Research Reactor Center
University of Missouri-Columbia

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May 13, 2005

Mr. Alexander Adams, Jr.
U.S. Nuclear Regulatory Commission
Mail Stop O12-G13
Washington, DC 20555-0001

REFERENCE: Docket No. 50-186
University of Missouri- Columbia Research Reactor
Amended Facility License R-103

SUBJECT: MURR Operations Monthly Summary

Dear Mr. Adams:

Enclosed is a copy of MURR's Monthly Operations Summary for April 2005. If you have any questions, please contact me at (573) 882-5276.

Sincerely,

Leslie P. Foyto
Reactor Manager

LPF/djr

Enclosure

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UNIVERSITY OF MISSOURI
RESEARCH REACTOR

OPERATIONS MONTHLY SUMMARY

April 2005

Prepared by:
Operations Staff

INTRODUCTION

The reactor operated continuously in March with the following exceptions: 3 shutdowns for scheduled maintenance and refueling; 3 unscheduled shutdowns.

MAINTENANCE ACTIVITIES

4/4/05	Refueled - removed core 05-16, loaded core 05-17.
	Placed epoxy patch on the secondary coolant side of Primary Heat Exchanger HX503A.
	Replaced the Reflector Elements in the GH and No. 9 positions.
4/8/05	Refueled - removed core 05-17, loaded core 05-18.
4/11/05	Refueled - removed core 05-18, loaded core 05-19.
	NRC inspectors arrived at MURR for routine inspection.
	Placed epoxy patch on the secondary coolant side of Primary Heat Exchanger HX503A.
4/18/05	Refueled - removed core 05-19, loaded core 05-20.
	Replaced a section of the Emergency Pool Fill piping which enters the Utility Seal Trench.
4/20/05	Shipped eight spent fuel elements to Savannah River Site.
4/22/05	Defueled - removed core 05-20.
4/25/05	Refueld – loaded core 05-21.
	Performed a backflush on the Secondary Coolant Side of the Pool Coolant System Heat Exchanger HX521.
	Completed the biennial change out of Control Blade 'A' Offset Mechanism.
	Completed the biannual cleaning of the Cooling Tower sump and basin.

UNSCHEDULED SHUTDOWNS

Date	No.	Type	Cause
4/5/05	1178	RRI	High Power Rod Run In from Signal Processor Drawer No. 1 Channel 4

On April 5, a Nuclear Instrumentation (NI) Channel No. 4 High Power Rod Run-In occurred while proceeding from 5 to 10 MW during a reactor startup. The set point for the Rod Run-In is 114%, while the highest power attained was 110% - as indicated by Channel No. 4 chart recorder and the remote meter on the control console. All other NI channel indications were normal. Troubleshooting revealed a mismatch between the remote indicators (chart recorder and console meter) and the linear bar graph on the NI drawer. Calibration of the linear bar graph was verified in specification. The isolator module, which amplifies and isolates the drawer output signal for use by the remote indicators, was replaced and calibration between the linear bar graph and the remote indicators was verified satisfactory. Trip settings were then verified after replacement and then confirmed again during "Front Panel Checks" prior to startup. The reactor was subsequently restarted to 10 MW operation. NOTE: Trip settings are set based on drawer calibrated indication, not remote indication. No deviation from Technical Specification Limiting Conditions of Operation for High Power Rod Run-In or Reactor Scram occurred.

4/8/05	1179	RRI	High Power Rod Run In from Signal Processor Drawer No. 1 Channel 4

On April 8, a Nuclear Instrumentation (NI) Channel No. 4 High Power Rod Run-In occurred while adjusting Signal Processor drawer No. 1 gain potentiometer to increase console remote meter indication to greater than 100%. This is a routine adjustment at power that is necessary to maintain NI indications within the administrative operating range of 100 to 105%, after first verifying power by manual heat balance. Remote meter indication was approximately 98.5% with a gain potentiometer setting of 369 at the start of the adjustment. A Senior Reactor Operator had increased the setting to 427, which caused console meter indication to increase to approximately 99.5% when the rod run-in occurred. Console meter indication was observed by two operators. Chart recorder indication was approximately 114%, the value of the rod run-in set point. Drawer indication was not known, as this indication is not typically viewed during adjustment. However, comparison of local and remote indications is verified prior to startup. All other NI channel indications were normal, thus indicating that no actual reactivity transient occurred. Troubleshooting efforts did not reveal any discrepancies. The NI drawer was removed and a spare drawer was installed and calibrated. The reactor was subsequently returned to 10 MW operation. The removed NI drawer will undergo further bench top troubleshooting. NOTE: A potentiometer adjustment of 100 correlates to a percent power indication change of approximately 3%. In this case, an increase in the setting of 58 would increase meter indication approximately 1 to 1-½ %, as it did.

UNSCHEDULED SHUTDOWNS (Cont.)

4/22/05	1180	Scram	Low Fire Main Pressure

On April 22, the control room operator initiated a manual reactor scram when facility fire main pressure decreased and remained below the minimum pressure required for emergency pool fill availability. Upon investigation, the University water supply line immediately outside the facility grounds had ruptured, causing a low-pressure condition. Campus Energy Management isolated and repaired the leak. The reactor was subsequently returned to 10 MW operation.

OPERATION SUMMARY FOR MONTH OF University of Missour Research Reactor Center (MURR)	Apr-05	
HOURS OPERATED THIS PERIOD	551.94	
TOTAL HOURS OPERATED, REACTOR	265,715.34	
HOURS OPERATED AT FULL POWER, THIS PERIOD	547.65	
TOTAL HOURS AT FULL POWER, REACTOR	262,358.44	
INTEGRATED POWER THIS PERIOD	228.34	MWD
TOTAL INTEGRATED POWER, REACTOR	103,517.73	MWD

Submitted by: Das K
MWD Custodian/Reactor Physicist

Date: 5/2/05