



June 2, 2010

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: ANNUAL REPORT CORRECTION

Enclosed please find an amended Annual Report for the University of Maryland Training Reactor (MUTR) in accordance with the requirements set forth in the Technical Specifications. This amended report covers the period from July 1, 2008 to June 30, 2009. The original report is superseded by this amended report.

Sincerely,

A handwritten signature in cursive script that reads "Alsheikhly".

Dr. Mohamad Al-Sheikhly
Reactor Director

Cc: Reactor Files

AO20
LRR

ANNUAL REPORT: July 1, 2008 – June 30, 2009

FOR THE

MARYLAND UNIVERSITY TRAINING REACTOR

License No. R-70

Docket No. 50-166



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I. INTRODUCTION

The University of Maryland Training Reactor (MUTR) is an open-pool type, TRIGA fueled reactor licensed for operation at 250 kW thermal power. The core is cooled by natural convection of the pool water with auxiliary cooling provided for protection of the filters and ion exchange equipment associated with reactor support piping.

The MUTR is used for academic instructions and operator training, performance of neutron and gamma irradiations, neutron activation analysis experiments, and tours and demonstrations for groups internal and external to the campus as well as for visiting nuclear power plant trainees.

REACTOR USEAGE

During the past year the MUTR operated for a total of 72 runs (Run Numbers 3917 - 3988), which are categorized below:

Operator Training/Requalification*	26 runs
Tours, Labs & Demonstrations	14 runs
Calibration, Maintenance, and Surveillance	15 runs
Irradiations and Activations	17 runs

*Note: Some runs involved training and surveillance and may be counted in both categories.

**Note: Some of the runs in the Classes category consisted of irradiations. They are not included in the Irradiations category.

To perform these runs the core produced 15.298 MWh (kWh meter change from 244583 kWh to 259881 kWh), with a corresponding burnup of 0.87 Grams of U-235.

III. SURVEILLANCE TESTS AND INSPECTIONS

All required surveillance tests and inspections were performed at the specified intervals. The required surveillance items for this reporting period include:

WATER SAMPLE TESTS

AIR SAMPLE TESTS

RADIATION SURVEYS

CONTROL ROD DROP TEST

RAM CALIBRATION

SNM INVENTORIES

ALARA REVIEW

In addition to the above surveillance items, the following maintenance operations were performed on the indicated dates:

9/30/08 Dri-rite baked. (Run 3937)

12/09/08 Dri-rite replaced. (Run 3950)

3/05/09 Dri-rite baked. (Run 3964)

6/12/08 Dri-rite replaced. (Run 3985)

Additional minor maintenance was performed such as light bulb replacement and fine-tuning of equipment was performed as necessary.

IV. CHANGES TO FACILITY

There were no significant changes to the Facility during this reporting period.

V. ENVIRONMENTAL SURVEYS OF SURROUNDING AREAS

All continuous monitoring for this year was accomplished using fixed-mounted film badges throughout the interior of the reactor building itself. These badges recorded the following exposures:

<u>Monitor</u>	<u>Location</u>	<u>Dose (mrem)</u>
1	Control Room	94
2	Pool Surface	541
3	Hot Room	353
4	Prep Room	131
5	S. Wall Upper	22
6	S. Wall Lower	76
7	E. Wall Lower	94
8	Pump Room	330
9	N. Wall Lower	1425
10	W. Wall Lower	342

VI. RADIOACTIVE RELEASE AND DISCHARGE TO THE ENVIRONMENT

The Reactor Storage Sump was not discharged during this reporting period.

The only release from the MUTR consists of Ar-41. From Section 11 of the SER for the MUTR, a 15.3 MWh operation year would result in the generation of 60.9 mCi of Ar-41 for the entire year from the reactor pool tank. For this operational year, a combined 25.1 mCi of Ar-41 was released to the reactor building. This value was used in the EPA program COMPLY. The MUTR meets the EPA level 2 compliance for airborne release of radioactive materials. A copy of the output for the EPA computer program "COMPLY" is appended with this report.

