

From: Edward Helvenston
Sent: Friday, April 5, 2024 11:32 AM
To: Rusty Towell
Cc: Lester Towell; Benjamin Beasley; Michael Wentzel; Richard Rivera; Brian Bettes; Michael Balazik; Greg Oberson (He/Him); Ian Tseng; Luisette Candelario-Quintana; Zuhan Xi; Dong Park
Subject: Requests for Confirmation of Information Related to the ACU MSRR Construction Permit Application
Attachments: Geotech RCIs related to Audit Question 2.5-9.pdf

Dear Dr. Towell:

By letter dated August 12, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22227A201), as supplemented, Abilene Christian University (ACU) submitted a construction permit application for its proposed Molten Salt Research Reactor (MSRR) for U.S. Nuclear Regulatory Commission (NRC) staff review.

The NRC staff identified additional information needed to continue its review of the application, as described in the enclosed request for confirmation of information (RCI). Please provide a response to the RCI (confirming the information in the RCI or providing additional explanation or information, if necessary) or a written request for additional time to respond, including the proposed response date and a brief explanation of the reason, by May 6, 2024. Follow receipt of the complete response to the RCI, the NRC staff will continue its review.

If you have any questions regarding the NRC staff's review or if you intend to request additional time to respond, please contact me at (301) 415-4067 or by email at Edward.Helvenston@nrc.gov, or contact Richard Rivera at (301) 415-7190 or Richard.Rivera@nrc.gov.

Sincerely,

Ed Helvenston, U.S. NRC

Non-Power Production and Utilization Facility Licensing Branch (UNPL)
Division of Advanced Reactors and Non-Power Production and Utilization Facilities (DANU)
Office of Nuclear Reactor Regulation (NRR)
(301) 415-4067

Docket No. 05000610
EPID: L-2022-NFW-0002
Enclosure: As stated
cc: GovDelivery Subscribers

Concurrence on RCI

OFFICE	NRR/DANU/UAL2/BC	NRR/DANU/UNPL/PM
NAME	MWentzel	EHelvenston
DATE	4/4/2024	4/5/2024

Hearing Identifier: NRR_DRMA
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Subject: Requests for Confirmation of Information Related to the ACU MSRR
Construction Permit Application
Sent Date: 4/5/2024 11:32:21 AM
Received Date: 4/5/2024 11:32:00 AM
From: Edward Helvenston

Created By: Edward.Helvenston@nrc.gov

Recipients:

"Lester Towell" <ldt20a@acu.edu>
Tracking Status: None
"Benjamin Beasley" <bgb23b@acu.edu>
Tracking Status: None
"Michael Wentzel" <Michael.Wentzel@nrc.gov>
Tracking Status: None
"Richard Rivera" <richard.rivera@nrc.gov>
Tracking Status: None
"Brian Bettes" <Brian.Bettes@nrc.gov>
Tracking Status: None
"Michael Balazik" <Michael.Balazik@nrc.gov>
Tracking Status: None
"Greg Oberson (He/Him)" <Greg.Oberson@nrc.gov>
Tracking Status: None
"Ian Tseng" <Ian.Tseng@nrc.gov>
Tracking Status: None
"Luisette Candelario-Quintana" <luisette.candelario-quintana@nrc.gov>
Tracking Status: None
"Zuhan Xi" <Zuhan.Xi@nrc.gov>
Tracking Status: None
"Dong Park" <Dong.Park@nrc.gov>
Tracking Status: None
"Rusty Towell" <rxt01a@acu.edu>
Tracking Status: None

Post Office: BY5PR09MB5956.namprd09.prod.outlook.com

Files	Size	Date & Time
MESSAGE	1752	4/5/2024 11:32:00 AM
Geotech RCIs related to Audit Question 2.5-9.pdf		117928

Options

Priority: Normal
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:

OFFICE OF NUCLEAR REACTOR REGULATION
REQUEST FOR CONFIRMATION OF INFORMATION
MOLTEN SALT RESEARCH REACTOR
CONSTRUCTION PERMIT APPLICATION
ABILENE CHRISTIAN UNIVERSITY
DOCKET NO. 50-610

RCI 2.5-1 (Related to Audit Question 2.5-9A)

The regulation 10 CFR 50.34(a)(1)(i) requires, in part, that a PSAR include a “description and safety assessment of the site on which the facility is to be located, with appropriate attention to features affecting the facility design.”

