



Herbert Wertheim College of Engineering
UF Training Reactor Facility

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

June 30, 2024

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: CY2023 Annual Report for the UFTR

Please find enclosed the UFTR annual report for calendar year 2023. 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, 2024.

A handwritten signature in black ink, appearing to read 'B. Shea', written over a light blue dotted grid background.

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 2023

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 CY2023: 8,136 kW-hrs

Cumulative Energy Output Since Conversion to LEU: 96,838 kW-hrs

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

Unscheduled Shutdowns:

There was one unscheduled shutdown during CY2023. On June 7, an unscheduled shutdown occurred during an up-power transient to 100 kW. The reactor trip occurred at 15 watts due to loss of electrical power to the Stack Dilute Fan, blown fuses were the cause. The fuses were replaced and normal operations resumed.

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 #	Date Opened	Date Closed	Summary
23-1	3/6/2023	3/6/2023	Routine addition of makeup water to the PC Tank.
23-2	5/3/2023	5/10/2023	Core Vent Damper Motor replacement.
23-3	5/23/2023	5/23/2023	Replaced Shield tank filters.
23-4	5/23/2023	5/23/2023	Routine addition of makeup water to the PC Tank.
23-5	7/17/2023	12/4/2023	Stack Dilute fan motor wiring, fuse block, and contactor replacement.
23-6	7/26/2023	7/26/2023	Routine addition of makeup water to the Shield Tank.
23-7	8/16/2023	8/16/2023	Routine addition of makeup water to the PC Tank.
23-8	11/27/2023	11/27/2023	Routine addition of makeup water to the PC Tank.

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 CY2023 screened-out from full evaluation.

Table II

Number	Date Approved	Summary
23-1	1/13/2023	Procedure Change: SOP-0.5 QA Program, change frequency of radiological surveys.
23-2	1/13/2023	Procedure Change: RCT#17 Accuracy check of SRPDs, change frequency of checks.
23-3	1/13/2023	Procedure Change: RCT#31 UFTR Environmental Surveys, change frequency of radiological surveys.
23-4	1/13/2023	Procedure Change: RCT#34 PAS Air flow rate determination, change frequency of determination.
23-5	2/13/2023	Experiment: In-situ electrical performance of memory under mixed radiation.
23-6	2/13/2023	Experiment: NAA of NASA samples in shield tank and beam ports.
23-7	2/23/2023	Modification: Install signal connections for future display of Log-N and Linear power indications.
23-8	10/26/2023	Modification: Install new rabbit system and Rev to SOP-A.8.
23-9 - 23-19	10/26/2023	Procedure Changes: Revisions to SOP-0.1, 0.2, 0.4, 0.5, 0.8, B.1, D.1, D.4, D.6, RCT#31, and remove RCT#37.
23-20 - 23-30	12/18/23	Procedure Changes: Revisions to SOP-0.3, 0.6, 0.7, 0.9, 0.10, B.2, B.4, D.2, D.3, D.5, D.7.

Radioactive Effluents:

Liquid Waste

No wastewater releases were made during CY2023.

Gaseous Waste

The total activity of Argon-41 released during CY2023 was 37.66 curies. Using the calculation method described in the UFSAR, the maximum potential dose to a member of the public from UFTR Ar-41 emissions during CY2023 was 0.2 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 TEDE (mrem)				Annual TEDE (mrem)
	Jan-Mar	Apr-Jun	Jul-Sep	Oct- Dec	
1. NSB Rm. 316 window - inside	17	M	M	M	17
2. NSB, NW corner of Van de graff roof	26	2	4	6	38
3. UFTR West Lot, fence post	40	2	6	6	54
4. RH roof, SE roof corner near access	13	M	M	2	15
5. RH roof, above N entrance to bldg	26	M	3	4	33
6. WH roof, SE corner of main roof	29	M	M	M	29
7. WH roof, near roof access door	19	M	M	M	19
8. WH roof, due N of bldg 25	22	1	3	7	33
9. WH roof, SE corner of SW roof section	39	M	M	2	41
10. WmH, 3 rd floor roof, SW corner	18	M	M	2	20
11. WmH Extension roof, SW corner	21	M	1	2	24
12. WmH Extension roof, NW corner	29	M	3	5	37
13. WEL roof, N side of Level 7	14	M	1	M	15

Radiation Exposures:

There were no exposures received by facility personnel or visitors that were greater than 25% of that allowed in 10 CFR Part 20. Eight individuals received measurable occupational exposures during CY2023. The maximum Total Effective Dose Equivalent (TEDE) received by any individual in CY2023 was 45 mrem. The maximum extremity dose (SDE, ME) received by any individual in CY2023 was 72 mrem.