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

January 5, 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, "SAFETY ANALYSIS METHODOLOGY FOR THE KAIROS POWER FLUORIDE SALT-COOLED HIGH-TEMPERATURE TEST REACTOR," REVISION 1 (EPID NO: L-2024-TOP-0022)

Dear Darrell Gardner:

This letter provides the final safety evaluation (SE) for the Kairos Power, LLC (Kairos) topical report (TR) "Safety Analysis Methodology for the Kairos Power Fluoride Salt-Cooled High-Temperature Test Reactor," Revision 1. By letter dated June 4, 2024, Kairos submitted for U.S. Nuclear Regulatory Commission (NRC) staff review KP-TR-020-P, "Safety Analysis Methodology for the Kairos Power Fluoride Salt-Cooled High-Temperature Test Reactor," Revision 0 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML24156A162). On September 25, 2024, the NRC issued an audit plan for the purpose of gaining a better understanding of KP-TR-020-P (ML24269A202). By letter dated July 29, 2025, Kairos submitted Revision 1 of KP-TR-020-P (ML25210A576). The NRC staff issued the audit summary report in letter dated January 5, 2026 (ML25344A109).

The NRC staff's final SE for KP-TR-020-P, "Safety Analysis Methodology for the Kairos Power Fluoride Salt-Cooled High-Temperature Test Reactor," Revision 1 is enclosed. The NRC staff provided Kairos a draft of the SE for the purpose of identifying proprietary export controlled information on September 11, 2025 (ML25258A013). Kairos provided comments regarding the proprietary export controlled information in the draft SE on October 20, 2025 (ML25317A661). The NRC staff incorporated those comments, as appropriate, into the final SE.

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

If you have any questions, please contact Brian Bettes via email at Brian.Bettes@nrc.gov.

Sincerely,

JOSHUA BORROMEO

Digitally signed by JOSHUA BORROMEO
Date: 2026.01.05 14:53:46 -05'00'

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

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