On April 11, 2023, in response to Audit Question 2.5-2 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML23086A017) and others provided by the NRC staff as part of the ACU PSAR Chapter 2 and 3 Audit (ML23065A048), ACU provided its “Geotechnical Investigation Report” for the MSRR for NRC staff audit. Part 1.2 of the geotechnical investigation report indicates that the “report is provided for general information only” and that the “owner or architect neither guarantee nor accept any responsibility for soil investigation data.”

Please confirm that, consistent with information ACU provided for audit on November 30, 2023, in response to Audit Question 2.5-9 (ML23283A017):

- The quoted statements above from Part 1.2 of the Geotechnical Investigation Report are standard language in Parkhill specifications that acknowledge the geotechnical report is providing a representative sample of existing soil conditions only in the areas investigated and does not account for all conditions at the site. This acknowledges the fact that not every location of Science and Engineering Research Center (SERC) foundations/footings has been investigated or documented.
- Parkhill affirms that the boring data documented in the geotechnical report is verified and reliable for the areas investigated.

RCI 2.5-2 (Related to Audit Question 2.5-9B)

The regulation 10 CFR 50.34(a)(1)(i) requires, in part, that a PSAR include a “description and safety assessment of the site on which the facility is to be located, with appropriate attention to features affecting the facility design.”

The regulation 10 CFR 50.34(a)(7) requires that a PSAR include a “description of the quality assurance program to be applied to the design, fabrication, construction, and testing of the structures, systems, and components of the facility.”

- a) Regarding the geotechnical investigation performed to demonstrate the suitability of the SERC site and to inform the design and construction of portions of the ACU SERC building that will become safety-related structures, systems, and components (SSCs) for

the Molten Salt Research Reactor (MSRR), confirm that, consistent with information ACU provided for audit on November 30, 2023, and March 1, 2024, in response to Audit Questions 2.5-9 (ML23283A017) and 3-6 (ML23335A117), respectively; and discussions during an audit meeting on March 14, 2024:

- The firm that performed the geotechnical investigation for the SERC site, eHT, applied a quality assurance/quality control (QA/QC) program for the investigation and characterization of the site.
- eHT had a registered geotechnical engineer (professional engineer) onsite during the investigation to provide quality control, and the engineer observed the sampling methods.
- The sampling methods followed were in accordance with the following referenced standards:
 - ASTM-D1587/D1587M-15, “Standard Practice for Thin-Walled Tube Sampling of Soils for Geotechnical Purposes”
 - ASTM-D1586/D1586M-18e1, “Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils”
 - TEX-132-E, “Texas Cone Penetration,” effective date August 1999
 - ASTM-D2488-17e1, “Standard Practice for Description of Identification of Soils (Visual-Manual Procedures)”
- The registered geotechnical engineer also prepared the samples for transport to the soil testing laboratory and assigned the appropriate laboratory soil classification tests.
- As part of the eHT QA/QC program, a peer review of the geotechnical engineer’s report was conducted by another qualified geotechnical engineer. This person was an EHT principal and another professional engineer who was not closely involved with the ACU project, but who has local knowledge in the areas of soil mechanics and foundations. A QC checklist was followed for this review to ensure that each of the required items was reviewed.
- As part of eHT’s practices for conducting geotechnical investigations, any observations or results that are “out of the ordinary” are addressed and resolved before moving forward. For example, if laboratory analyses show inconsistent or unexpected results, they re-check samples to evaluate for possible errors. For the ACU project specifically, eHT used more borings than necessary to improve the quantity of data available for cross-checking results. Periodic meetings are also held at eHT to share lessons-learned on projects.

b) Please confirm that, consistent with information in the “Geotechnical Investigation Report” provided for audit on April 11, 2023, and discussions during an audit meeting on March 14, 2024:

- Laboratory testing of samples was conducted in general accordance with ASTM procedures and standards including:
 - ASTM-D4318-17e1, “Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils”
 - ASTM-D1140-17, “Standard Test Methods for Determining the Amount of Material Finer than 75- μ m (No. 200) Sieve in Soils by Washing”