

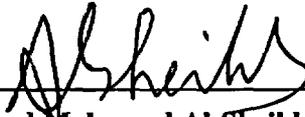
United States Nuclear Regulatory Commission  
One White Flint North MS 12G13  
11555 Rockville Pike  
Rockville, Maryland 20852-2738  
ATTN: ALEXANDER ADAMS, JR

August 4, 2004

Enclosed please find the University of Maryland's response to the request for additional information as it pertains to the Environmental Report for the Maryland University Training Reactor.

**I declare under penalty of perjury that the foregoing is true and correct.**

**Executed on August 4, 2004**



\_\_\_\_\_  
[Signature] Mohamad Al-Sheikhly, Director  
University of Maryland Training Reactor  
License Number R-70, Docket number 50-166

FE23  
A020

## ENVIRONMENTAL REPORT

72. Section V of the 1999-2000 Annual Operating Report states that continuous monitoring for the year was accomplished using fixed-mounted film badges throughout the interior of the reactor building. Facility Technical Specification 3.6.4 specifies that the campus radiation safety organization maintain an environmental monitor at the site boundary as well. Explain how compliance is demonstrated, and if any abnormal radiation levels were ever detected.

Response:

These environmental monitors are mounted on the east and west exterior walls of the building and have been evaluated for more than a decade. A synopsis of the readings is shown in the following table for the period of January 15, 1999 to present. The results are gross readings and are not background adjusted.

**Environmental Monitoring**  
**Maryland University Training Reactor**

2004							
Time Period		#2	Dose	Time Period		#7	Dose
Start	End	Location	mr	Start	End	Location	mr
1/25/2004	4/25/2004	West Wall	21.0	1/25/2004	4/25/2004	East Wall	23.0
		West Wall				East Wall	
		West Wall				East Wall	
		West Wall				East Wall	
		Annual	21.0			Annual	23.0
2003							
Time Period		#2	Dose	Time Period		#7	Dose
Start	End	Location	mr	Start	End	Location	mr
1/25/2003	4/25/2003	West Wall	24.0	1/25/2003	4/25/2003	East Wall	25.0
4/25/2003	7/25/2003	West Wall	28.0	4/25/2003	7/25/2003	East Wall	26.0
7/25/2003	10/25/2003	West Wall	28.0	7/25/2003	10/25/2003	East Wall	29.0
10/25/2003	1/15/2002	West Wall	32.0	10/25/2003	1/15/2002	East Wall	34.0
		Annual	112.0			Annual	114.0
2002							
Time Period		#2	Dose	Time Period		#7	Dose
Start	End	Location	mr	Start	End	Location	mr
1/15/2002	4/15/2002	West Wall	37.8	1/15/2002	4/15/2002	East Wall	45.1
4/15/2002	7/15/2002	West Wall	12.7	4/15/2002	7/15/2002	East Wall	13.4
7/15/2002	10/25/2002	West Wall	27.1	7/15/2002	10/25/2002	East Wall	27.5
10/25/2002	1/15/2001	West Wall	30.4	10/25/2002	1/15/2001	East Wall	30.4
		Annual	108.0			Annual	116.4
2001							
Time Period		#2	Dose	Time Period		#7	Dose
Start	End	Location	mr	Start	End	Location	mr
1/15/2001	4/15/2001	West Wall	29.7	1/15/2001	4/15/2001	East Wall	29.1
4/15/2001	7/15/2001	West Wall	26.5	4/15/2001	7/15/2001	East Wall	29.0
7/15/2001	10/25/2001	West Wall	26.0	7/15/2001	10/25/2001	East Wall	27.3

10/25/2001	1/15/2000	West Wall	27.4	10/25/2001	1/15/2000	East Wall	30.9
		Annual	109.6			Annual	85.4
<b>2000</b>							
Time Period		#2	Dose	Time Period		#7	Dose
Start	End	Location	mr	Start	End	Location	mr
1/15/2000	4/15/2000	West Wall	19.6	1/15/2000	4/15/2000	East Wall	21.4
4/15/2000	7/15/2000	West Wall	24.1	4/15/2000	7/15/2000	East Wall	25.5
7/15/2000	10/25/2000	West Wall	24.8	7/15/2000	10/25/2000	East Wall	25.5
10/25/2000	1/15/1999	West Wall	28.0	10/25/2000	1/15/1999	East Wall	34.3
		Annual	96.5			Annual	106.7
<b>1999</b>							
Time Period		#2	Dose	Time Period		#7	Dose
Start	End	Location	mr	Start	End	Location	mr
1/15/1999	4/15/1999	West Wall	12.2	1/15/1999	4/15/1999	East Wall	12.3
4/15/1999	7/15/1999	West Wall	23.3	4/15/1999	7/15/1999	East Wall	15.7
7/15/1999	10/15/1999	West Wall	20.2	7/15/1999	10/15/1999	East Wall	25.0
10/15/1999	1/15/1998	West Wall	32.8	10/15/1999	1/15/1998	East Wall	34.5
		Annual	88.5			Annual	87.5

These results are typical of what is observed during a review of all environmental monitors. Considering the naturally occurring background, these results are statistically indistinguishable from other areas that are not in the vicinity of a nuclear facility. All results of the area monitors are delivered to the University of Maryland Radiation Safety Office where they are reviewed and approved by the Radiation Safety Officer. Any elevated readings will be brought to the attention of the Reactor Director and if warranted, to the Radiation and Reactor Safety Committees.

73. Discuss actual releases of airborne, liquid and solid waste from the facility for the past 10 years and if these trends are expected to continue in the future.

Response:

The manufacture and release of liquid and solid waste is typically limited to one cubic foot of low level resin from the ion exchange column and one sock filter per year. The levels are typically not more than three times the background levels of the area. The sock filter is approximately 500 grams and consists of a fibrous synthetic tube that is closed on one end. This is the coarse filter for the primary coolant system as described in the FSAR.

There has been no liquid waste released other than the overflow from the vessel overflow. This waste was surveyed by the Radiation Safety Office and approved for discharge into the environment. The sump is emptied approximately every three to five years with a total volume of approximately 50 gallons. This pattern of minimal release is expected to continue as the MUTR is predominantly a training facility with occasional NAA that is typically performed with extremely small quantities of samples which are held for decay and not disposed of as radioactive waste.