



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

June 20, 2025

Mr. Robert J. Agasie, Reactor Director  
Nuclear Reactor Laboratory  
University of Wisconsin - Madison  
1513 University Avenue, Room 1215  
Madison, WI 53706-1687

SUBJECT: UNIVERSITY OF WISCONSIN – U.S. NUCLEAR REGULATORY COMMISSION  
ROUTINE INSPECTION REPORT NO. 05000156/2025201

Dear Mr. Agasie:

From May 5-9, 2025, the U.S. Nuclear Regulatory Commission (NRC) staff conducted an inspection at the University of Wisconsin Nuclear Reactor. The inspection results were discussed with you and members of your staff, as well as Dr. Paul Wilson, Chair of the Engineering Physics Department and Reactor Safety Committee Chair on May 9, 2025. The enclosed report documents the inspection results.

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 <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

R. Agasie

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Should you have any questions concerning this inspection, please contact Craig Bassett at 240-535-1842, or via email at [Craig.Bassett@nrc.gov](mailto:Craig.Bassett@nrc.gov).

Sincerely,



Signed by Brown, Tony  
on 06/20/25

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. 50-156  
License No. R-74

Enclosure:  
As stated

cc w/enclosure: GovDelivery Subscribers

SUBJECT: UNIVERSITY OF WISCONSIN – U.S. NUCLEAR REGULATORY COMMISSION  
ROUTINE INSPECTION REPORT NO. 05000156/2025201 DATED: JUNE 20, 2025

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

Docket No.: 50-156

License No.: R-74

Report No.: 05000156/2025201

Licensee: University of Wisconsin

Facility: University of Wisconsin Nuclear Reactor

Location: Madison, WI

Dates: May 5-9, 2025

Inspector: Craig Bassett

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

Enclosure

## **SUMMARY**

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an inspection at the University of Wisconsin 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 University of Wisconsin 1 megawatt TRIGA [Training, Research, Isotopes, General Atomic] conversion reactor is operated as needed in support of laboratory and lecture courses, research and reactor operator training, outreach and community services, and irradiation services. During this inspection, the reactor was operated for training and operator evaluations.

### 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 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.

#### Organization and Staffing (IP Section 02.01)

This inspection included a review of the licensee's organizational changes and shift staffing records to verify compliance with technical specification (TS) requirements and licensee commitments. Specifically, the inspection included a review of the following:

- staffing requirements for reactor operations
- management responsibilities stipulated in the TSs
- various University of Wisconsin Nuclear Reactor (UWNR) operating procedures
- organizational structure of the UWNR facility outlined in the facility TSs
- UWNR annual operating reports for the past two fiscal years

#### Operations Logs and Records (IP 69001, Section 02.02)

This inspection included a review of the licensee's operation logs and records to verify they were maintained and that significant issues were reported and resolved as required by the TSs and the licensee's administrative procedures. Specifically, the inspection included a review of the following:

- various UWNR operating procedures
- selected audits and reviews completed by various groups
- UWNR annual operating reports for the past two fiscal years

- UWNR operators turn-over log maintained on the control room computer
- inspector observed a reactor startup to low power and then the operator proceeded on to full power operation

#### Procedures (IP Section 02.03)

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

- UWNR administrative procedure Number (No.) 005
- annual procedural reviews and updates
- UWNR annual operating reports for the past two fiscal years

#### Requalification Training (IP 69001, Section 02.04)

This inspection included a review of selected documents pertaining to operator requalification training to verify requirements of the licensee's approved requalification plan and Title 10 of the *Code of Federal Regulations* (10 CFR) Part 55, "Operators' Licenses" were met. Specifically, the inspection included a review of the following:

- selected operating records
- active operators' license status
- quarterly operator evaluation sheets
- written examination records for the past 2 years
- selected operator medical examination records
- various training records and forms for selected individuals
- operator requalification program outlined in UWNR Procedure No. 004
- inspector observed as the Reactor Supervisor conducted two quarterly evaluations of licensed reactor operators

#### Surveillance and Limiting Conditions for Operation (IP 69001, Section 02.05)

This inspection included a review of surveillances listed in the TSs to verify requirements were met. Limiting conditions for operation were also reviewed to verify that operating conditions were maintained in accordance with the licensee's procedural requirements. Specifically, the inspection included a review of the following:

- pool leak surveillance program data
- selected surveillance forms and records associated with various UWNR procedures including No. 100, No. 110, No. 122, No. 167, No. 169, No. 170, and No. 173
- UWNR annual operating reports for the past two fiscal years
- operator observed surveillance testing involving scram functions

#### Experiments (IP 69001, Section 02.06)

This inspection included a review of selected experiments and procedures to verify that the licensee's experiments were reviewed, approved, and conducted in accordance with TS requirements, licensee procedures, and the requirements of 10 CFR 50.59, "Changes, tests and experiments." Specifically, the inspection included a review of the following:

- records of recently approved experiments
- control of irradiated items and potential hazards identification
- various UWNR procedures including No. 030, No. 112, No. 130, and No.130PC

#### Design Changes (IP 69001, 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 also verified that modified equipment would continue to meet regulatory and procedural requirements and licensee commitments. Specifically, the inspection included a review of the following:

