



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

Tami Dozier
Environmental Project Manager
Division of Rulemaking
Environmental, and Financial Support
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

RE: EPA Comments on the Draft Environmental Impact Statement for the
Construction Permit for the Kairos Hermes Test Reactor, Oak Ridge, Tennessee
Docket ID NRC-2021-0193; CEQ #20220140

Dear Tami Dozier:

The U.S. Environmental Protection Agency has reviewed the U.S Nuclear Regulatory Commission's (NRC) Draft Environmental Impact Statement (DEIS) in accordance with Section 309 of the Clean Air Act (CAA) and Section 102(2)(C) of the National Environmental Policy Act (NEPA). The CAA Section 309 role is unique to EPA. It requires EPA to review and comment publicly on any proposed federal action subject to NEPA's environmental impact statement requirement.

The DEIS was prepared in response to an application submitted by Kairos Power, LLC (Kairos) for a construction permit (CP) for a non-power test reactor termed Hermes at a site in Oak Ridge, Tennessee. Kairos plans to build and operate Hermes to demonstrate key elements of the Kairos Power Fluoride Salt-Cooled, High Temperature Reactor technology for possible future commercial deployment. The NRC proposes to issue a CP to Kairos to construct the proposed Hermes non-power test reactor facilities on a site in the East Tennessee Technology Park.

The DEIS considered three alternatives: the No Action alternative and two site location alternatives. Under the No Action alternative, the NRC would not issue a construction permit to Kairos to build a test reactor to demonstrate the new technology. The alternative selection process involved consideration of multiple sites, leading to two alternative site locations: (1) the proposed site located in the East Tennessee Technology Park in Oak Ridge, Tennessee; and (2) an alternative site in Eagle Rock, Idaho. The proposed site is situated in the Heritage Center Industrial Park of the East Tennessee Technology Park, an industrial park established by the City of Oak Ridge, on land formerly owned by the U.S. Department of Energy.

Based on our review of the DEIS, we have enclosed technical comments and recommendations regarding water resources and environmental justice for your consideration (See Enclosure). We request that the technical comments provided in this letter be addressed in the Final EIS.

The EPA appreciates the opportunity to review the DEIS. If you have any questions regarding our comments, please contact Mr. Larry Long of the NEPA Section at (404) 562-9460, or by e-mail at long.larry@epa.gov.

Sincerely,

Ntale Kajumba
Acting Director
Strategic Programs Office

Enclosure: Technical Comments

ENCLOSURE

EPA Technical Comments on the Draft Environmental Impact Statement
for the Construction Permit for the Kairos Hermes Test Reactor, Oakridge, Tennessee
CEQ No: 20220140

- (1) **Water Resources:** Sections 2.5, 2.6 and 2.8 of the Draft Environmental Impact Statement (DEIS) appear to include inconsistent information regarding the use of municipal water sources. Section 2.5 *Water Consumption and Treatment* (Page 2-3) states that the water demand during construction, operation and decommission would be met with municipal water sources or truck-delivered, and that wastewater would be disposed of in municipal sewers. The section specifies (with reference to Figure 2.4-1, which is part of the 2021 Environmental Report and is not available in the DEIS) 50 gallons per minute (GPM) of municipal water. This section also states that the operation would not involve *any* intake or discharge pipelines. Section 2.6 *Cooling and Heat Removal* (Page 2-3) states that there would be no cooling water system. Section 2.8 *Storage, Treatment and Transportation of Radioactive and Non-Radioactive Materials* (Page 2-4) states that Tri-structural Iso-tropic (TRISO) fuel pebbles would be stored onsite in a water-cooled storage pool.

Recommendation: The Final EIS should provide more clarity on Sections 2.5, 2.6 and 2.8 of the report that appear to be inconsistent with each other. If the proposed project will use municipal water facilities, then the report should identify those facilities and the water sources. The NRC should clarify how the Hermes facility would meet this requirement without the necessary infrastructure to convey both water and wastewater. The Final EIS should also address what the 50 GPM would be used for in more detail, since Section 2.8 states that there would be no cooling water system while also stating that TRISO fuel pebbles would be stored onsite in a water-cooled storage pool. Finally, Figure 2.4-1 from the 2021 Environmental Report should also be provided in the body of the Final EIS report or in the Appendix.

- (2) **Community Involvement:** According to the DEIS, the NRC conducted a virtual joint public outreach and scoping meeting on March 23, 2022. However, the DEIS does not include any details about the meeting, and it does not discuss any additional outreach to the surrounding communities.

Recommendation: The EPA recommends that the NRC discuss in the Final EIS how the NRC meaningfully involved the local communities throughout the NEPA process to help identify potential benefits and burdens associated with construction, licensing and permitting decisions. We recommend the discussion include any adaptive and innovative approaches to both public outreach and community involvement regarding project issues that were implemented during the project planning phase.