

ANNUAL REPORT
August 1, 1988 - July 31, 1989
ILLINOIS LOPRA REACTOR
Facility License R-117

I. SUMMARY OF OPERATING EXPERIENCE

The reactor was scheduled for operations a total of 36 hours and was in actual operation a total of 16.0 hours. Scheduled time is less this year because no maintenance and no laboratory measurements were performed other than those which are a part of the Student Experiments. Student Experiments include an "Approach to Critical" fuel loading experiment in the LOPRA and the determination of Control Rod Worth by sub critical multiplication. The time involved with Surveillance Requirements includes power calibrations, control rod worth determinations and fuel inspections. Scheduled time includes time for activities such as fuel inspections which don't require actual operation of the LOPRA. Over 99.9 % of the energy listed in Section II was generated during the two power calibrations performed during this reporting period. No maintenance was required during this time reporting period. A large amount of maintenance was performed in the last two reporting periods. This was performed in anticipation of re-licensing the LOPRA in November of 1989.

Maintenance	0 %
Student Experiments	44 %
Surveillance Requirements	56 %
Laboratory Measurements	0 %
Total	100 %

II. TABULATION OF OPERATIONS

Hours Critical* and Energy 16.0 hours 6.19 kW-hrs

* This time includes that for loading fuel elements during the Approach to Critical experiment and sub-critical time during the control rod calibration. The control rods are calibrated using sub-critical multiplication so that a large portion of the experiment is done with the reactor sub-critical. The actual critical time was about 4.5 hours or 28% of the above time.

III. EMERGENCY SHUTDOWNS AND INADVERTENT SCRAMS

There were no unplanned scrams or emergency shutdowns during this reporting period.

IV. MAINTENANCE

There were no significant items of maintenance performed during this reporting period.

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V. CONDITIONS UNDER SECTION 50.59 OF 10 CFR 50

There were no changes to procedures or new experiments during this period. The excess reactivity of the LOPRA core was increased from 22 cents to 26 cents during this reporting period. It is felt that this increase in excess reactivity is due to the change in orientation which occurs in the core when fuel is loaded back into the core during the Approach to Critical Experiment. This increase leaves the excess reactivity well below the maximum Technical Specification limit of 60 cents.

VI., VII., VIII., RADIOACTIVITY

Because of the lower 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 29, 1988.