

August 31, 2022

Docket No. 50-7513

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

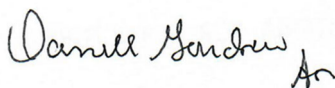
Subject: Kairos Power LLC
Response to NRC Request for Additional Information 348 and 339

- 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. Email, Nuclear Regulatory Commission Benjamin Beasley to Darrell Gardner, Drew Peebles, Jim Tomkins, and Marty Bryan "Final RAI 348 on Shutdown Rod Reliability and Defense in Depth" August 8, 2022 (ML22227A180)
 3. Email, Nuclear Regulatory Commission Benjamin Beasley to Darrell Gardner, Drew Peebles, Jim Tomkins, and Marty Bryan "NRC Final Request for Additional Information 339 for Hermes Construction Permit Application Regarding Inspection of Vessel Internals and the Natural Circulation Flow Path" August 8, 2022 (ML22230D076)

In September 2021, Kairos Power submitted a Preliminary Safety Analysis Report (PSAR) (Reference 1) as part of the Construction Permit Application (CPA) for the Hermes non-power reactor. On August 8, 2022, the Nuclear Regulatory Commission transmitted Requests for Additional Information (RAI) 348 and RAI 339 (Reference 2 and 3, respectively). Enclosure 1 provides Kairos Power's response to RAI 348 and Enclosure 2 provides the response to RAI 339. Kairos Power requests NRC review of these responses as part of the continued review of the Hermes CPA.

If you have any questions or need any additional information, please contact Nicole Schlichting schlichting@kairospower.com or (980) 215-9252, or Darrell Gardner at gardner@kairospower.com or (704) 769-1226.

Sincerely,



Peter Hastings, PE
Vice President, Regulatory Affairs and Quality

Enclosures:

- 1) Response to NRC Request for Additional Information 348
- 2) Response to NRC Request for Additional Information 339

xc (w/enclosure):

William Kennedy, Acting Chief, NRR Advanced Reactor Licensing Branch
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