VII. ALARA REVIEW FOR FACILITY PERSONNEL AND VISTOR EXPOSURE

A review of exposure records and all facility operations were performed by facility management as part of the annual ALARA audit. For this reporting period, all badged personnel and students received doses less than ten per-cent of their annual dose limit.

The Pocket Dosimeters recorded minimal exposure for all guests and service personnel. Calibrations of these self-reading dosimeters were performed on an annual basis by the University of Maryland's Radiation Safety Office.

VIII. UNSCHEDULED SHUTDOWNS/REPORTABLE OCCURRENCES

No unscheduled shutdowns occurred during this reporting period.

There were no reportable occurrences during this reporting period.

IX. SPECIAL EXPERIMENTS

There were three special experiments performed during this reporting period. All three were duplicates of previously performed operations but required opening the thermal column and therefore by Operating Procedure 105 Revision 12 (OP105R12) section 3.3 were considered "Special Experiments". These experiments were conducted in a "standard" configuration with the thermal column plug in place but with small packages of wire of various materials used in standard flux and spectra determination. These experiments were operations 3978 (12May09), 3979 (13May09), and 3988 (29Jun09).

X. CHANGES IN FACILITY STAFF

There were no significant changes to staffing during this reporting period with the exception of one RO (Ian Gifford) was upgraded to a SRO license and three additional ROs were added (Layla Shahamat, Anders Gilberston, and Paulette Torres).

APPENDIX A: EPA COMPLIANCE

Below is the output from the EPA program COMPLY for the Ar-41 release from the MUTR:

COMPLY: V1.5d.

7/17/09 09:32

40 CFR Part 61
National Emission Standards
for Hazardous Air Pollutants

REPORT ON COMPLIANCE WITH
THE CLEAN AIR ACT LIMITS FOR RADIONUCLIDE EMISSIONS
FROM THE COMPLY CODE, VERSION 1.5d

Prepared by:

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Prepared for:

U.S. Environmental Protection Agency
Office of Radiation Programs
Washington, D.C. 20460

COMPLY: V1.5d.

7/17/09 09:32

2008-2009 MUTR Annual Report Ar-41 Release

SCREENING LEVEL 1

DATA ENTERED:

Effluent concentration limits used.

DATA ENTERED FOR STACK 1:

Nuclide	CONCENTRATION (curies/cu m)
AR-41	6.05E-05

DATA ENTERED FOR STACK 2:

Nuclide	CONCENTRATION (curies/cu m)
AR-41	6.05E-05

NOTES:

Input parameters outside the "normal" range:

None.

RESULTS:

You are emitting 7488.2 times the allowable amount
given in the concentration table.

*** Failed at level 1.

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COMPLY: V1.5d.

7/17/09 09:32

2008-2009 MUTR Annual Report Ar-41 Release

SCREENING LEVEL 2

DATA ENTERED:

RELEASE RATES FOR STACK 1.

Nuclide	Release Rate (curies/YEAR)
AR-41	6.012E-02

RELEASE RATES FOR STACK 2.

Nuclide	Release Rate (curies/YEAR)
AR-41	6.012E-02

SITE DATA FOR STACK 1.

Release height 8 meters.

Building height 11 meters.

The source and receptor are not on the same building.

Distance from the source to the receptor is 8 meters.

Building width 15 meters.

SITE DATA FOR STACK 2.

Release height 8 meters.

Building height 11 meters.

The source and receptor are not on the same building.

Distance from the source to the receptor is 8 meters.

Building width 15 meters.

Default mean wind speed used (2.0 m/sec).

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COMPLY: V1.5d.

7/17/09 09:32

NOTES:

Input parameters outside the "normal" range:

None.

RESULTS:

Effective dose equivalent: 5.8E-02 mrem/yr.

*** Comply at level 2.

This facility is in COMPLIANCE.

It may or may not be EXEMPT from reporting to the EPA.

You may contact your regional EPA office for more information.

***** END OF COMPLIANCE REPORT *****