ANNUAL REPORT

August 1, 1983 - Jult 31, 1984

ILLINOIS LOPRA REACTOR

Facility License R-117

I. SUMMARY OF OPERATING EXPERIENCE

The LOPRA was scheduled for operation a total of 66 hours and was in actual operation a total of 34.8 hours. Usage was slightly less than for the previous year. The present use includes an 'Approach to Critical' experiment in which the TRIGA is used as the external source of neutrons, measurements of the reactivity worth of the control rods using 1/M relationships, and power calibrations in which the loss of reactivity is related to the power level because of the negative temperature reactivity coefficient. The 'Approach to Critical' experiment is conducted as part of a one-week training program for nuclear power plant operators. The types and percentage of usage for the above period was:

Operator Training (power plant personnel)	67%
Student Experiments	24%
Surveillance Requirements	9%

II. TABULATION OF OPERATION

Hours Critical* and Energy	34.8 hours	0.00005 MW-hrs

*This includes times for loading fuel elements during the approach to critical experiments. The actual critical time was about 5.5 hours or 16% of the above time.

III. EMERGENCY SHUTDOWNS AND INADVERTENT SCRAMS

There were no inadvertent scrams or emergency shutdowns during the period.

IV. MAINTENANCE

The only significant maintenance was the re-wiring of the electromagnets of the two safety rods on June 29, 1984. These wires are stressed when the safety rods are manually removed from the core and the positioned. On the above date, it was noted that one of the wires was broken since the electro-magnet could not be energized. Since it was surmised that the same thing could happen at the other magnet, both of the magnets were re-wired.

V. CONDITIONS UNDER SECTION 50.59 of 10 CFR 50

There were no changes to procedures or experiments during this period. With the present position of the assembly, the excess reactivity is only 5-6¢. Thus the maximum power that could be attained is 3-4 kilowatts.

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VI., VII., VIII. RADIOACTIVITY

Because of the low power and infrequent use of the LOPRA, its operation does not contribute to the release of effluents. Personnel radiation exposures for the laboratory are given in the Annual Report for the Advanced TRIGA Reactor, License No. R-115, Docket No. 50-151, dated February 8, 1984.

University of Illinois
at Urbana-Champaign

Nuclear Engineering Program

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Urbana
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September 21, 1984

U. S. Nuclear Regulatory Commission
Documents Control Room
Washington, D. C. 20555

Dear Sir:

SUBJECT: Annual Report, LOPRA Reactor
License No. R-117
Docket No. 50-356

The following is written to comply with the requirements of Section 6.7.f. of the Technical Specifications and the conditions of 50.59 of 10 CFR 50. The outline follows the numbered sequence of Section 6.7.f. of the Technical Specifications.

Yours truly,

Gerald P. Beck

Gerald P. Beck, Reactor Supervisor

James F. Stubbins

James F. Stubbins, Chairman
Nuclear Reactor Committee

George H. Miley

George H. Miley, Chairperson
Nuclear Engineering Program

Attachment

Copy: Region III, USNRC

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