



July 30, 2024

Docket No. 50-610

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Abilene Christian University Construction Permit Application
Preliminary Safety Analysis Report Revision 2

Abilene Christian University submitted a construction permit application for the Molten Salt Research Reactor on August 12, 2022 (ADAMS No. ML22227A201). Since acceptance of the application for review, ACU has been engaged with Nuclear Regulatory Commission (NRC) staff responding to questions posed during regulatory audits. In the audit questions and in audit meetings, NRC staff has identified information that is needed on the MSRR docket to support the staff's safety evaluation. ACU is submitting Revision 2 of the Preliminary Safety Analysis Report to provide the needed information. Because the Preliminary Safety Analysis Report reflects a preliminary design, the figures of the Report have not been updated as the design matures. This may create discrepancies between the text and the figures of the Report. If there is a discrepancy, the text is authoritative because the figures are not being updated to maintain currency. Final design information with associated figures will be provided with the operating license application.

In the Request for Confirmation of Information dated May 30, 2024, the NRC asked ACU to confirm for the Fuel Handling System, that "all butt-welded joints will be fully radiographed consistent with UW-51." Because UW-51 is part of ASME Section VIII, ACU responded that piping will be examined in accordance with B31.3, Category M. ACU hereby confirms that all butt-welded joints in piping will be fully radiographed.

Complete construction of the MSRR is expected March 31, 2026 at the earliest and December 31, 2029 at the latest.

In response to Request for Additional Information 1, ACU submitted proprietary information to the NRC on March 28, 2024 (ML24094A332). The proprietary information included preliminary service conditions for primary MSRR components, the safety classification and ASME Code assignments for the components, and the function, type, and service conditions of safety related valves. Redacted versions of that information is provided in Enclosures 2 and 3. If there are further questions, please contact a licensing manager at Benjamin.Beasley@acu.edu or Lester.Towell@acu.edu.

I declare under penalty of perjury that the information is true and correct.
Executed on July 30, 2024.



Rusty Towell

Rusty Towell, PhD
Director of NEXT Lab

Enclosures:

1. Abilene Christian University Molten Salt Research Reactor Preliminary Safety Analysis Report, Revision 2, July 2024 (non-proprietary)
2. MSRR Codes and Service Conditions Redacted (non-proprietary)
3. Safety Related Valve Requirements Redacted (non-proprietary)

Cc: Richard Rivera, Project Manager, NRR Advanced Reactor Licensing Branch 2
Edward Helvenston, Project Manager, NRR Non-Power Production and Utilization Facility Licensing Branch
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