

January 24, 2024

Docket No. 50-611

Docket No. 50-612

US Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Subject: Kairos Power LLC  
Transmittal of Changes to Hermes 2 Construction Permit Application – PSAR Chapter 3 and Chapter 9

References: 1. Letter, Kairos Power LLC to Document Control Desk, "Submittal of the Preliminary Safety Analysis Report for the Hermes 2 Kairos Power Fluoride Salt-Cooled, High Temperature Non-Power Reactor (Hermes 2), Revision 0," July 14, 2023 (ML23195A122)  
2. Audit Plan, Nuclear Regulatory Commission, "Kairos Power LLC – Plan for a General Audit of the Hermes 2 Construction Permit Application," October 3, 2023 (ML23268A446)

In July 2023, Kairos Power submitted Revision 0 of the Preliminary Safety Analysis Report (PSAR) (Reference 1) as part of the Construction Permit Application (CPA) for the Hermes 2 non-power reactor. This letter transmits changes to the pages of the PSAR to address NRC feedback received on PSAR Chapter 3 and 9 in the General Audit (Reference 2). Changes to the pages of the PSAR are provided in Enclosure 1. Kairos Power requests NRC review of these changes as part of the continued review of the Hermes CPA.

If you have any questions or need any additional information, please contact Marty Bryan at bryan@kairospower.com or (865) 399-1136, or Darrell Gardner at gardner@kairospower.com or (704) 769-1226.

I declare under penalty of perjury that the foregoing is true and correct.  
Executed on January 24, 2024

Sincerely,



Peter Hastings, PE  
Vice President, Regulatory Affairs and Quality

Enclosure: Changes to PSAR Chapter 3 and 9

xc (w/enclosure):

William Jessup, Chief, NRR Advanced Reactor Licensing Branch

Michael Orenak, Project Manager, NRR Advanced Reactor Licensing Branch

Matthew Hiser, Project Manager, NRR Advanced Reactor Licensing Branch

Edward Helvenston, Project Manager, NRR Advanced Reactor Licensing Branch

Samuel Cuadrado de Jesus, Project Manager, NRR Advanced Reactor Licensing Branch

Cayetano Santos, Project Manager, NRR Advanced Reactor Licensing Branch