



NRC NEWS

Office of Public Affairs, Headquarters

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No: 23-034
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June 15, 2023

NRC Completes Safety Review of Construction Permit Application For Kairos Test Reactor in Tennessee

The Nuclear Regulatory Commission staff has completed its [final safety evaluation](#) for Kairos Power's application to build an advanced test reactor known as Hermes at a site in Oak Ridge, Tennessee. The evaluation concludes there are no safety aspects that would preclude issuing the construction permit for the proposed reactor.

"The staff thoroughly reviewed this first-of-a-kind advanced reactor in 18 months, well ahead of schedule," said Andrea Veil, director of the NRC's Office of Nuclear Reactor Regulation. "This reflects the NRC's commitment to maintaining safety, by applying risk-informed approaches, while improving efficiency."

The staff will provide the safety evaluation and the final environmental impact statement, which is on track to be completed in September, to the Commission for the mandatory hearing phase of the licensing process. During the mandatory hearing, expected later this year, the Commission will examine whether the staff's review supports the findings necessary to issue the permit. Following the hearing, the Commission will vote on whether to authorize the staff to issue the permit.

Kairos submitted its permit application in two parts, in September and October 2021, seeking to build the non-power reactor, which uses tri-structural isotropic particle fuel and molten salt to cool the reactor core. The test reactor is intended to provide operational data to support the development of a larger version for commercial deployment. The company will have to submit a separate application in the future for an operating license for Hermes. More information on the [construction permit review](#) is available on the NRC website.

The NRC's Advisory Committee on Reactor Safeguards independently reviewed safety-related aspects of the Kairos application. The committee provided the [results of its review](#) to the Commission on May 16, 2023.