- Reactor Safety Committee (RSC) meeting minutes
- records of 10 CFR 50.59 screenings and evaluations
- various UWNR Procedures including No. 005, No. 019, and No. 20
- records of changes and/or modifications to the facility, experiments, and procedures
- UWNR annual operating reports for the past two fiscal years

#### Committees, Audits and Reviews (IP 69001, Section 02.09)

This inspection included a review of the licensee's committees, audits and reviews to verify the safety committee audits and independent audits were conducted in accordance with the TS 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
- UWNR Procedure No. 005
- various audits of facility operations as well as the requalification plan, emergency plan, and security plan completed by the RSC
- selected audits completed by Radiation Safety Department staff personnel and reviews completed by operations staff personnel
- UWNR annual operating reports for the past two fiscal years

#### Maintenance Logs and Records (IP 69001, Section 02.11)

This inspection included a review of the licensee's maintenance logs and records to verify that operational and maintenance activities were conducted and maintained in accordance with regulatory and TS requirements. Specifically, the inspection included a review of the following:

- computer files documenting equipment history records for the facility
- various UWNR procedures including No. 100, No. 100A, and No. 169
- UWNR annual operating reports for the past two fiscal years

#### Fuel Handling Logs and Records (IP 69001, Section 02.12)

This inspection included a review of the licensee's fuel handling logs and records to verify TS and procedural requirements were met. Specifically, the inspection included a review of the following:

- results of annual fuel/bundle inspections in the low-enriched uranium fuel bundle data notebook
- core status boards located at the reactor pool top and in the control room and the associated fuel element/bundle map
- various UWNR procedures including No. 112, No. 140, No. 142, No. 143, and No. 144

#### **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 May 9, 2025, the inspector presented the NRC inspection results to Mr. Robert Agasie, Reactor Director, Corey Edwards, Reactor Supervisor, and various members of the Reactor Safety Committee.

## Documents Reviewed

Inspection Procedure & Section	Document Type	Designation	Description or Title	Revision Number (No.) and/or Date	
IP 69001 – Section (Sec.) 02.01 (Org & Staffing)	Technical Specifications	UWNR TSS	“Technical Specifications and Bases for the University of Wisconsin Nuclear Reactor”	Amendment No. 19, dated 2/11/2025	
	Licensee reports	Annual operating reports	UWNR Laboratory Fiscal Year 2022-2023 Annual Operating Report	Dated 10/27/2023	
			UWNR Laboratory Fiscal Year 2023-2024 Annual Operating Report	Dated 9/13/2024	
	UWNR procedures – some require data to be recorded		No. 110	“Daily Reactor Pre-Start Checklist”	Rev. 54
			No. 111	“Reactor Startup Check Sheet”	Rev. 49
			No. 112	“Operating Log Sheet”	Rev. 10
			No. 114	“Reactor Shutdown Checklist”	Rev. 21
IP 69001 – Sec. 02.02 (Opns logs & records)	UWNR procedures – some require data to be recorded	No. 001	“Standing Operating Instructions”	Rev. 19	
		No. 110	“Daily Reactor Pre-Start Checklist”	Rev. 54	
		No. 111	“Reactor Startup Check Sheet”	Rev. 49	
		No. 112	“Operating Log Sheet”	Rev. 10	
		No. 114	“Reactor Shutdown Checklist”	Rev. 21	
	Facility records	Audits and reviews	Monthly UWNR Operations Summary Report completed by operators	2023 to the present	
			Monthly UWNR Audit and Report completed by Health Physics	2023 to the present	
	Licensee Reports	Annual Operating Reports	(Refer to Sec. 02.01 above which references the two most recent annual reports)	See above	
	IP 69001 – Sec. 02.03 (Proc)	UWNR procedure	No. 005	“UWNR Administrative Guide”	Rev. 65
		Procedure reviews	Reviews and updates	Annual reviews and updates as documented in Reactor Safety Committee (RSC) meeting minutes.	2023 to the present
Licensee Reports		Annual Operating Reports	(Refer to Sec. 02.01 above which references the two most recent annual reports)	See above	
IP 69001 – Sec. 02.04 (Requal)	Licensee program	Requalification Program	“University of Wisconsin Nuclear Reactor Operator Proficiency Maintenance Program” – also known as UWNR procedure – No. 004	Rev. 4	
	Licensee records	Personnel records	Medical records for selected licensed operators	Various dates	
			Copies of individuals’ licenses	Various dates	
	Facility documents	Requalification records	Selected annual reactor operation exams	2023 to the present	
	UWNR Procedures – some require data to be recorded		No. 004A	“Proficiency Maintenance Program Class Record Sheet”	Rev. 0
			No. 004B	“Operator Evaluation Checksheet” documenting quarterly evaluations	Rev. 0

