

Department of Nuclear Engineering

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Nuclear Engineering
Safety Engineering
Industrial Hygiene
Health Physics

29 Aug1991

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

REFERENCE: License R-23, Docket#50-59

Dear Sir:

Please find enclosed one copy of the most recently completed annual operating report dated 1 June 1990 to 31 May 1991 for the AGN-201M reactor, Docket#50-59. If you have any questions concerning this report please contact me at (409) 845-4988.

Sincerely,

Robert O. Berry
Reactor Supervisor AGN-201M

ANNUAL OPERATING REPORT

of the

TEXAS A&M UNIVERSITY AGN-201M TRAINING REACTOR

NRC LICENSE R-23

JUNE 1, 1990 - MAY 31, 1991

DEPARTMENT OF NUCLEAR ENGINEERING

TEXAS A&M UNIVERSITY

College Station, Texas 77743-3133

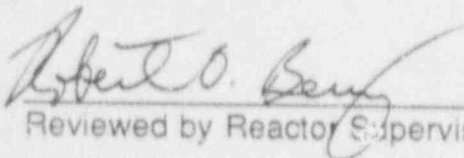
ANNUAL OPERATING REPORT


of the

TEXAS A&M UNIVERSITY AGN-201M TRAINING REACTOR

NRC LICENSE R-23

JUNE 1, 1990 - MAY 31, 1991


Reviewed by Reactor Supervisor


Reviewed by Department Head

DEPARTMENT OF NUCLEAR ENGINEERING

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1. SUMMARY

This report details the pertinent activities related to the Texas A&M University AGN-201M training facility operated by the Department of Nuclear Engineering during the period of 1 June 1990 until 31 May 1991. The contents of this report are intended to comply with requirements of 10CFR50 section 50.59(b), and Appendix A of the Technical Specifications for this facility under license R-23.

The main function of this facility is to provide an operating nuclear system to be used as a research tool, to support the requirements of Nuclear Engineering courses and for operator training. The following Nuclear Engineering courses were supported during this reporting period:

NUEN 402: Nuclear Detection and Isotope Technology Laboratory
NUEN 405: Nuclear Engineering Experiments
NUEN 679: Practical Applications of Radiological Safety 1

All of the components that were replaced as part of preventive and corrective maintenance during this reporting period are detailed in Section 4 of this report. All of the components that have been replaced during this reporting period do not involve any unreviewed safety questions and are not expected to adversely affect the safe operation of this facility. The latest results of all major parameter surveillance tests performed during this reporting period are shown in Table 1.

TABLE 1: REACTOR PARAMETERS SURVEILLANCE MEASUREMENTS

<u>DATE</u>	<u>ROD</u>	<u>REACTIVITY WORTH</u>
9 April 91	SAFETY ROD#1	1.109% $\Delta k/k$
9 April 91	SAFETY ROD #2	1.125% $\Delta k/k$
9 April 91	COARSE CONTROL ROD	1.177% $\Delta k/k$
9 April 91	FINE CONTROL ROD	0.381% $\Delta k/k$

<u>DATE</u>	<u>ROD</u>	<u>ROD DROP TIMES</u>
12 Mar 91	SAFETY ROD#1	92 msec
12 Mar 91	SAFETY ROD#2	134 msec
12 Mar 91	COARSE CONTROL ROD	112 msec

<u>DATE</u>	<u>ROD</u>	<u>REACTIVITY INSERTION RATES</u>
9 April 91	SAFETY ROD#1	0.0442% $\Delta k/k/sec$
9 April 91	SAFETY ROD #2	0.0497% $\Delta k/k/sec$
9 April 91	COARSE CONTROL ROD	0.0413% $\Delta k/k/sec$
9 April 91	FINE CONTROL ROD	0.0132% $\Delta k/k/sec$

		<u>TOTAL EXCESS REACTIVITY</u>
9 April 91	TOTAL EXCESS REACTIVITY*	0.1885% $\Delta k/k$

*corrected to 20°C

2. OPERATIONAL SUMMARY

<u>UTILIZATION BY CATEGORY</u>	<u>HOURS</u>
(a) Support of Nuclear Engineering Courses	12.04
(b) Operator Training/Requalification	7.99
(c) Preventive/Corrective Maintenance	4.65
<u>Total Operating Hours:</u>	29.33
<u>Total Hours Critical:</u>	16.42
<u>Total Watt-Hours of Operation:</u>	14.93
<u>Average Power Level of Operation (Watts):</u>	00.82
<u>Number of Reactor Startups</u>	29

3. UNSCHEDULED SHUTDOWNS

<u>DATE</u>	<u>TYPE</u>	<u>CAUSE</u>	<u>CORRECTIVE ACTION</u>
2/14/91	Channel #3 High Level	Spike on meter when switching scales	Operator counseled Channel #3 switch rotated to clean contacts

4. MAJOR SAFETY RELATED CORRECTIVE MAINTENANCE

- (a) 3/11/91 Replaced the following tubes in Channel#2 with identical replacements: V-6, V-11.
- (b) 3/12/91 Replaced rod up interlock switch on Safety Rod #1 and K-10 relay with identical replacement components.

5. **(a) FACILITY CHANGES**

A new door has been added in the facility in the room 135 area. This door has been added in order to enhance security in this area, with the conversion of a counting laboratory to an undergraduate computer laboratory this new door was required.

(b) CHANGES TO PLANS AND PROCEDURES

The facility diagrams contained in both the security and the emergency plan have been updated to include the addition of the new door in the room 135 area.

(c) NEW EXPERIMENTS OR TESTS

No new experiments or tests were performed during this reporting period.

6. **SUMMARY OF SAFETY EVALUATIONS**

No changes, tests or experiments were performed during this reporting period which meet the criteria of 10CFR50 paragraph 50.59 requiring a safety evaluation.

7. **SUMMARY OF RADIOACTIVE EFFLUENTS RELEASED**

No liquid or solid radioactive waste was released during this reporting period.

8. **ENVIRONMENTAL RADIOLOGICAL SURVEYS**

No environmental radiological surveys were performed outside this facility during this reporting period.

9. **RADIATION EXPOSURE**

During calendar year 1990 two people's exposure were reported between 0.100 - 0.250 Rem. All of the other exposures were reported to be less than 0.100 Rem.

10. MISCELLANEOUS

The following personnel participated satisfactorily in the AGN - 201M
requalification program.

Robert O. Berry

SOP - 43374

Gerald Schlapper

SOP - 4210