



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 6, 2025

Dr. Alan Cebula
Nuclear Reactor Facility Manager
Kansas State University
112 Ward Hall
Manhattan, KS 66506-5204

SUBJECT: KANSAS STATE UNIVERSITY – U.S. NUCLEAR REGULATORY COMMISSION
SAFETY INSPECTION REPORT NO. 05000188/2025201

Dear Dr. Cebula:

From March 25-27, 2025, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an inspection at the Kansas State Nuclear Reactor Facility. The enclosed report presents the results of that inspection, which were discussed on March 27, 2025, with you and members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspector reviewed selected procedures and records, observed various activities, and interviewed personnel. Based on the results of this inspection, no findings of significance were identified. No response to this letter is required.

In accordance with Title 10 of the *Code of Federal Regulations* Section 2.390, "Public inspections, exemptions, requests for withholding," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's document system (Agencywide Documents Access and Management System (ADAMS)). ADAMS is accessible from the NRC website at <https://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

If you have any questions concerning this inspection, please contact Juan Arellano at (301) 415-0477, or via email to Juan.Arellano@nrc.gov.

Sincerely,



Signed by Brown, Tony
on 05/06/25

Tony Brown, Chief
Non-Power Production and Utilization Facility
Oversight Branch
Division of Advanced Reactors and Non-Power
Production and Utilization Facilities
Office of Nuclear Reactor Regulation

Docket No. 50-188
License No. R-88

Enclosure:
As stated

cc w/enclosure: GovDelivery Subscribers

SUBJECT: KANSAS STATE UNIVERSITY – U.S. NUCLEAR REGULATORY COMMISSION
SAFETY INSPECTION REPORT NO. 05000188/2025201 DATED: MAY 6, 2025

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**U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION**

Docket No.: 50-188

License No.: R-88

Report No.: 05000188/2025201

Licensee: Kansas State University

Facility: Kansas State Nuclear Reactor Facility

Location: Manhattan, Kansas

Dates: March 25-27, 2025

Inspector: Juan Arellano

Approved by: Tony Brown, Chief
Non-Power Production and Utilization
Facility Oversight Branch
Division of Advanced Reactors and Non-Power
Production and Utilization Facilities
Office of Nuclear Reactor Regulation

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an inspection at Kansas State University (KSU, the licensee's) Class II research reactor facility in accordance with the research and test reactor inspection program. This is the NRC's program for overseeing the safe operation of licensed research and test reactors. Refer to <https://www.nrc.gov/reactors/non-power.html> for more information.

List of Violations

No violations of more than minor significance were identified.

Additional Tracking Items

None.

REPORT DETAILS

Facility Status

The KSU, 1,250-kilowatt Training, Research, Isotopes, General Atomics (TRIGA) Mark II research reactor is used in support of the University's academic program in nuclear engineering laboratory instruction and research. The reactor has not operated since the fourth quarter of 2021 due to a fuel maintenance issue.

Inspection Scopes

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <https://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>.

Inspections were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter 2545, "Research and Test Reactor Inspection Program." The inspector reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

69001 – Class II Non-Power Reactors

This inspection included a review of selected aspects of the research and test reactor, since the last inspection, to verify activities were conducted safely and in accordance with regulatory requirements and licensee commitments.

Procedures (IP Section 02.03)

This inspection included a review of select licensee procedures to verify: administrative controls were in accordance with the technical specifications (TSs), license requirements, and licensee commitments; the procedures in use were current and reviewed and approved, as required; procedures could be implemented as intended; and reactor personnel were observing administrative controls and TS requirements relative to procedural adherence. Specifically, the inspection included a review of the following:

- startup, steady state, and shutdown procedures
- operational limits and special administrative controls logbook
- Reactor Safeguards Committee (RSC) meeting minutes, dated 2023-present

Experiments (IP Section 02.06)

This inspection included a review of select experiments and procedures to verify licensee experiments were reviewed, approved, and conducted in accordance with TS requirements, licensee procedures, and the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.59, "Changes, tests and experiments." However, due to the reactor not being operated, the facility performed zero experiments since the last inspection. Specifically, the inspection included a review of the following:

- select experiment procedures
- KSU TRIGA Mark II reactor facility operations manual
- byproduct log
- experimental facilities

Health Physics (IP Section 02.07)

This inspection included a review of the licensee's health physics program to verify that the provisions of 10 CFR Part 19, "Notices, Instructions and Reports to Workers: Inspection and Investigations," and 10 CFR Part 20, "Standards for Protection against Radiation," TSs, and the licensee's procedural requirements were met. The inspection included a review of: licensee's dose limits; required radiation surveys, sampling, and monitoring; calibration of radiological instruments; the personnel dosimetry program; effluent releases; posting requirements; training requirements; the implementation of as low as is reasonably achievable (ALARA) principles; and the radiation protection program's review and approval requirements. Specifically, the inspection included a review of the following:

