary of the total costs expended are illustrated in the table below:

License Renewal Application	Estimated Total Hours	Estimated Total Costs	Total Staff Hours Billed [Safety & Environmental]	Total Staff Hours Costs Billed [Safety & Environmental]	Contractor Costs Billed	Total Costs Billed
Monticello, Unit 1 – SLRA	24,000	\$7.2M	Approx. 9,700 [Safety: 7,500 Env: 2,200 ³]	\$2.9M	\$0.2M	\$3.1M
<i>Unofficial Data through 3/23/2024²:</i>			Approx. 11,000 [Safety: 8,000 Env: 3,000 ³]	\$3.2M	\$0.4M	\$3.6M

Notes:

1. Official NRC billing data is provided through December 30, 2023. These staff hours and contractor costs have been invoiced to the licensee.
2. The next NRC billing cycle will take place in mid-April and will include staff hours and contractor costs charged through March 23, 2024. The Monticello billing information provided above through March 23, 2024, is based on unofficial financial data which has not been validated or invoiced to the licensee.
3. The total staff hours billed for environmental does not reflect hours expended by contractors in support of the environmental review of the application. Contractor resources used to complete this review are reflected in the Contractor Costs Billed column which is a lagging indicator.



Safety and Environmental Reviews

Similar to Comanche Peak, the Monticello SLR review also leveraged a significant number of efficiency initiatives from SECY-24-0026 that have contributed to a decrease in hours expended. For the safety review, the staff implemented 100 percent of the initiatives from table D-1 and 57 percent of the initiatives from table D-2 of appendix D. For the environmental review, the staff implemented most of the initiatives from table E-2 of appendix E.

For the Monticello SLR review, the NRC staff found the interactions with NSPM to be productive. For the safety review, a majority of the staff's questions and technical issues were resolved in the audits. In addition to the aging management audit, the staff engaged in two additional focused audits to address open issues related to irradiated concrete and containment and recent operating experience involving severe external corrosion of underground piping. The effective conversations between the staff and the applicant helped the technical reviewers to reach their safety finding of reasonable assurance of adequate protection of public health and safety in a timely manner.

Additionally, NSPM volunteered to submit eight supplements to the SLRA, reducing the number of RAIs and RCIs required (23 RAIs and 3 RCIs). In comparison to a review of an early SLRA, Monticello's SLRA review issued approximately 75 percent fewer RAIs and 90 percent fewer RCIs. From a workload management standpoint, the timing of the Monticello SLR review showed that staggering the number of applications would be an ideal approach for future applications. The application arrived 3 months after the previous submittal and the following application was more than 3 months later, aligned with the staff's recommendation in SECY-24-0026 for the industry to stagger application submittals. Staggering submittals minimizes staffing constraints and allows staff experts to complete key activities on one review before transitioning efficiently to the next review. In addition, the safety review did not identify any significant technical issues, nor require usage of open or confirmatory items, thereby allowing the staff to maintain its projected schedule to meet directly with the ACRS Full Committee.

For the environmental review, the staff again leveraged contractor support for most resource areas. Nearly all of the contractor billed hours provided in the table above reflect resources used to support the environmental review. The staff was able to effectively use technology to conduct both a virtual and limited in-person audit resulting in staff issuing 11 RAIs and 23 RCIs. The applicant needed additional time to address requests related to historical and cultural resources and to respond to an RAI related to a safety issue that had environmental implications. This resulted in an extension in the timeline for issuance of the draft site-specific EIS; however, the overall schedule for the final EIS and licensing decision is still on track. The issuance of the Monticello final EIS is expected after the issuance of the 2024 LR GEIS rulemaking, so additional staff effort will be required to ensure that the comment responses and edits to the EIS are responsive to both the site-specific review and the findings in the 2024 LR GEIS. In addition, the final site-specific EIS and license decision will need to account for the site-specific evaluations. Considering the post GEIS reconciliation and the uncertainty of level of effort to disposition comments on the draft EIS, the staff estimates an additional 30 percent of the original estimate of staff and contractor level of effort to finalize the EIS and prepare the record of decision.

