

University of Maryland

Department of Chemical and Nuclear Engineering
COLLEGE PARK, MARYLAND 20742

July 27, 1982

Dr. Robert L. Tedesco
Assistant Director for
Reactor Operations
Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Dr. Tedesco:

This report is submitted in accordance with the requirements set forth in our Technical Specifications for the Maryland University Training Reactor. This report covers the time period from June 30, 1981 through June 30, 1982.

A. Summary of Operation Experience

No difficulties were encountered with the reactor during this reporting period. We continued to provide reactor service to the Nuclear Engineering courses, primarily, ENNU 320 - Nuclear Engineering Technology. This service utilized the reactor five afternoons a week and two (2) hours on Saturday morning.

Considerable effort was directed to the development and implementation of a DOE sponsored "Reactor Sharing Program." Basically, this program allowed us to make the reactor facility available to other Universities and schools. The response of local colleges and universities was gratifying. See appendix A for participants.

Our Reactor Operators Training Program produced four (4) candidates for the NRC Reactor Operators examination in September of this year. Summer job commitments and NRC schedule prevented an earlier examination.

No major changes were made to the reactor during this reporting period.

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Nuclear Engineering Program

Tel. 301-454-2430/6

B. Reactor Operations

During the period 30 June 1981 through 30 June 1982 the reactor was operated 143 times and produced a total of 6.7 megawatt-hours of energy.

C. Equipment Surveillance and Tests

Control rod inspection was not performed during this reporting period. Next scheduled inspection is 12/18/82 in accordance with part 4.2c of our Technical Specifications. However, the rod drop time was measured. Results are tabulated below:

<u>Rod Identification</u>	<u>Rod drop time, Sec.</u>
SHIM I	0.70
SHIM II	0.70
Reg. Rod	0.62

All area monitors were calibrated on a monthly basis or when operation indicates the need. The reactor power was determined by a calorimetric method described in our procedure manual. No significant calibration change was required.

D. Emergency Shut-down and Scrams

No emergency shut-down or scram occurred during this operating period.

E. Maintenance Items

Over a period of one or two weeks during the first part of this reporting season we experienced an unusual number of unexpected rod drops which would shut down the reactor. A systematic investigation of the magnet current system finally revealed that the line voltage had dropped from the usual 114 V to about 95 V. This low voltage was not sufficient to stabilize the interlocks and relays. The problem was found to be in the building power supply and was corrected. We installed a line voltage meter in the system and no problem has since been encountered.

F. A summary of the nature and amount of radioactive effluents released or discharged to the environment and or radioactive waste shipped off site for disposal.

During this reporting period no waste water containing any measurable radioisotope was discharged to the sewage system. In addition, monthly air samples were taken in the reactor area. The samples received no activity greater than background.

G. Radiation Exposures

In the period June 31, 1981 through June 30, 1982 approximately 323 people visited the reactor facility. (See Appendix B.) This is in addition to the badged personnel taking reactor courses and operating personnel. In all cases the radiation received was negligible. Floor and area wipes have been routinely carried out with the results that any contamination was far below the maximum permissible level.

H. Changes to the Facility on Procedures, Tests, and Experiments.

No substantial changes were made to any of these categories during this reporting period.

Sincerely,

Ralph L. Belcher

Ralph L. Belcher
Nuclear Reactor Director

RLB/elr

Appendix AREACTOR SHARING PARTICIPANTS

Howard University
John Hopkins University
Morgan State University
Towson State University
Prince Georges Community College

Appendix BHigh Schools and Groups Touring the Facility

Catoctin High School
Town and Country Day School
Bethesda - Chevy Chase High School
Gwynn Park High School
Prospect Hall High School
Eleanor Roosevelt High School

Appendix CINTERNATIONAL VISITORS

England
Japan
Switzerland

Appendix D

Papers Presented from the Use of MUTR.

<u>Authors</u>	<u>Title</u>	<u>Conference</u>
G.D. Guttman	Instrument Neutron	
R.L. Belcher	Activation Analysis as a Diagnostic Screening Technique for Cystic Fibrosis	Cystic Fibrosis Club
G. Gelac	An Investigation of Mercuric Iodide as a beta ray spectrometer	Report to E.G. & G. to be presented for publication.
R.L. Belcher		
Dave Kelly	A study of a Simplified Boronometer	Presented at the Spring Student ANS meeting in Atlanta
Angela Munno		