

May 16, 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 Chapters 3, 5, and 13

References: 1. Letter, Kairos Power LLC to Document Control Desk, “Submittal of the Construction Permit Application 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, “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 5 in the General Audit (Reference 2) as well as supplemental information relevant to that feedback. Changes to the pages of the PSAR are provided in Enclosure 1. Supplemental information evaluating design codes for the rupture disks discussed in Enclosure 1 is provided in Enclosure 2. Kairos Power requests NRC review of these changes as part of the continued review of the Hermes 2 CPA.

If you have any questions or need any additional information, please contact Austin Clark at [clark@kairospower.com](mailto:clark@kairospower.com) or (704) 247-6310 Ext. 1337, or Darrell Gardner at [gardner@kairospower.com](mailto:gardner@kairospower.com) or (704) 769-1226.

I declare under penalty of perjury that the foregoing is true and correct.  
Executed on May 16, 2024

Sincerely,



Peter Hastings, PE  
Vice President, Regulatory Affairs and Quality

Enclosure 1: Changes to Hermes 2 PSAR Chapters 3, 5, and 13  
Enclosure 2: Supplemental Information on Rupture Disk Design Code Evaluation

xc (w/enclosure):

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