



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 12, 2024

Mr. George Wilson
Vice President, Regulatory Affairs
TerraPower, LLC
15800 Northup Way
Bellevue, WA 98008

SUBJECT: US SFR OWNER, LLC – KEMMERER POWER STATION UNIT 1
CONSTRUCTION PERMIT APPLICATION REVIEW SCHEDULE AND
RESOURCE ESTIMATE (EPIDS: L-2024-CPS-0000 AND L-2024-LNE-0002)

Dear Mr. Wilson:

This letter provides a summary of the schedule and a resource estimate for the detailed review of the Kemmerer Power Station Unit 1 (hereafter referred to as Kemmerer 1) construction permit (CP) application. On May 21, 2024, the U.S. Nuclear Regulatory Commission (NRC) staff sent US SFR Owner, LLC (USO), a wholly owned subsidiary of TerraPower, LLC (TerraPower), a letter accepting the Kemmerer 1 CP application for detailed review (Agencywide Documents Access and Management System (ADAMS) Accession No. ML24135A109). A notice of the acceptance for docketing was published in the *Federal Register* on June 4, 2024 (89 FR 47997). The tables below provide key milestones for both the safety review and the environmental review.

Safety Review Milestones	Estimated Completion
Draft Safety Evaluation (SE) ¹	March 2025
Advanced SE ²	November 2025
Final SE ³	August 2026

Notes:

1. SE sections drafted, and information gaps identified.
2. Begin NRC management, legal, and Advisory Committee on Reactor Safeguards review of SE sections.
3. Final SE compiled and issued.

Environmental Review Milestones	Estimated Completion
Draft Environmental Impact Statement (EIS) ¹	July 2025
Final EIS ⁽²⁾	May 2026

Notes:

1. Draft and legal review of EIS sections completed. Open items resolved.
2. Publication and issuance activities completed.

The schedule reflects the NRC staff's best estimate of the level of effort needed for application review areas and the NRC staff's understanding of USO's deployment timeline for Kemmerer 1. The schedule was developed considering: (1) the complexity of the technical and regulatory issues associated with the design; (2) the completeness, quality, and size of the application; (3) the pre-application, readiness review, and acceptance review engagements; (4) the availability of staff resources and prioritization with concurrent workload (e.g., 13 referenced topical reports under review); (5) the schedule and resources executed for previous non-light water reactor construction permit application reviews; and (6) the generic milestones of requested activities of the Commission. This schedule does not include the hearing process, which follows completion of the SE and EIS.

The schedule is also based, in part, on USO's commitment to provide responses to Requests for Additional Information (RAIs) within 30 days after the issuance of the RAIs and within 45 days after the issuance of the second round of RAIs, if needed. The applicant is also expected to provide support in a timely and organized manner during technical audits determined necessary by the NRC staff. To achieve this schedule, the NRC staff intends to engage USO frequently to resolve open items and address emerging technical and regulatory issues. Delays in the NRC staff's receipt of necessary information could result in changes to the review schedule. The NRC requests that USO inform the NRC staff in writing, as early as possible, should potential delays arise in its support of the schedule.

The NRC staff will conduct its safety-focused review in a risk-informed manner. The NRC staff will leverage the guidance in Reg Guide (RG) 1.253, "Guidance for a Technology-Inclusive Content of Application Methodology to Inform the Licensing Basis and Content of Applications for Licenses, Certifications, and Approvals for Non-Light-Water Reactors," Revision 0 (ML23269A222), and the acceptance criteria in DANU-interim staff guidance (ISG)-2022-01, "Review of Risk-Informed, Technology-Inclusive Advanced Reactor Applications – Roadmap," (ML23277A139) issued in March 2024. RG 1.253 formally endorsed NEI 21-07, "Technology Inclusive Guidance for Non-Light Water Reactors Safety Analysis Report," Revision 1 (ML21343A292).

Based on pre-application activities and the information provided in USO's Kemmerer 1 CP application submittal, the NRC staff estimates that it will need approximately 27,000 staff hours and \$4 million in contractor support to complete the safety and environmental reviews of the application. Hearing activities are not included in this resource estimate.

If there are emergent complexities or challenges in the NRC staff's review that would cause changes to the initial forecasted completion date or significant changes in the estimated resources, the reasons for the changes, along with the new estimates will be communicated via separate correspondence. The schedule and resource estimates could change due to several factors, including RAIs, unanticipated changes to the scope of the review, unsolicited supplements to the application, design changes, and other factors. Milestones and resource estimates for hearing activities will be developed after hearing dates are established by the Commission or the Atomic Safety and Licensing Board.

G. Wilson

- 3 -

If you have any questions regarding this matter, please contact me at (301) 415-0673 or by via email at Mallecia.Sutton@nrc.gov.

Sincerely,

/RA/

Mallecia Sutton, Senior Project Manager
Advanced Reactor Licensing Branch 1
Division of Advanced Reactors and Non-Power
Production and Utilization Facilities
Office of Nuclear Reactor Regulation

Docket No.: 50-0613

cc: TerraPower Natrium
via Gov Delivery

SUBJECT: US SFR OWNER, LLC – KEMMERER POWER STATION UNIT 1
 CONSTRUCTION PERMIT APPLICATION REVIEW SCHEDULE AND
 RESOURCE ESTIMATE (EPIDS: L-2024-CPS-0000 AND L-2024-LNE-0002)
 DATED: JUNE 12, 2024

DISTRIBUTION:

RidsNrrDanu Resource
 RidsNrrDanuUal1 Resource
 RidsACRSMailCTR Resource
 RidsOgcMailCenter Resource
 MShams, NRR
 JBowen, NRR
 MWentzel, NRR
 RTaylor, NRR
 AVeil, NRR
 JMoses, NMSS
 CRegan, NMSS
 RLewis, NMSS
 JLubinski, NMSS
 RAnzalone, NRR
 DAtkinson, NRR
 RBrusselmans, NRR
 DGreene, NRR
 CDeMessieres, NRR
 SDevlin-Gill, NRR
 MSutton, NRR
 JBorromeo, NRR
 DBarnhurst, NMSS
 PVokoun, NMSS
 MNagel, NMSS
 MRichmond, NMSS
 JOHara, NMSS

ADAMS Accession No.: ML24162A063**NRR-106**

OFFICE	NRR/DANU/UAL1:PM	NRR/DANU/UAL1:PM	NMSS/REFS/ERNRB:PM
NAME	RBrusselmans	MSutton	PVokoun
DATE	6/2/2024	6/3/2024	6/6/2024
OFFICE	NRR/DANU/UAL1:LA	NMSS/REFS/ERNRB:BC	NRR/DANU/UTB2:BC
NAME	DGreene	DBarnhurst	CDeMessieres
DATE	6/6/2024	6/6/2024	6/10/2024
OFFICE	NRR/DANU/UAL1:BC	NRR/DANU/UAL1:PM	
NAME	JBorromeo (SDevlin-Gill for)	MSutton	
DATE	6/10/2024	6/12/2024	

OFFICIAL RECORD COPY