



NUCLEAR REGULATORY COMMISSION

[Docket No. 50-7513; NRC-2021-0193]

Kairos Power LLC; Hermes Test Reactor; Environmental Assessment and Finding of No Significant Impact

AGENCY: Nuclear Regulatory Commission.

ACTION: Notice; issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC or the Commission) is issuing an environmental assessment (EA) and finding of no significant impact (FONSI) regarding the Kairos Power LLC (Kairos or the licensee) request to amend Construction Permit No. CPTR-6 for the Hermes test reactor facility in Oak Ridge, Tennessee. The amendment request seeks NRC approval to extend the latest date for completion of the construction of the Hermes test reactor facility from December 31, 2026, to April 30, 2029.

DATES: The EA and FONSI referenced in this document are available on **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: Please refer to Docket ID NRC-2021-0193 when contacting the NRC about the availability of information regarding this document. You may obtain publicly available information related to this document using any of the following methods:

- **Federal Rulemaking Website:** Go to <https://www.regulations.gov> and search for Docket ID NRC-2021-0193. Address questions about Docket IDs in Regulations.gov to Bridget Curran; telephone: 301-415-1003; email: Bridget.Curran@nrc.gov. For technical questions, contact the individual(s) listed in the “For Further Information Contact” section of this document.

- **NRC’s Agencywide Documents Access and Management System**

(ADAMS): You may obtain publicly available documents online in the ADAMS Public Documents collection at <https://www.nrc.gov/reading-rm/adams.html>. To begin the

search, select “Begin ADAMS Public Search.” For problems with ADAMS, please contact the NRC’s Public Document Room (PDR) reference staff at 1-800-397-4209, at 301-415-4737, or by email to PDR.Resource@nrc.gov. For the convenience of the reader, instructions about obtaining materials referenced in this document are provided in the “Availability of Documents” section.

- **NRC’s PDR:** The PDR, where you may examine and order copies of publicly available documents, is open by appointment. To make an appointment to visit the PDR, please send an email to PDR.Resource@nrc.gov or call 1-800-397-4209 or 301-415-4737, between 8 a.m. and 4 p.m. eastern time (ET), Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Cayetano Santos Jr., Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-7270; email: Cayetano.Santos@nrc.gov.

SUPPLEMENTARY INFORMATION:

I. Introduction

The NRC is considering issuance of an amendment to Construction Permit No. CPTR-6, issued to Kairos for the construction of the Hermes test reactor facility in Oak Ridge, Tennessee. Kairos requested the amendment by letter dated March 24, 2026, in accordance with section 50.90 of title 10 of the *Code of Federal Regulations* (10 CFR), “Application for amendment of license, construction permit, or early site permit,” and 10 CFR 50.55(b). The amendment would extend the latest date for completion of the construction of the Hermes test reactor facility from December 31, 2026, to April 30, 2029.

In accordance with 10 CFR 51.21, “Criteria for and identification of licensing and regulatory actions requiring environmental assessments,” the NRC prepared an EA, pursuant to 10 CFR 51.30, “Environmental assessment,” that analyzes the environmental impacts of the proposed amendment and alternatives, as appropriate. Based on the results of this EA, which is set forth in section II of this document, and in

accordance with 10 CFR 51.31(a), the NRC has determined not to prepare an environmental impact statement for the proposed amendment and is issuing a FONSI, which is set forth in section III of this document.

II. Environmental Assessment

Description of the Proposed Action

The proposed action would amend Construction Permit No. CPTR-6 to extend the latest date for completion of the construction of the Hermes test reactor facility from December 31, 2026, to April 30, 2029. The proposed action was requested in the licensee's application dated March 24, 2026.

The proposed action would not allow any work to be performed that is not already authorized by the construction permit. The proposed action would grant Kairos more time to complete the construction of the Hermes test reactor facility in accordance with the construction permit.

Need for the Proposed Action

Kairos performed a review of the Hermes test reactor facility construction schedule and determined that construction will not be completed by December 31, 2026, the latest date for completion of construction prescribed in Construction Permit No. CPTR-6. Kairos stated that delays have occurred due to two factors. First, Kairos stated in its amendment request that it has performed non-nuclear demonstrations of first-of-a-kind construction techniques and design features prior to performing them on the Hermes nuclear facility for the purpose of identifying construction challenges and lessons learned in the construction processes for the Hermes test reactor facility. Kairos further stated that performing these non-nuclear demonstration activities has extended the construction timeline. Second, Kairos stated that site preparation work, including removal of legacy structures from the Hermes test reactor footprint, required extensive coordination with other organizations such as the Department of Energy and required significantly more work than originally planned. Kairos now expects the construction of the Hermes test reactor facility to be completed in 2028. To accommodate this

construction schedule and to incorporate conservatism, Kairos is requesting to extend the latest date for completion of the construction of the Hermes test reactor facility to April 30, 2029.

The NRC regulation in 10 CFR 50.55(b) states that upon good cause shown, the Commission will extend the completion date for a reasonable period of time and that the Commission will recognize, among other things, “developmental problems attributable to the experimental nature of the facility or fire, flood, explosion, strike, sabotage, domestic violence, enemy action, an act of the elements, and other acts beyond the control of the permit holder,” as a basis for extending the completion date.