Inspection Procedure & Section	Document Type	Designation	Description or Title	Revision Number (No.) and/or Date
IP 69001 – Sec. 02.04 (Requal) (cont'd)	UWNR procedures – some require data to be recorded (cont'd)	No. 004C	“Training Status Record.xlsx” documenting various associated requalification records for licensed operators including hours of operation per quarter, reactivity manipulations, and drill participation	Rev. 1
		No. 112	“Operating Log Sheet”	Rev. 10
		No. 155	“Abnormal Operating Procedure”	Rev. 33
“IP 69001 – Sec. 02.05 (Surveil)	Facility records	Computer files	Pool leak data maintained on the Facility Director’s computer	2018 to the present
	UWNR procedures – some require data to be recorded	No. 100	“Surveillance Activities”	Rev. 60
		No. 110	“Daily Reactor Pre-Start Checklist”	Rev. 54
		No. 122	“Surveillance Scram Checks”	Rev. 6
		No. 167	“Safety Blade and Transient Rod Fall Time Measurement Procedures”	Rev. 19
		No. 169	“Annual Maintenance Procedure”	Rev. 19
		No. 170	“Power Level Calibration Procedure and Record Sheet”	Rev. 31
No. 173	“Fuel Temperature Channel Calibration Procedure	Rev. 20		
Licensee Reports	Annual Operating Reports	(Refer to Sec. 02.01 above which references the two most recent annual reports)	See above	
IP 69001 – Sec. 02.06 (Exp)	Facility records related to experiments and samples	UWNR 130PC completed forms	Forms indicating the results of sample irradiation, other information about the samples and the disposal of the sample	Rev. 17
		Experiment approvals documented on UWNR No. 30 forms	“Cherenkov Radiation Detector in a Dry Tube”	approved 5/20/2022
	“Reinstallation of Neutron Collimator for Neutron Radiography and other Neutron Beam Experiments		approval dated 2/10/2020	
	UWNR procedures – some require data to be recorded	No. 002	“Experiment Standing Operating Instructions”	Rev. 13
		No. 030	“Experiment Review Questionnaire Outline – Facility Familiarization”	Rev. 10
		No. 112	“Operating Log Sheet” – with entries completed	Rev. 10
		No. 130	“Request for Isotope Production”	Rev. 17
IP 69001 – Sec. 02.08 (Changes)	RSC records	Meeting minutes	RSC meeting minutes (full RSC required by the TSs to meet annually)	April 2023 to the present
	50.59 facility changes	Records of recent changes	“Relocation of Back Flow Preventer”	Dated 6/11/2024
			“Replacement of Fire Detection System with Linear Heat Detection Cable	Dated 8/7/2024
	UWNR Procedures – some require data to be recorded	No. 005	“UWNR Administrative Guide”	Rev. 65
		No. 019	“Changes, Tests, and Experiments”	Rev. 4
		No. 020	“UWNR Modification Checklist”	Rev. 2

Inspection Procedure & Section	Document Type	Designation	Description or Title	Revision Number (No.) and/or Date
IP 69001 – Sec. 02.08 (Changes) (cont'd)	Licensee reports	Annual Operating Reports	(Refer to Sec. 02.01 above which references the two most recent annual reports)	See above
IP 69001 – Sec. 02.09 (Comm, Audits, & Reviews)	RSC records	Meeting minutes	RSC meeting minutes (full RSC required by the TSs to meet annually)	April 2023 to the present
	Audits	Audits conducted by the RSC	audits of various facility records including Operations, Requalification Plan, Emergency Plan, and Security Plan	2023 to the present
	TSs	UWNR TSs	“Technical Specifications and Bases for the University of Wisconsin Nuclear Reactor” stipulating the RSC duties	Amendment No. 19, dated 2/11/2025
	Facility records	Other audits and reviews	Monthly UWNR Operations Summary Report completed by operators	2023 to the present
			Monthly UWNR Audit and Report completed by Health Physics	2023 to the present
UWNR procedure	No. 005	“UWNR Administrative Guide”	Rev. 65	
IP 69001 – Sec. 02.11 (Maint)	Facility records related to maintenance	Computer files	Files maintained on a computer located in the control room for operators’ reference	2023 to the present
		UWNR procedures – some require data to be recorded	No. 100	“Surveillance Activities”
	No. 100A		“PM Serviced – Definition” – also includes a schedule of activities	Rev. 52
	No. 169		“Annual Maintenance Procedure”	Rev. 19
Licensee reports	Annual Operating Reports	(Refer to Sec. 02.01 above which references the two most recent annual reports)	See above	
IP 69001 – Sec. 02.12 (Fuel)	UWNR procedures – some require data to be recorded	No. 140	“Procedure for Disassembly of Four-Element Fuel Bundles”	Rev. 5
		No. 141	“Procedure for Reassembling Fuel Elements into Four-Element Bundles”	Rev. 4
		No. 142	“Procedure for Measuring Fuel Element Bow and Growth” and the LEU Fuel Bundle Data notebook containing data on all the fuel/bundles	Rev. 16
		No. 143	“Procedure for Fuel Handling and Core Arrangements”	Rev. 3
		No. 143A	“Core Design” – current core K21-R6	Rev. 4
	Facility records related to fuel	Core Status boards	Fuel element/bundle map located in the Control Room and at the pool top	5/8/2025
		Inspection results	Results of inspections of all fuel elements every year as required by the TSs	2023 through the present