Research Reactor Center
University of Missouri-Columbia

Research Park
Columbia, MO 65211

PHONE (573) 882-4211
FAX (573) 882-6360

January 20, 2006

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 December 2005. If you have any questions, please contact me at (573) 882-5276.

Sincerely,

Leslie P. Foyto
Reactor Manager

LPF/djr

Enclosure

A020

UNIVERSITY OF MISSOURI
RESEARCH REACTOR

OPERATIONS MONTHLY SUMMARY

December 2005

Prepared by:
Operations Staff

INTRODUCTION

The reactor operated continuously in December with the following exceptions: 8 shutdowns for scheduled maintenance and refueling; 1 unscheduled power reduction. Received notification from the NRC that three new Reactor Operator licenses had been issued.

MAINTENANCE ACTIVITIES

12/5/05	Refueled – removed core 05-61, loaded core 05-62. Cleaned the High and Low Level probes in the Drain Collection Tank.
12/12/05	Refueled – removed core 05-62, loaded core 05-63. Flooded Beamport 'C' with demineralized water. Replaced Power Range Meter Channel #6 test and feedback module.
12/19/05	Refueled – removed core 05-63, loaded core 05-64. Replaced the Pool and Primary Coolant System Delta Temperature meters.
12/26/05	Refueled – removed core 05-64, loaded core 05-65. Refueled – removed core 05-65, loaded core 05-66. Performed a flux profile measurement of the flux trap.
12/28/05	Completed CP-31 (Calibration of the Eberline Radiation Stack Monitor).
12/29/05	Replaced the power supply to the Primary Power Calculator Digital Indication.

UNSCHEDULED POWER REDUCTIONS

Date	No.	Type	Cause
12/26/05	1195	Rod Run-In	Channel No. 5 High Power

On December 26, during a reactor startup, a "Channel 4, 5 & 6 Hi Power Rod Run-In" was automatically initiated when Nuclear Instrumentation (NI) Channel No. 5 exceeded its rod run-in set point of 114% immediately after placing the reactor in automatic control at 10 MWs. The rod run-in was reset, with Reactor Manager's approval, and the reactor was subsequently returned to 10 MW operation.

On December 12, in preparation for the upcoming beryllium change-out, Beamport 'A' was filled with demineralized water. Filling a beamport with water secures the neutron beam to its experimental apparatus. This is performed with the reactor shutdown, and in keeping with the principles of ALARA, allows the experiment and its shielding to have a sufficient period of decay before being dismantled. Filling or draining a beamport also affects neutron signal strength to NIs that are adjacent to the beamport; filling decreases signal strength whereas draining increases it. NI Channel No. 6 and the Wide Range Monitor (WRM) are adjacent to Beamport 'A'. A change in signal strength can be compensated by gain adjustment on Channel No. 6; however, the WRM does not have sufficient gain adjustment to increase meter indication to 100% with the beamport filled. The WRM, which has no safety functions, provides an input signal to the Rod Control System for automatic control of reactor power. The reactor may be operated at 10 MW in automatic control with WRM meter indication less than 100% by matching power schedule set point to WRM indication. In this instance, the unfamiliarity of placing the reactor in automatic control with WRM indication less than 100% allowed Channel No. 6 to increase to its rod run-in set point. The reactor operators have been informed to approach 10 MWs more conservatively and place the reactor in automatic control at 9 MWs and increase power from that point. Beamport 'A' will be drained after the reassembly of its experiment.

Dec

OPERATION SUMMARY FOR MONTH OF University of Missour Research Reactor Center (MURR)	**Dec-05**	
HOURS OPERATED THIS PERIOD	686.52	
TOTAL HOURS OPERATED, REACTOR	271,015.62	
HOURS OPERATED AT FULL POWER, THIS PERIOD	683.72	
TOTAL HOURS AT FULL POWER, REACTOR	267,634.38	
INTEGRATED POWER THIS PERIOD	285.07	**MWD**
TOTAL INTEGRATED POWER, REACTOR	105,717.36	**MWD**

Submitted by: Das K
MWD Custodian/Reactor Physicist

Date: 1/2/06