

ANNUAL OPERATIONS REPORT

of the

TEXAS A&M UNIVERSITY AGN-201M TRAINING REACTOR

NRC LICENSE R-23

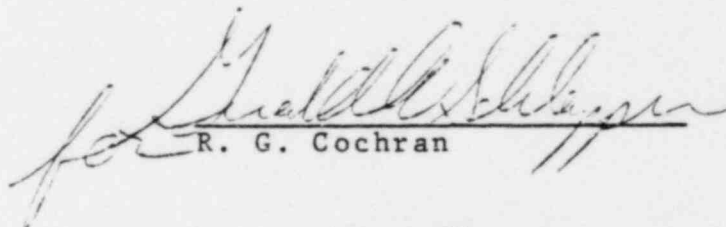
June 1, 1980 - May 31, 1981

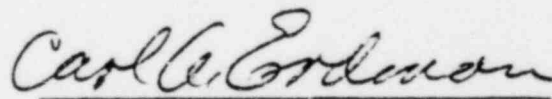
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TEXAS A&M UNIVERSITY AGN-201M TRAINING REACTOR

NRC LICENSE R-23
June 1, 1980 - May 31, 1981

Prepared by:


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1. SUMMARY

This report details the pertinent activities related to the Texas A&M University AGN-201M training reactor facility operated by the Department of Nuclear Engineering during the period June 1, 1980 to May 31, 1981. Furthermore, it is intended that the contents of this report comply with the requirements of 10 CFR 50, Section 50.59 (b) and Appendix A, Technical Specifications, of the NRC license R-23.

The utilization of this facility continues to be similar to that of previous years. The general categories of utilization for this past year were support of Nuclear Engineering courses, operator training, and preventive maintenance. Nuclear Engineering courses supported during the past year were:

ENGR 101G	Engineering Analysis
NE 405	Nuclear Engineering Experiments
NE 679	Practical Applications of Radiological Safety I

During normal preventive maintenance, malfunctioning components were replaced as detailed in Section 4. Facility modifications and component replacement performed during this reporting period do not involve unreviewed safety questions and are not expected to adversely affect the safe operation of this facility.

The results of all major parameter surveillance tests are shown in Table I.

TABLE I. REACTOR PARAMETER SURVEILLANCE MEASUREMENTS

<u>Date</u>	<u>Parameter</u>	<u>Value</u>
7/21/80	Fine Control Rod Reactivity Worth	0.36% $\frac{\Delta\kappa}{\kappa}$
7/18/80	Coarse Control Rod Reactivity Worth	1.17% $\frac{\Delta\kappa}{\kappa}$
7/18/80	Safety Rod #1 Reactivity Worth	1.17% $\frac{\Delta\kappa}{\kappa}$
7/18/80	Safety Rod #2 Reactivity Worth	1.15% $\frac{\Delta\kappa}{\kappa}$
1/15/81	Safety Rod #1 Drop Time	120 msec
1/15/81	Safety Rod #2 Drop Time	160 msec
1/15/81	Coarse Control Rod Drop Time	130 msec
10/17/80	Total Excess Reactivity @20°C	0.30% $\frac{\Delta\kappa}{\kappa}$

2. OPERATIONAL SUMMARY

Utilization by Category:

(a) Support of Nuclear Engineering Courses 16.40 hrs.

(b) Preventive Maintenance 5.53 hrs.

Total Operating Hours 21.93 hrs.

Total Watt - Hours of Operation 22.08 watt-hrs.Average Power Level of Operation 1.01 wattsNumber of Reactor Startups 56

3. UNSCHEDULED SHUTDOWNS

<u>Date</u>	<u>Type</u>	<u>Cause</u>	<u>Corrective Action</u>
2/24/81	Chan. #2 High Level Trip	Operator Error	Re-instruct Student Operator
2/27/81	Chan. #3 High Level Trip	Operator Error Switching Meter Scales	Re-instruct Student Operator
2/27/81	Chan. #2 High Level Trip	High Level Trip Off Calibration	Re-calibrated Trip
2/27/81	Chan. #3 High Level Trip	Operator Error Switching Meter Scales	Re-instruct Student Operator
3/2/81	Chan. #2 High Level Trip	Operator Error	Re-instruct Student Operator

Summary

(a) Instrument Scrams	1
(b) Operator Error	<u>4</u>
Total Unscheduled Shutdowns	5

4. CORRECTIVE MAINTENANCE AND COMPONENT REPLACEMENT

Corrective maintenance and component replacement performed as normal maintenance of the Texas A&M University AGN-201M reactor and instrumentation during this reporting

period are summarized as follows:

- (a) 7/18/80 - Channel #2, low level trip, noted inoperative during prestart-up checks. Optical trip, bulb was found burned out. Replacement was made using a spare. The channel was tested and found satisfactory.
- (b) 10/17/81 - Channel #2, calibration drifting as noted in control rod readings out/in. Replaced calibration battery. Channel #2 retested satisfactory.
- (c) 1/13/81 - During re-energizing channel #2 after the Christmas holiday it malfunctioned. Several tubes, V-4, V-5, V-14, V-17, were found defective. After replacement of tubes channel #2 functioned satisfactorily.
- (d) 5/7/81 - De-energized Channel #2 due to oscillations and spurious trips. Repairs were not made since Reactor Supervisor was not available.
- (e) 7/20/81 - Channel #2, repaired and placed back in service. Repair consisted of replacing V-15.

The corrective maintenance and component replacement performed during this reporting period have no impact on the safe operation of the reactor facility and do not change the description of the facility as submitted in the license application and amendments thereto.

5. (a) REACTOR MODIFICATIONS

No modifications were made to the Texas A&M University AGN-201M reactor during this reporting period.

5. (b) CHANGES TO PROCEDURES

No procedure changes have been made during this reporting period.

5. (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 subsequent to 10 CFR 50 paragraph 50.59, during this reporting period; therefore, no safety evaluations were required.

7. SUMMARY OF RADIOACTIVE EFFLUENT RELEASES

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

8. ENVIRONMENTAL RADIOLOGICAL SURVEYS

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

9. RADIATION EXPOSURE

No reactor facility personnel or visitors received radiation exposures greater than 100 mrem (50 mrem for persons under 18 years of age) during this reporting period.

10. REACTOR SAFETY BOARD ACTIONS

- (a) 1/23/81, The Reactor Safety Board performed the yearly review of the AGN-201M Facility Security Plan. The board agreed that the plan was still satisfactory for its intended purpose.
- (b) 1/23/81, The Reactor Safety Board reviewed audits previously performed.

11. MISCELLANEOUS

The reactor supervisor Mr. J. B. Zgliczynski resigned in October 1980 and left the University. This vacant position has not been filled as yet, but we are actively seeking a qualified person for the position.