

From: AUSTGEN, Kati <kra@nei.org>
Sent: Tuesday, April 19, 2022 4:02 PM
To: KairosHermes-CPEIS Resource
Cc: Dozier, Tami; Doub, Peyton; Beasley, Benjamin; Cuadrado de Jesus, Samuel
Subject: [External_Sender] NEI Comments Regarding the Scope of the Environmental Review for the Kairos Power Hermes Non-Power Test Reactor Construction Permit Application [Docket ID: NRC-2021-0193]
Attachments: 04-19-2022_NEI Comments Regarding the Scope of the Environmental Review for the Kairos Power Hermes Non-Power Test Reactor Construction Permit Application.pdf

THE ATTACHMENT CONTAINS THE COMPLETE CONTENTS OF THE LETTER

April 19, 2022

NRC Office of Administration
Mail Stop TWFN-7-A60M
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
ATTN: Program Management, Announcements, and Editing Staff

Submitted via KairosHermes-CPEIS@nrc.gov

Subject: NEI Comments Regarding the Scope of the Environmental Review for the Kairos Power Hermes Non-Power Test Reactor Construction Permit Application [Docket ID: NRC-2021-0193]

Project Number: 689

The Nuclear Energy Institute (NEI)^[1] appreciates the opportunity to provide comments as part of the scoping process for the NRC's environmental review of Kairos Power's construction permit application for the Hermes advanced non-power test reactor to be built in Oak Ridge, Tennessee. We support the NRC's efforts to meet its obligations under the National Environmental Policy Act (NEPA) to consider any potentially significant environmental impacts of proposed licensing actions and inform the public about the agency's environmental decision making. We also look forward to future opportunities for public participation in the NRC's NEPA review process for this project, including the NRC's development of its draft environmental impact statement.

^[1] The Nuclear Energy Institute (NEI) is responsible for establishing unified policy on behalf of its members relating to matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include entities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect and engineering firms, fuel cycle facilities, nuclear materials licensees, and other organizations involved in the nuclear energy industry.

With regard to the scoping of this environmental review, we urge the NRC to consider the widely recognized environmental benefits of nuclear energy. In addition to not producing carbon emissions, nuclear power plants do not emit other harmful air pollutants that contribute to heart disease, neurological disease, lung cancer and respiratory diseases. Due to nuclear power's high energy density, reactors have relatively small geographic footprints that lessen land use impacts. For these reasons, nuclear power avoids adverse climate change, air quality, and other environmental impacts that have been shown to disproportionately affect vulnerable communities. We recognize that the Hermes non-power test reactor will not supply electricity to the grid. However, the construction and operation of the proposed test facility is necessary to demonstrate the key technologies of the Kairos Power Fluoride Salt-Cooled, High Temperature Reactor (KP-FHR) for future commercial deployment.

Moreover, in defining the purpose and need for the proposed facility for purposes of its NEPA review, the NRC should acknowledge the significant national and legislative policy considerations undergirding this project.^[2] As discussed in Section 1.3 of Kairos' Environmental Report, the Hermes project was selected for an award under the Department of Energy's (DOE) new Advanced Reactor Demonstration Program (ARDP) associated with Risk Reduction for Future Demonstration projects. Therefore, "the need for the project is also tied directly to the DOE's objective under ARDP to assist private industries in the United States to demonstrate advanced nuclear reactors, with a goal of designing and developing safe and affordable reactor technologies that can be licensed and deployed over the next 10 to 14 years." Section 9005 of the Energy Act of 2020 formally authorized the ARDP, the primary purpose of which is to demonstrate a variety of advanced nuclear reactor technologies, including those that could be used to produce safer, emissions-free power at a competitive cost of electricity compared to other new energy generation technologies; heat for community heating, industrial purposes, heat storage, or synthetic fuel production; remote or off-grid energy supply; or backup or mission-critical power supplies.^[3] As DOE's Dr. Kathryn Huff noted last year, these are critical U.S. Government objectives:

The Administration believes that we must prioritize activities that preserve the existing fleet of nuclear reactors, deploy advanced reactor technologies, and expand nuclear energy to markets beyond electricity if we intend to meet our ambitious carbon reduction goals. Nuclear can play a role in the transition to a clean energy economy by fundamentally enabling our nation's targets for clean, carbon-free electricity as well as non-electric energy markets. We have the potential to decarbonize many industrial sectors in the United States and abroad.^[4]

^[2] *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991) (citing *City of New York v. Dep't of Transp.*, 715 F.2d 732, 743-45 (2d Cir. 1983)) (noting that "an agency should always consider the views of Congress, expressed, to the extent that the agency can determine them, in the agency's statutory authorization to act, as well as in other congressional directives").

^[3] 42 U.S.C. § 16279a(b)(1)(A)-(D)

^[4] DOE, Office of Nuclear Energy, "Q&A: Acting Assistant Secretary Dr. Kathryn Huff Shares Her Vision for the Future of Nuclear Energy" (June 24, 2021), <https://www.energy.gov/ne/articles/qa-acting-assistant-secretary-dr-kathryn-huff-shares-her-vision-future-nuclear-energy>.

