UF UNIVERSITY of FLORIDA

Herbert Wertheim College of Engineering
UF Training Reactor Facility

PO Box 116134
Gainesville, FL 32611
352-294-2104
bshea@ufl.edu

June 30, 2025

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

Technical Specifications 6.7.1
License R-56, Docket 50-83

Subject: CY2024 Annual Report for the UFTR

Please find enclosed the UFTR annual report for calendar year 2024. This report is being submitted as required by our Technical Specifications, Section 6.7.1.

I declare under penalty of perjury that the foregoing and attached are true and correct to my knowledge.

Executed on June 30, 2025.

Brian Shea
Reactor Manager, University of Florida Training Reactor

cc: Duane Hardesty, Project Manager, NRC

University of Florida Training Reactor

Annual Report for Calendar Year 2024

The following annual report is submitted in accordance with Section 6.7.1 of the UFTR Technical Specifications.

Summary of Reactor Operations:

Total Energy Output for the year: 6,760 kW-hrs

Cumulative Energy Output Since Conversion to LEU: 103,598 kW-hrs

Routine operations conducted throughout the year with brief outages for maintenance and surveillances.

Unscheduled Shutdowns:

There were two unscheduled shutdowns during the year. On June 28, an unscheduled shutdown occurred while at 10 W. The full reactor trip occurred due to loss of main AC electrical power to the console, loss of local campus power was the cause. Normal operations resumed once condition was known.

On July 12, an unscheduled shutdown occurred while at 300 W. The reactor trip occurred due to coolant flow scram, the trip was determined to be spurious after investigation. Normal operations resumed with continued monitoring for possible cause, none found as of this date.

Major Maintenance:

A listing of all major maintenance is presented in Table I. The date Opened entry is when the Maintenance Log Page (MLP) was opened; in a few cases, this date may be one or more days after the original problem was noted. The date Closed entry is the day the MLP was closed which can also be one or more days after work completion.

Table I

MLP #	Opened	Closed	Summary
1	1/10	1/10	Replace Primary Resin and fill Primary Storage Tank with DI water.
2	4/8	4/8	Fill Primary Storage Tank with DI water.
3	6/3	7/1	CB2 control blade drive refurbishment.
4	7/8	7/8	Fill Primary Storage Tank with DI water.
5	7/12	7/15	Primary Coolant flow scram investigation.
6	7/22	8/2	Replace power supply for control blade indications.
7	8/12	8/15	Routine addition of makeup water to the Primary Storage Tank.
8	9/3	10/23	Crane transmitter replacement and inspection.
9	10/14	10/14	Fill Primary Storage Tank with DI water.
10	11/4	11/6	Nuclear Instrumentation Calibration adjustments.
11	12/2	12/16	Replace Primary Resin.

Changes, Tests, and Experiments Implemented under 10 CFR 50.59:

A listing of changes, tests, and experiments implemented under 10 CFR 50.59 is presented in Table II. All changes, tests, and experiments implemented during this period screened-out from full evaluation.

Table II

#	Approved	Summary
1-19	2/28	Procedure Change: Revisions to SOP-A.1,A.2,A.3,A.4,A.5,A.6,A.7,A.9,C.1,C.2, C.3,C.4 remove,E.1,E.2,E.3,E.4,E.6,E.7,E.8
20	5/6	Experiment: In-situ electrical performance of memory under mixed radiation.
21	8/6	Modification: Replace control blade position indication power supply.
22	8/20	Modification: Drill 2” hole in confinement for Pit B cable management in Rm 5.

Radioactive Effluents:

Liquid Waste
No wastewater releases were made during the year.

Gaseous Effluent
The total activity of Argon-41 released during CY2024 was 32.34 curies. Using the calculation method described in the UFSAR, the maximum potential dose to a member of the public from UFTR Ar-41 emissions was 0.1 mrem/year. This is significantly less than 25% of the ALARA constraint of 10 mrem/yr.

Environmental Surveys:

In addition to periodic radiation surveys using hand-held instruments, environmental monitoring is accomplished using radiation dosimeter badges. Areas monitored are located around the exterior of the Reactor Building (RB) and nearby buildings, including the Nuclear Sciences Building (NSB), the Rhines Hall (RH), Weil Hall (WH), Weimer Hall (WmH), and Wertheim Engineering Lab (WEL). The environmental dosimeter reports are tabulated and presented in Table III. Dose equivalents below the minimum measurable quantity are reported as "M".

Table III

Area	Quarterly mrem				Annual mrem
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	
1. NSB Rm. 316 window - inside	M	M	M	M	M
2. NSB, NW corner of Van de graff roof	5	2	M	M	7
3. UFTR West Lot, fence post	6	3	M	2	11
4. RH roof, SE roof corner near access	M	M	M	M	M
5. RH roof, above N entrance to bldg	M	M	M	M	M
6. WH roof, SE corner of main roof	M	M	M	M	M
7. WH roof, near roof access door	2	M	M	M	2
8. WH roof, due N of bldg 25	6	1	M	M	7
9. WH roof, SE corner of SW roof section	M	M	M	M	M
10. WmH, 3rd floor roof, SW corner	M	M	M	M	M
11. WmH Extension roof, SW corner	3	M	M	M	3
12. WmH Extension roof, NW corner	M	2	M	M	2
13. WEL roof, N side of Level 7	M	1	M	M	1

Radiation Exposures:

There were facility personnel or visitors that received doses that were greater than 25% of that allowed in 10 CFR Part 20. Two individuals received measurable occupational doses during the year. The maximum Total Effective Dose Equivalent (TEDE) received by any individual was 3 mrem. The maximum extremity dose (SDE, ME) received by any individual was 1392 mrem. This dose did not exceed the UF ALARA Investigation Level 2 quarterly limit and was handled appropriately by the Radiation Control Office.