

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

November 25, 2025

Darrell Gardner Sr. Director, Licensing Kairos Power LLC 707 W Tower Ave Alameda, CA 94501

SUBJECT: KAIROS POWER LLC - FINAL SAFETY EVALUATION OF TOPICAL REPORT,

"KP-FHR CORE DESIGN AND ANALYSIS METHODOLOGY," REVISION 1

(EPID NO: L-2024-TOP-0013)

Dear Darrell Gardner:

This letter provides the final safety evaluation (SE) for the Kairos Power, LLC (Kairos) topical report (TR) "KP-FHR Core Design and Analysis Methodology," Revision 1. By letter dated April 3, 2024, Kairos submitted for U.S. Nuclear Regulatory Commission (NRC) staff review KP-TR-024-P, "KP-FHR Core Design and Analysis Methodology," Revision 0 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML24095A255). On August 22, 2024, the NRC issued an audit plan for the purpose of gaining a better understanding of KP-TR-024-P (ML24222A276). By letter dated June 17, 2025, Kairos submitted Revision 1 of KP-TR-024-P (ML25168A340). The NRC staff issued the audit summary report on November 20, 2025 (ML25142A086).

The NRC staff's final SE for KP-TR-024-P, "KP-FHR Core Design and Analysis Methodology," Revision 1 is enclosed. The NRC staff provided Kairos with a draft of the SE for the purpose of identifying proprietary export-controlled information on July 25, 2025 (ML25206A085). On November 21, 2025, Kairos confirmed that the proprietary export-controlled information in the final SE was appropriately marked.

The NRC staff requests that Kairos publish an accepted version of this TR within 3 months of receipt of this letter. The accepted version shall incorporate this letter and the enclosed SE after the title page. The accepted version shall include an "-A" (designated accepted) following the TR identification number.

The Enclosure to this letter contains Proprietary Export Controlled Information. When separated from the Enclosure this letter is DECONTROLLED

D. Gardner - 2 -

If you have any questions regarding this matter, please contact Cayetano Santos Jr. via email at Cayetano.Santos@nrc.gov.

Sincerely,

Josh Borromeo, Chief Advanced Reactor Licensing Branch 1 Division of Advanced Reactors and Non-Power Production and Utilization Facilities Office of Nuclear Reactor Regulation

Project No.: 99902069

Enclosure:

Safety Evaluation

cc: Kairos Power Hermes via GovDelivery

SUBJECT: KAIROS POWER LLC - FINAL SAFETY EVALUATION OF TOPICAL REPORT,

"KP-FHR CORE DESIGN AND ANALYSIS METHODOLOGY," REVISION 1

(EPID NO: L-2024-TOP-0013) DATE: NOVEMBER 21, 2025

DISTRIBUTION:

PUBLIC

RidsACRS MailCTR Resource

RidsNrrDanu Resource

RidsNrrDanuUal1 Resource

RidsOgcMailCenter Resource

RidsOpaMailCenter Resource

JBorromeo, NRR

CdeMessieres, NRR

PSawant, NRR

ASiwy, NRR

CAdams, NRR

DGreene, NRR

BBettes, NRR

CSantos, NRR

JKaizer, NRR

ABielen, RES

CBoyd, RES

ADAMS Accession Nos.:

Pkg: ML25206A363 Letter: ML25206A366

Safety Evaluation (Proprietary): ML25206A370 Safety Evaluation (Non Proprietary): ML25206A372

OFFICE	NRR/DANU/UAL1:PM	NRR/DANU/UAL1:LA	OGC
NAME	CSantos	DGreene	Not Reviewed
DATE	6/17/2025	7/30/2025	
OFFICE	NRR/DANU/UTB2:BC	NRR/DANU/UAL1:BC	
NAME	CdeMessieres	JBorromeo	
DATE	7/21/2025	11/25/2025	

OFFICIAL RECORD COPY