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June 21, 2023

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: CY2022 Annual Report for the UFTR

Please find enclosed the UFTR annual report for calendar year 2022. 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 21, 2023.

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 2022

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 CY2022: 21,501 kW-hrs

Cumulative Energy Output Since Conversion to LEU: 88,702 kW-hrs

Routine operations were conducted throughout the year with brief outages for maintenance and surveillances with an extended outage for scheduled in-core fuel inventory and a fresh fuel addition to the core.

Unscheduled Shutdowns:

There were no unscheduled shutdowns during CY2022.

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. Update of CY2021 Report, MLP 21-8 was closed on 5/18/22.

Table I

MLP #	Date Opened	Date Closed	Summary
22-1	1/10/2022	1/10/2022	Routine addition of makeup water to the PC Tank.
22-2	1/10/2022	1/10/2022	Cleaned the reactor console key switch due to carbon buildup.
22-3	1/13/2022	1/13/2022	Replaced Stack Fan motor belt.
22-4	2/8/2022	2/8/2022	Replaced rupture disk and added makeup water to the PC Tank.
22-5	3/14/2022	3/14/2022	Routine addition of makeup water to the PC Tank.
22-6	4/28/2022	5/6/2022	Factory calibration adjustments to Nuclear Instrumentation.
22-7	8/1/2022	8/1/2022	Routine addition of makeup water to the PC Tank.
22-8	8/3/2022	8/9/2022	Adjusted spacer combs on fuel and dummy bundles to be added to the core.
22-9	9/21/2022	OPEN	Replaced the piping and controls for the Rabbit System
22-10	10/3/2022	10/3/2022	Routine addition of makeup water to the PC Tank.
22-11	11/14/2022	11/14/2022	Changed DI Water System Filter and Resin.
22-12	11/14/2022	11/14/2022	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 CY2022 screened-out from full evaluation.

Table II

Number	Date Approved	Summary
22-1	5/23/2022	Procedure Change: SOP-A.1 Pre-Operational Checks, change sequence for cycling console power.
22-2	5/24/2022	Procedure Change: SOP-E.2 Calibration of Rx Measuring Channels, change connection point for measuring compensating voltage.
22-3	6/07/2022	Procedure Change: SOP-A.9 Startup using Inverse Multiplication, change units of reactivity.
22-4	7/06/2022	Modification: Use of MCNP6.2 for fuel addition calculations, newer version than that used for license renewal FSAR information.
22-5	7/06/2022	Modification: Load a fresh partial fuel bundle into the core.
22-6	9/21/2022	Modification: Confinement hole created for rabbit system conduit installation.
22-7	10/31/2022	Procedure Change: SOP-A.2 Reactor Startup, changes needed based on adding new fuel to the core.
22-8	10/31/2022	Procedure Change: SOP-A.3 Operation at Power, editorial changes to be consistent with SOP-A.2 revision.
22-9	10/31/2022	Procedure Change: SOP-B.1 Radiological Emergency, editorial changes and changes due to new power supply references.
22-10	10/31/2022	Procedure Change: SOP-B-2 Emergency Procedure – Fire, similar changes made from SOP-B.1 revision.

Radioactive Effluents:

Liquid Waste

No wastewater releases were made during CY2022.

Gaseous Waste

The total activity of Argon-41 released during CY2022 was 95.75 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 CY2022 was 0.4 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	3	8	1	34	46
2. NSB, NW corner of Van de graff roof	6	14	6	35	61
3. UFTR West Lot, fence post	7	15	5	46	73
4. RH roof, SE roof corner near access	3	9	2	29	43
5. RH roof, above N entrance to bldg	4	13	1	5	23
6. WH roof, SE corner of main roof	4	8	3	32	47
7. WH roof, near roof access door	5	9	4	24	42
8. WH roof, due N of bldg 25	7	15	4	28	54
9. WH roof, SE corner of SW roof section	3	11	3	27	44
10. WmH, 3rd floor roof, SW corner	2	8	2	28	40
11. WmH Extension roof, SW corner	4	11	2	28	45
12. WmH Extension roof, NW corner	5	10	19	30	64
13. WEL roof, N side of Level 7	3	8	3	26	40
14. Control Badge - Building 683 west wall	3	5	M	43	51

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 CY2022. The maximum Total Effective Dose Equivalent (TEDE) received by any individual in CY2022 was 308 mrem. The maximum extremity dose (SDE, ME) received by any individual in CY2022 was 625 mrem.