

February 10, 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 Hermes Construction Permit Application

- 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)," September 29, 2021 (ML21272A376)
 2. Letter, Kairos Power LLC to Document Control Desk, "Submittal of the Environmental Report for the Kairos Power Fluoride Salt-Cooled, High Temperature Non-Power Reactor (Hermes)," October 31, 2021 (ML21306A131)
 2. Kairos Power LLC to Document Control Desk, "Graphite Material Qualification for the Kairos Power Fluoride Salt-Cooled High-Temperature Reactor," KP-TR-014, Revision 1, July 8, 2021 (ML21190A220)
 3. Kairos Power LLC to Document Control Desk, "Metallic Materials Qualification for the Kairos Power Fluoride Salt-Cooled High Temperature Reactor," KP-TR-013, Revision 0, June 30, 2020 (ML20182A800)

In September and October 2021, Kairos Power submitted a Construction Permit Application (CPA) for the Hermes non-power reactor, including a Preliminary Safety Analysis Report (PSAR) (Reference 1) and an Environmental Report (ER) (Reference 2). Subsequent to the initial submittal of these documents, Kairos Power made a decision to reduce the Hermes operating life from 10 years to 4 years. This change has a negligible impact on the CPA but has a minor effect on content in Chapters 1, 2, 4, 9, 13, and 15 of the PSAR and Chapters 2, 4, and 5 of the ER. Kairos Power requests NRC review of these changes as part of continued review of the Hermes CPA.

Changes to the pages of the PSAR affected by this decision are provided in Enclosure 1. Changes to the pages of the ER affected by this decision are provided in Enclosure 2.

This change also impacts two topical reports referenced in the CPA that are currently under review by NRC staff, KP-TR-014 (Reference 2) and KP-TR-013 (Reference 3). Kairos Power will provide updates to these reports as part of changes to these documents that are occurring as part of their review process.

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If you have any questions or need any additional information, please contact Drew Peebles at peebles@kairospower.com or at (704) 275-5388 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 February 10, 2022.

A handwritten signature in black ink, appearing to read 'Peter Hastings', with a stylized flourish at the end.

Peter Hastings, PE
Vice President, Regulatory Affairs and Quality

Enclosures:

- 1) Change Pages for PSAR
- 2) Change Pages for ER

xc (w/enclosure):

William Kennedy, Acting Chief, NRR Advanced Reactor Licensing Branch
Benjamin Beasley, Project Manager, NRR Advanced Reactor Licensing Branch
Edward Helvenston, Project Manager, NRR Advanced Reactor Licensing Branch
Samuel de Jesus Cuadrado, Project Manager, NRR Advanced Reactor Licensing Branch
Tamsen Dozier, Environmental Project Manager, NMSS, Environmental Review Branch
Peyton Doub, Environmental Project Manager, NMSS, Environmental Review Branch

Enclosure 1
Change Pages for PSAR
(Non-Proprietary)

Enclosure 2
Change Pages for ER
(Non-Proprietary)