

ROUTING			
First		Second	
RA		RC	
DRA		EIC	
DRP		SGA	
DRS		OI	
DNMS		PAO	
DRMA			

FILE

# UNIVERSITY OF MISSOURI RESEARCH REACTOR

## OPERATIONS MONTHLY SUMMARY

January 1996

Prepared by:  
Operations Staff

January 1996

The reactor operated continuously in January with the following exceptions: five shutdowns for scheduled maintenance and refueling; one unscheduled shutdown.

On January 23, a manual scram was initiated by the console reactor operator upon discovering that the regulating blade was not operating properly. Electronics technicians discovered, and replaced, a bad bearing in the gearbox input shaft coupling. The regulating blade was tested satisfactorily, and returned to normal operation. A Licensee Event Report was written regarding this failure which involved non-compliance with Technical Specification 3.2.a, which states, "All control blades, including the regulating blade, shall be operable during reactor operation."

On January 29, during scheduled maintenance with the reactor shutdown, one of two redundant anti-siphon valves (V543A) was found to be inoperable. Compliance testing of the anti-siphon system was performed to verify the redundant valve (V543B) was operable. This test verified that the siphon break system was operable as required by Technical Specification 3.9.a. Operability of the siphon break system is also verified at each reactor startup as part of the startup procedure for the primary system.

Special Maintenance Procedure, SMP-10 was performed to investigate the V543A failure. The cause of failure was a missing pin connecting the valve stem to the actuating linkage. The valve was removed, rebuilt and tested, and returned to the system. A new pin with a keeper assembly was installed to ensure the pin could not work its way out of the adaptor. This pin had previously been staked into place. The adaptor pin for the redundant valve, V543B was inspected to ensure a similar problem with it was not occurring.

Details of the valve failure and corrective actions were reviewed by the Action Subcommittee (a subset of the Safety Subcommittee) on February 12, 1996. These details will be reviewed by the full Safety Subcommittee at the next meeting.

Other major maintenance items for the month included: replacing the bearing in the input shaft coupling gearbox of the regulating blade; installing a south pneumatic tube terminal in graphite wedge #3; installing new 'G' and 'H' graphite wedges.

## UNSCHEDULED SHUTDOWNS

<u>Date</u>	<u>Number</u>	<u>Type</u>	<u>Cause</u>
1/23/96	1046	Manual Scram	Regulating blade drive gearbox bearing failure.

## OPERATION SUMMARY

HOURS OPERATED THIS PERIOD	650
TOTAL HOURS OPERATED	193,569
HOURS AT FULL POWER THIS PERIOD	648
TOTAL HOURS AT FULL POWER	190,569
INTEGRATED POWER THIS PERIOD	270 MWD
TOTAL INTEGRATED POWER	73,551 MWD

## MAINTENANCE ACTIVITIES

1/2/96	Refueled - removed core 95-58, loaded core 96-1. Replaced the open indication microswitch on valve 543A (anti-siphon); replaced the roll pin in the gearbox input drive shaft coupling.
1/8/96	Refueled - removed core 96-1, loaded core 96-2.
1/16/96	Refueled - removed core 96-2, loaded core 96-3.
1/22/96	Refueled - removed core 96-3, loaded core 96-4.
1/23/96	Refueled - removed core 96-4, loaded core 96-5. Replaced bearing in input shaft coupling gearbox of the regulating blade.
1/29/96	Refueled - removed core 96-5, loaded core 96-6. Installed south p-tube terminal in graphite wedge #3; installed new 'G' and 'H' graphite wedges. Performed SMP-10, Valve 543 A/B maintenance, to investigate problem with V543A and repair.