

July 26, 2024

Docket No.: 99902094  
U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555-0001

Subject: Written communication as specified by 10 CFR 50.4 regarding the University of Illinois at Urbana-Champaign – Safety Evaluation for Topical Report titled “High-Temperature Gas-cooled Research Reactor: Applicability of Nuclear Regulatory Commission Regulations,” Release 4 (EPID L-2022-NFN-0008), dated July 25, 2024

By letter dated December 9, 2022 (ML22343A283), the University of Illinois Urbana-Champaign (UIUC) submitted the Topical Report (TR), “University of Illinois Urbana-Champaign High Temperature Gas-cooled Research Reactor: Applicability of Nuclear Regulatory Commission Regulations” (ML22343A284) to the U.S. Nuclear Regulatory Commission (NRC) for acceptance review and generation of a review schedule. A 12 month review for the TR was requested and approval of the methodology used and determinations of applicability/non-applicability of specific regulations identified in the TR as the licensing basis for the UIUC research reactor. NRC approval of the process for treatment of exemptions was also requested; approval for needed exemptions will be requested as part of the application submittal process.

By email dated February 9, 2023 (ML23020A294), the NRC provided UIUC the completeness determination for the TR. Based on a preliminary review of the TR, the NRC staff determined that it provided sufficient information for the NRC staff to begin a detailed technical review.

On May 31, 2023, the NRC provided UIUC a list of discussion items regarding the TR titled: ‘UIUC Topical Report: “Applicability of Nuclear Regulatory Commission Regulations” Discussion Topics’ (ML23151A544).

On June 8, 2023, a public meeting was held between NRC and UIUC project staff to discuss the items that were listed in the document titled ‘UIUC Topical Report: “Applicability of Nuclear Regulatory Commission Regulations” Discussion Topics.’ Based on discussions during that meeting, UIUC agreed to provide the NRC with a new revision of the TR to address the NRC staff’s questions.

By letter dated August 30, 2023 (ML23242A330), UIUC submitted the revised version (Release 02) of the “University of Illinois Urbana-Champaign High Temperature Gas-cooled Research Reactor: Applicability of Nuclear Regulatory Commission Regulations” TR (ML23242A331).

By email dated October 18, 2023, the NRC staff requested additional information and clarification regarding Release 02 of the TR in the form of six (6) request for additional information (RAI) (ML23291A332).

By letter dated December 11, 2023 (ML23345A237), UIUC provided responses to the RAIs (ML23345A238).

On January 24, 2024 (ML24012A035), a public meeting was held between NRC and UIUC project staff to discuss the RAI responses as well as additional discussion topics as presented by the NRC staff during the meeting (ML24031A628). On February 7, 2024, a summary of the January 24, 2024 (ML24031A627), public meeting was posted on the NRC Agencywide Documents Access and Management System (ADAMS).

By letter dated February 29, 2024 (ML24064A012), UIUC submitted revised University of Illinois TR, “University of Illinois Urbana-Champaign High Temperature Gas-cooled Research Reactor: Applicability of Nuclear Regulatory Commission Regulations,” Release 03, dated February 16, 2024 (ML24064A044), based on the RAI responses and discussion topics during the January 24, 2024, public meeting.

By letter dated March 15, 2024 (ML24094A299), UIUC submitted revised University of Illinois TR, “University of Illinois Urbana-Champaign High Temperature Gas-cooled Research Reactor: Applicability of Nuclear Regulatory Commission Regulations,” Release 04, dated March 15, 2024 (ML24094A298), based on further discussions with the NRC staff regarding the public meeting topics.

By letter dated July 25, 2024 (ML24165A000), the NRC staff concluded that the “University of Illinois Urbana-Champaign High Temperature Gas-cooled Research Reactor: Applicability of Nuclear Regulatory Commission Regulations” TR, Release 04, was acceptable. The NRC staff’s final safety evaluation (SE) for the TR was also attached.

Enclosed is the accepted version of the TR. In addition, the TR incorporates, after the title page, the July 25, 2024, NRC letter and SE (ML24165A000), the October 18, 2023, NRC RAIs (ML23291A332) and the December 11, 2023, UIUC responses to the RAIs (ML23345A237).

The TR does not contain any commercially sensitive information and can be posted for unrestricted access by the public. Questions or other requests related to the TR should be directed to Caleb Brooks at [csbrooks@illinois.edu](mailto:csbrooks@illinois.edu) or (217) 265-0519.

I declare under penalty of perjury that the foregoing is true and correct. Executed on July 26, 2024.

Sincerely,



Caleb S. Brooks, Ph.D.  
Associate Professor  
University of Illinois at Urbana-Champaign  
Department of Nuclear, Plasma, and Radiological Engineering  
Talbot Laboratory, Room 111C, MC-234  
104 South Wright St, Urbana, IL 61801  
TEL 217-265-0519 | FAX 217-333-2906  
[csbrooks@illinois.edu](mailto:csbrooks@illinois.edu)

Enclosure:

1. “University of Illinois Urbana-Champaign High Temperature Gas-cooled Research Reactor: Applicability of Nuclear Regulatory Commission Regulations,” Release 04, dated March 15, 2024, approved by the NRC on July 25, 2024

Cc:

University of Illinois Urbana-Champaign

Tim Grunloh

Les Foyto

Ultra Safe Nuclear Corporation

Michael Hamer

Paul Eric Marko

U.S. Nuclear Regulatory Commission

Edward Helvenston

Paulette Torres

Patrick Boyle