Katherine R. Austgen
Senior Project Manager,
New Reactors

Nuclear Energy Institute
1201 F St NW, Suite 1100
Washington, DC 20004
www.nei.org

P: 202.739.8068
M: 202.340.1224
E: kra@nei.org



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Recipients:

"Dozier, Tami" <Tamsen.Dozier@nrc.gov>

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"Doub, Peyton" <Peyton.Doub@nrc.gov>

Tracking Status: None

"Beasley, Benjamin" <Benjamin.Beasley@nrc.gov>

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"Cuadrado de Jesus, Samuel" <Samuel.CuadradoDeJesus@nrc.gov>

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"KairosHermes-CPEIS Resource" <KairosHermes-CPEIS.Resource@nrc.gov>

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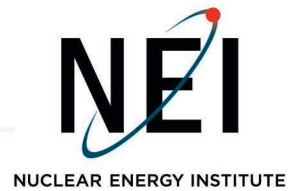
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KATI R. AUSTGEN
Senior Project Manager, New Reactors

1201 F Street, NW, Suite 1100
Washington, DC 20004
P: 202.739.8068
kra@nei.org
nei.org



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the grid. However, the construction and operation of the proposed test facility is necessary to demonstrate the key technologies of the Kairos Power Fluoride Salt-Cooled, High Temperature Reactor (KP-FHR) for future commercial deployment.

Moreover, in defining the purpose and need for the proposed facility for purposes of its NEPA review, the NRC should acknowledge the significant national and legislative policy considerations undergirding this project.² As discussed in Section 1.3 of Kairos' Environmental Report, the Hermes project was selected for an award under the Department of Energy's (DOE) new Advanced Reactor Demonstration Program (ARDP) associated with Risk Reduction for Future Demonstration projects. Therefore, "the need for the project is also tied directly to the DOE's objective under ARDP to assist private industries in the United States to demonstrate advanced nuclear reactors, with a goal of designing and developing safe and affordable reactor technologies that can be licensed and deployed over the next 10 to 14 years." Section 9005 of the Energy Act of 2020 formally authorized the ARDP, the primary purpose of which is to demonstrate a variety of advanced nuclear reactor technologies, including those that could be used to produce safer, emissions-free power at a competitive cost of electricity compared to other new energy generation technologies; heat for community heating, industrial purposes, heat storage, or synthetic fuel production; remote or off-grid energy supply; or backup or mission-critical power supplies.³ As DOE's Dr. Kathryn Huff noted last year, these are critical U.S. Government objectives:

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The scoping of this environmental review also should include recognition of the positive economic impact of bringing innovative technology research facilities to a community and the exemplary safety record of nuclear energy. Conversely, issues outside the scope of this specific regulatory decision should not be considered. The applicant has taken the time to analyze available sites and resources; thus, the scope of the NRC environmental review should consider what is realistic and within the agency's jurisdiction. As both the Commission and the federal courts have held, when the proposed action subject to NEPA review is triggered by a proposal or application from a private party, the agency should give "substantial weight" to the goals

² *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991) (citing *City of New York v. Dep't of Transp.*, 715 F.2d 732, 743-45 (2d Cir. 1983)) (noting that "an agency should always consider the views of Congress, expressed, to the extent that the agency can determine them, in the agency's statutory authorization to act, as well as in other congressional directives").

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and objectives of that private entity. Thus, in such cases, for a project alternative to be “reasonable,” it should meet the goals of the private applicant.⁵

We further encourage the NRC to consider the efficiency of the environmental review during this scoping process. Council on Environmental Quality (CEQ) guidelines recommend federal agency staff use the applicant’s environmental report (ER) as the basis for the draft environmental assessment (EA) or environmental impact statement (EIS), and further allow that the federal agency may use the applicant’s ER as the draft EA or EIS.⁶ NRC should maximize the use of existing evaluations and the inherent attributes of the Kairos Hermes design, and the NRC’s own regulatory process, to avoid duplication of effort in the environmental review process. Identifying how NRC will achieve such efficiencies during the scoping process will provide regulatory clarity for all stakeholders, many of whom have voiced strong support for this project.

Finally, we recognize the NRC staff’s ongoing efforts to develop the advanced nuclear reactor generic environmental impact statement (ANR GEIS). While the rulemaking for the ANR GEIS is still in progress, the NRC staff should leverage the supporting technical analyses already completed in that effort (see, e.g., [draft NUREG-2249](#)) to address those areas of the Kairos Hermes application that are bounded. This will create substantial efficiencies in addressing at least 80% of the scope of the environmental review.

In summary, the scoping of the environmental review pertaining to Kairos Power’s construction permit application for the Hermes test reactor to be built in Oak Ridge, Tennessee offers the opportunity for NRC staff to implement tangible improvements to the efficiency and timeliness of NRC environmental reviews for new reactor applications.

If you have questions concerning this letter, please contact me at kra@nei.org or 202.739.8068.

Sincerely,



Katherine R. Austgen

c: Tamsen Dozier, NRC/NMSS/REFS/ERNRB
Peyton Doub, NRC/NMSS/REFS/ERNRB
Benjamin Beasley, NRC/NRR/DANU/UAL1
Samuel Cuadrado de Jesus, NRC/NRR/DANU/UAL1

⁵ *Pa’ina Hawaii, LLC* (Materials License Application), CLI-10-18, 72 NRC 56, 77 (2010) (“The applicant’s stated purpose defines the correlating range of alternatives that should be considered: while different from the specific proposal, the alternatives that should be considered must still accomplish the underlying purpose of the proposed action.”); *Citizens Against Burlington*, 938 F.2d at 195 (“When the purpose is to accomplish one thing, it makes no sense to consider the alternative ways by which another thing might be achieved.”).

⁶ See Section 4.4 of NEI White Paper, *Recommendations for Streamlining Environmental Reviews for Advanced Reactors*, (ADAMS Accession No. ML20065N155)