Environmental Impacts of the Proposed Action

The NRC has completed its environmental review of the proposed action and concludes that there are no significant environmental impacts associated with the proposed action.

The proposed action would only extend the period of construction activities already authorized by Construction Permit No. CPTR-6 and would not authorize any new construction activities, any additional land disturbance, or any modifications to the facility from the terms in the construction permit.

In 2023, the NRC evaluated the environmental impacts associated with constructing, operating, and decommissioning the Hermes test reactor facility in NUREG-2263, “Environmental Impact Statement for the Construction Permit for the Kairos Hermes Test Reactor Final Report.” NUREG-2263 concluded that the potential impacts from the facility would be small for each potentially affected environmental resource.

In May 2025, Kairos commenced safety-related construction activities at the Hermes test reactor site in Oak Ridge, Tennessee. Kairos has completed construction of the foundation drilled piers and is making progress in the design and construction of the facility. Since the proposed action would only extend the period of already-authorized construction activities, it does not involve any different impacts or significant changes to

those impacts described and analyzed in the previous environmental documents.

Therefore, there would be no significant non-radiological or radiological environmental impacts associated with the proposed action. Specifically:

- The proposed action would not result in a change in the types or quantity of radioactive materials in effluents, wastes, and products of the facility. Therefore, there is no impact on occupational or public radiation exposure and the proposed action would not result in changes to radiological human health previously assessed in NUREG-2263.
- The proposed action would not result in new land disturbance or in changes to land use and visual resources from what was previously assessed in NUREG-2263.
- The proposed action would not result in changes to the types or quantity of non-radiological waste and effluents previously assessed in NUREG-2263 and the proposed action would not result in changes to nonradiological human health previously assessed in NUREG-2263.
- The proposed action would not result in changes to ecological resources previously assessed in NUREG-2263.
- The proposed action would not result in changes to hydrogeology or water resources previously assessed in NUREG-2263.
- The proposed action would not result in changes to air quality or noise previously assessed in NUREG-2263.
- The proposed action would not result in changes to historic or cultural resources previously assessed in NUREG-2263.
- The proposed action would not result in changes to socioeconomic conditions previously assessed in NUREG-2263.
- The proposed action would not have a significant adverse effect on the probability of an accident occurring.

Environmental Impacts of the Alternatives to the Proposed Action

As an alternative to the proposed action, the NRC staff considered denial of the proposed action (i.e., the “no-action” alternative). Denial of the amendment request

would result in the licensee being unable to complete construction and begin operation of the Hermes test reactor facility. However, because the remaining construction, operating, and decommissioning impacts would generally be small as evaluated in NUREG-2263, the environmental impacts of the proposed action and the alternative action are similar.

Alternative Use of Resources

There are no unresolved conflicts concerning alternative uses of available resources under the proposed action. The proposed action does not involve the use of any resources not previously considered in NUREG-2263.

Agencies and Persons Consulted

No additional agencies or persons were consulted regarding the environmental impact of the proposed action. The NRC staff determined that the proposed action would have no effect on Federally listed threatened or endangered species or critical habitat that could occur on or near the Hermes test reactor facility site and would have no effect on any historic properties. Therefore, consultation was not required under section 7 of the Endangered Species Act of 1973, as amended, or under section 106 of the National Historic Preservation Act of 1966, as amended. On April 14, 2026, the NRC notified the Tennessee Division of Radiological Health representative of the EA and FONSI.

III. Finding of No Significant Impact

The proposed action is the issuance of an amendment to Kairos Construction Permit No. CPTR-6 to extend the latest date for completion of the construction of the Hermes test reactor facility from December 31, 2026, to April 30, 2029. Consistent with 10 CFR 51.21, the NRC prepared an EA to determine the impacts of the proposed action. On the basis of the EA included in section II of this document and incorporated by reference in this finding, the NRC concludes that the proposed action would not have a significant adverse effect on the probability of an accident occurring and would not have any significant radiological or non-radiological impacts. Therefore, the NRC concludes that the proposed action will not have a significant effect on the quality of the

human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action, in accordance with 10 CFR 51.31(a).

Other than the application dated March 24, 2026, the related environmental document is NUREG-2263, "Environmental Impact Statement for the Construction Permit for the Kairos Hermes Test Reactor Final Report," which provides the latest environmental review of the construction, operation, and decommissioning of the Hermes test reactor facility and description of the environmental conditions at the facility site.

This EA and FONSI and other related documents are accessible online in the ADAMS Public Documents collection at <https://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC's PDR reference staff at 1-800-397-4209 or 301-415-4737, or by email to PDR.Resource@nrc.gov.

IV. Availability of Documents

The documents identified in the following table are available to interested persons through ADAMS, as indicated.

DOCUMENT	ADAMS ACCESSION NO.
NUREG-2263, "Environmental Impact Statement for the Construction Permit for the Kairos Hermes Test Reactor Final Report," dated August 2023	ML23214A269
Construction Permit No. CPTR-6 for the Hermes 1 Test Reactor Facility, dated December 14, 2023	ML23338A258
Kairos Power LLC Hermes Test Reactor Construction Permit CPTR-6 Amendment Request, dated March 24, 2026	ML26083A275 (Package)

Authority: 42 U.S.C. 2011 *et seq.*

Dated: April 16, 2026.

For the Nuclear Regulatory Commission.

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