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March 29, 2002

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop O-5 C12
Washington, DC 20555-0001

Re: Docket No. 50-134
License R-61
Annual Report for 2001

In accordance with the technical specifications for the WPI Nuclear Reactor Facility (License R-61), I am submitting the Annual Operating Report for 2001.

The WPI reactor is a non-power, university-based, teaching reactor. It continues to be used primarily in the academic mission of Worcester Polytechnic Institute, for the instruction of students, and in occasional scholarly research.

Please contact me if further information is required.

Sincerely,

Stephen J. LaFlamme,
Director, Nuclear Reactor Facility

Cc: U.S. Nuclear Regulatory Commission
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2001 Annual Operating Report

Worcester Polytechnic Institute
Nuclear Reactor Facility

License R-61
Docket No. 50-134

I. Operations Summary

(a) changes in facility design

There were no changes in facility design during 2001.

(b) performance characteristics

The operation of all reactor safety system components was normal during 2001. Performance of the fuel was also normal.

(c) changes in operating procedures

The Fuel Unloading Procedure, OP-03, and the Standard Core Configuration Reload Procedure, OP-04, were modified to reduce the number of inadvertent reactor trips during fuel movements. The Radiation Health and Safeguards Committee approved the changes in July 2001. Minor changes were also made to the Checkout and Operation Procedure, OP-01, which were approved by the Radiation Health and Safeguards Committee in October 2001.

(d) abnormal results of surveillance tests and inspections

There were no unusual findings from the performance of surveillance tests and inspections.

(e) personnel changes in reactor facility director, health physicist, or radiation, health, and safety committee members

There were no personnel changes in 2001.

II. Power Generation (kilowatt-hours)

2001 Output:	192.2
Total LEU-Fuel:	2100.2
Total Reactor:	9514.2

III. Unscheduled Shutdowns

There were four unscheduled shutdowns during 2001. Of these, one was due to an electrical transient caused by inadvertent disturbance of signal cables above the reactor during fuel movement. The console operator had also neglected to increase the scale of the instrument as required by the newly changed procedure, and so the change was reviewed with the operator. One of the trips was due to movement of the neutron source too close to the Log-N CIC following blade movement prior to a portion of the core reloading, which generated a false period trip signal. The third unscheduled shutdown was caused when an operator down ranged one of the Nuclear Instrumentation Channels during a power reduction too early. The range was changed from approximately 10% of 10 kW, to 100% of 1 kW, which caused an electrical spike in the channel to greater than the trip set point. The operator was cautioned to wait until approximately 5% of the higher setting prior to down ranging. The fourth unscheduled shutdown was caused when one of the Nuclear Instrumentation Channels failed to indicate properly during a startup. Instrumentation Channel 2 was indicating 60% of the 1 W scale while Channel 1 remained at 0% of the 0.1 W scale. While the operator was in the progress of stopping the power increase to determine the cause, the Channel 1 picoammeter generated a trip signal at approximately 115% of the 0.1 W scale. Circuit wiring connections were checked for tightness, and no problems were found. The cause, therefore, was assumed to be related to the positioning of the manual range switch, which apparently prevented the indication from operating, and the problem has not recurred. None of the scrams had any safety significance given the scope of the facility, and all were related to activities involving its teaching and training mission.

IV. Maintenance

No corrective maintenance was performed on safety related systems or components during 2001.

V. Changes, Tests, and Experiments Pursuant to 10CFR 50.59

There have been no changes to facility design, or new tests and experiments, requiring evaluations pursuant to 10CFR 50.59.

VI. Radioactive Effluents Release

Liquid effluent releases have been near background and well within 10CFR20 release limits. Gaseous Ar-41 has been released in trace amounts that are conservatively calculated to be well within 10CFR20 release limits, and we have verified level 1 compliance using the EPA COMPLY Code.

End