

October 13, 2022

Docket No. 50-7513

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

Subject: Kairos Power LLC  
Transmittal of Changes to KP-TR-018 and PSAR Chapter 13

References: 1. Letter, Kairos Power LLC to Document Control Desk, "Submittal of the Preliminary Safety Analysis Report for the Kairos Power Fluoride Salt-Cooled, High Temperature Non-Power Reactor (Hermes), Revision 1," September 29, 2022 (ML22272A594)  
2. Audit Plan, Nuclear Regulatory Commission, "Kairos Power LLC – Hermes Construction Permit Preliminary Safety Analysis Report Chapter 6, Section 6.3 Audit Plan," February 12, 2022 (ML22039A226)

In September 2022, Kairos Power submitted Revision 1 of the Preliminary Safety Analysis Report (PSAR) (Reference 1) as part of the Construction Permit Application (CPA) for the Hermes non-power reactor. The submittal included Revision 1 of the Postulated Event Analysis Methodology Technical Report (KP-TR-018). This letter transmits changes to the pages of KP-TR-018 and the PSAR to address NRC feedback received in the PSAR Chapter 6, Section 6.3 Audit (Reference 2). Changes to the pages of KP-TR-018 and the PSAR are provided in Enclosure 1 and Enclosure 2, respectively. 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 Delaney Simmons at [simmons@kairospower.com](mailto:simmons@kairospower.com) or (605) 838-5132, 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 October 13, 2022



Peter Hastings, PE  
Vice President, Regulatory Affairs and Quality

Enclosure: (1) Changes to Postulated Event Analysis Methodology Technical Report (KP-TR-018)  
(2) Changes to PSAR Chapter 13

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xc (w/enclosure):

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**Enclosure 1**

**Changes to Postulated Event Analysis Methodology Technical Report (KP-TR-018)  
(Non-Proprietary)**

**Enclosure 2**

**Changes to Hermes PSAR Chapter 13**

**(Non-Proprietary)**