Future Reviews:

Based on the experience with these reviews, the staff has lowered its estimates for recently accepted applications and expects the trend to continue as more experience is gained. Review resource estimates have been approximately 19,000 hours for recent SLRs. The NRC staff anticipates further reductions with the implementation of the License Renewal Roadmap as detailed in SECY-24-0026. As discussed on page 2 of SECY-24-0026, the staff plans to develop a generic revised estimate of hours starting with applications received in fiscal year (FY) 2026. The safety review hours for first three SLR applications received, which were for six reactors total, ranged from approximately 15,700 hours to 18,800 hours. Safety review hours for later

requests have been trending down. Assuming a high-quality application, preceded by effective pre-application engagement, and an applicant that provides sufficient and timely responses to staff's audit questions and RAIs, the staff estimates that after the implementation of the License Renewal Roadmap's Tiered Approach and Phase 3, "Additional Process Improvements," efficiencies, the safety review hours may be as low as 10,000 hours. However, this estimate will be refined over the next year and a half as the staff gains experience with implementing the License Renewal Roadmap and collects actual data that can inform the estimate. (The first application to fully benefit from the Phase 1, "Process Improvements," and Phase 2, "Tiered Approach," is expected in April 2024.)

For the environmental reviews of the first three SLRs (plant-specific supplements to the LR GEIS), the staff expended a range of hours from approximately 5,600 to 11,700. Staff considers the 11,700 hours as an outlier as the review involved unusually complex, site-specific issues. For the remaining two, the average SLR environmental review was about 6,300 hours. Comanche Peak, while being an initial license renewal, does provide a current example of a plant-specific supplement to the LR GEIS. For Monticello's site-specific SLR, the staff was able to implement efficiency measures noted above. While not directly comparable to future SLR reviews that could rely on a LR GEIS, these examples demonstrate that the process improvements being implemented would reduce resources needed to perform the reviews. For future SLR reviews, 75 percent of the environmental issues addressed in license renewal can rely on the generic findings in the LR GEIS and the staff estimates SLR environmental reviews for non-complex sites could be as low as 5,000 hours. As staff gains experience with conducting SLR reviews post issuance of the revised LR GEIS, it will continue to refine this estimate.

The staff, therefore, estimates that a revised generic resource estimate of 15,000 hours total could be sufficient to reach a finding of reasonable assurance of adequate protection beginning with the applications received in FY 2026. This estimate will continue to be refined as data from reviews is collected and analyzed. Nevertheless, a revised generic resource estimate, and the 18-month review schedule target, will be leveraged to develop application-specific initial LR and SLR review schedules and resource estimates that assume productive pre-application engagement; a high-quality application; the applicant's proactive engagement in providing the facility's risk and safety insights, operating experience, and timely responses to the staff's audit questions and RAIs; and the staff's process improvements for conducting a timely review.

CONCLUSION:

As discussed in SECY-24-0026 and above, the NRC staff has been identifying and implementing efficiencies in the LR review process while maintaining focus on reasonable assurance of adequate protection of public health and safety. The efficiencies implemented thus far are resulting in decreased resources needed to complete the reviews compared to prior reviews, as shown in the emergent data for the Comanche Peak and Monticello reviews. Further reductions in the resources are expected to be realized as the staff has more experience with the new approaches, learns lessons, and applies those going forward. Although the staff's efforts are one reason for the reduced resources expended in the

Comanche Peak and Monticello reviews, the licensees' efforts are equally important. The combined efforts of the staff and the licensees will be needed to achieve the expected estimated resources and the 18-month schedule. Based on the Comanche Peak and Monticello reviews, the NRC staff is optimistic that it will realize the expected efficiencies described in SECY-24-0026 and in this supplement.

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objections.



Raymond V. Furstenau
Acting Executive Director for Operations

SUBJECT: ACHIEVING TIMELY COMPLETION OF LICENSE RENEWAL SAFETY AND ENVIRONMENTAL REVIEWS (LICENSE RENEWAL ROADMAP)
 DATED: APRIL 15, 2024

SRM-M231102-1

ADAMS Accession No.: ML24101A364

SECY-012

OFFICE	NRR/DNLR/NLRP: PM	NMSS/REFS/ERLRB: PM	NRR/DNLR/NLRP: BC	NMSS/REFS: BC
NAME	AWu	KConway	LGibson	SKoenick
DATE	4/10/24	4/10/24	4/10/24	4/10/24
OFFICE	NRR/DNRL: D	OCFO/DOB: DD	NMSS/REFS: D	NMSS: D
NAME	BSmith	EBenner	CRegan	JLubinski
DATE	4/11/24	4/11/24	4/11/24	4/12/24
OFFICE	OGC	NRR: D	Acting EDO	
NAME	SVrahoretis(DRoth for)	AVeil	RFurstenau	
DATE	4/12/24	4/12/24	4/15 /24	

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