- select personnel dosimetry records from 2023-present
- continuous air monitor annual calibration reports performed from 2023 – present
- exhaust plenum monitor annual calibration reports performed from 2023 – present
- area radiation monitors annual calibrations performed from 2023 – present
- pocket dosimeter annual calibrations performed from 2023- present
- survey meter annual calibrations performed from 2023 – present
- monthly contamination surveys and swipes performed from 2023 – present
- semiannual environmental surveys performed from 2023 - present
- liquid effluent discharge records from 2023 - present
- 2023 annual operating report
- 2024 annual operating report
- select radiation training records from 2023 - present

Design Changes (IP Section 02.08)

This inspection included a review of design changes to determine whether they were reviewed, approved, and implemented in accordance with 10 CFR 50.59, the TSs, and the licensee's administrative procedures. The inspector verified that modified equipment would continue to meet regulatory and procedural requirements and licensee commitments. Specifically, the inspection included a review of the following:

- 10 CFR 50.59 screening forms, dated 2023 - present
- 10 CFR 50.59 evaluation forms, dated 2023 - present
- RSC meeting minutes from 2023 – present
- 10 CFR 50.59 procedures

Committees, Audits and Reviews (IP Section 02.09)

This inspection included a review of the licensee's committees, audits and reviews to verify the safety review committee and audits were conducted in accordance with the TSs and that issues identified from reviews were resolved in accordance with TS requirements and the licensee's procedures. Specifically, the inspection included a review of the following:

- RSC meeting minutes from 2023 - present
- fuel cleaner update email chain to the RSC
- reactor operator exemption request email chain to the RSC
- memorandum to the President of the University on new RSC members
- semi-annual audit report of reactor operations and radiation protection program performed from 2023 – present
- KSU TRIGA Mark II reactor facility administrative plan
- appointment of RSC general memorandum

86740 – Inspection of Transportation Activities

This inspection included a review of the licensee's transportation activities to verify they have established and are maintaining an effective management-controlled program, to ensure radiological and nuclear safety in the receipt, packaging, and delivery of licensed radioactive materials. The inspector noted that no radioactive material transportation took place since the last inspection. Specifically, the inspection included a review of the following:

- liquid effluent and solid waste binder
- transportation procedures

Inspection Results

No violations of more than minor significance were identified.

Exit Meeting and Debriefs

The inspector verified no proprietary information was retained or documented in this report.

- On March 27, 2025, the inspector presented the NRC inspection results to members of licensee management and staff.

Documents Reviewed

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
69001.03	Procedure	Number 3	Annual Remote Area Monitor	March 14, 2008
		Number 9	Entrance to the Reactor Bay	March 14, 2008
		Number 12	Instrument Checkout	September 12, 2018
		Number 14	Pocket Dosimeter Calibration	March 14, 2008
		Number 15	Steady State Operation	September 12, 2018
		SOM 1	Operational Limits and Special Administrative Controls	May 2004
		SOM 2	Routine Approval and Communications for Operations	August 13, 2007
		SOM 5	Configuration Management: Equipment Changes	August 2, 2017
69001.06	Manual	N/A	250-KW TRIGA Mark II Pulsing Reactor Mechanical Maintenance and Operating Manual	August 1, 1962
	Experiment	Experiment 1	Isotope Production	June 28, 2013
		Experiment 4	Reactivity Coefficient Determinations	July 11, 1996
		Experiment 6	Control Rod Calibrations	March 11, 2014
69001.07	Health Physics	Radiation Safety Plan	Radiation Protection Program KSU Nuclear Reactor Facility Mechanical and Nuclear Engineering Department Kansas State University	August 23, 2011
69001.08	Design Change	Evaluation	Procedure 30 - Fuel Element Cleaning and Inspection	November 29, 2023
		Screening	Cooling Tower Drain Plugs	May 23, 2024
			New Console Tower Cabinet Move to Control Room	September 19, 2024

			Reactor Bay Roof Replacement	November 19, 2024
			Primary Cooling Loop Pressure Gauges and Instrument Fittings	November 26, 2024
			Secondary Cooling Tower Replacement	December 18, 2024
			Secondary Cooling Valve Actuators Change	March 13, 2025
69001.09	RSC	N/A	Meeting Minutes	May 10, 2023
			Meeting Minutes	July 24, 2023
			Meeting Minutes	November 29, 2023
			Meeting Minutes	December 19, 2023
			Meeting Minutes	September 27, 2024
			Email Poll	November 20, 2024
			Email Poll	December 3, 2024
			Meeting Minutes	March 6, 2025
			Email Poll	March 13, 2025
86740	Procedure	SOR 5	Removal of Materials from the Reactor Bay	January 25, 2011