



WORCESTER
POLYTECHNIC
INSTITUTE

Leslie C. Wilbur
Nuclear Reactor Facility
100 Institute Road
Worcester, MA 01609-2280
(508) 831-5276
(508) 831-5236
FAX: (508) 831-5680
<http://www.wpi.edu>

January 28, 1997

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

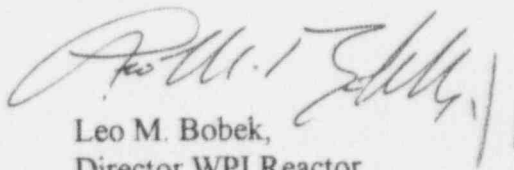
Re: Docket No. 50-134
License R-61
Annual Report for 1996

In accordance the technical specifications for the WPI Nuclear Reactor Facility (License R-61), I am submitting the Annual Operating Report for 1996.

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,


Leo M. Bobek,
Director WPI Reactor

AP/20

9702120316 961231
PDR ADOCK 05000134
R PDR

120050

1996 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 1996.

(b) *Performance Characteristics*

The operation of all reactor safety system components were normal during 1996. Performance of fuel was also normal. One non-safety system related component, the Ar-41 monitor, has been inoperable during the year. This system is designed to monitor Ar-41 gas releases above 10% (1 kW) operations. The system is not required by technical specifications. It is referenced in both the FSAR and SER for the reactor. Because of the small production of Ar-41 (much less than 10CFR 20 limits), an evaluation is currently underway to determine the need for this system.

(c) *Changes In Operating Procedures*

Only one change has been made to operating procedures during 1996. The Reactor Check-Out and Operation Procedure OP-1 has been modified to include a specific check to assure the safety system annunciator panel is operational. This is a technical specification requirement that has been previously satisfied indirectly by observation during performance of the reactor check-out procedure. The change to the procedure provides a specific documented check.

(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*

Two members have retired from the Radiation Health and Safeguards Committee. One is the Provost for WPI, who was replaced in July. A professor from the biology department resigned as of April. Another professor from that department has volunteered to serve on the committee.

II. Power Generation (kilowatt-hours)

1996 Output:	396.9
Total LEU-Fuel :	927.4
Total Reactor:	8341.4

III. Unscheduled Shutdowns

There were seven unscheduled shutdowns during 1996. Of these, three were due to inadvertent disturbance of signal cables while the reactor was sub-critical and four were due to operator or trainee manual-range switching errors on the linear power channels. None of the scrams had any safety significance given the scope of the facility and the majority were due its teaching and training mission.

IV. Maintenance

No corrective maintenance was performed on safety related systems or components during 1996.

V. Changes, Tests, And Experiments Pursuant To 10CFR 50.59

Two safety evaluations pursuant to 10CFR 50.59 are proceeding for facility changes. One is to determine the need of the Ar-41 monitor as previously described in section I (b) of this report. The second is to evaluate the safety significance, if any, for the installation of lead shielding above the reactor.

VI. Radioactive Effluents Release

There have been no measurable releases of radioactivity above background for liquid effluent releases. Gaseous Ar-41 has been released in trace amounts that are conservatively calculated to be well within 10CFR 20 release limits.

End