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January 3, 1983

Director of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Docket No. 50-134
ANNUAL REPORT

Dear Sir:

During the past year there have been no substantive changes in facility design. A new high voltage monitor was designed, built, and put in service, but otherwise our equipment and fuel performance remain unchanged from previous years. There were no unusual occurrences and no abnormal radiation exposure to personnel. Our annual major inspection and overhaul of the reactor control system was completely routine and all systems tested within specifications and appear in excellent condition.

The personnel assigned to our Radiation, Health, and Safeguards Committee (RHSC) has varied over the year but not by employment category. For example, the WPI Director of Physical Planning and Plant Services, an RHSC member, retired and his acting replacement was appointed to the RHSC. A new Director has now been employed and he has replaced the acting Director on the RHSC. Campus associated physicians are changed periodically but the current office holder is a member of the RHSC.

Our power generation record is determined when we complete a recorder chart. The reactor is estimated to have produced about 300 kw hr during the past year but the precise figure is not readily available until the current chart is completed and analyzed.

During 1982, there were a total of 9 unscheduled shutdowns. Two of these were associated with the installation of a new high voltage monitor which was subsequently adjusted and now operates well. One scram occurred when an auxiliary neutron flux monitor was jarred during fuel reloading at the completion of our annual maintenance operation. Three of the 9 scrams were caused by noisy electronics and replacement of electronic components cleared the problems. Three scrams were believed caused by very short duration noise spikes which caused interruption of magnet current but failed to show up on any other instruments. These occurrences have been observed before over the years, are usually widely separated in time, and are too infrequent to cause a serious problem. The cause is unknown.

At the present time we have 3 active SROs, all staff members, and one student RO. A student RO currently away from the campus is expected to return and requalify this spring. Two students are in RO training.

Our student enrollment in the nuclear course this year was down by about a factor of two to about 20 students entering our elective sequence. We expect about 8 of these to complete at least 4 courses, and these individuals will probably

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continue on in graduate or industry positions associated with nuclear power.

Washburn Laboratory, which houses the WPI Reactor Facility, is about to undergo extensive remodeling. We do not expect to be seriously affected by the changes, except for some loss of storage space, and the possibility that we may have to limit maximum power to 1 kw for a time. The NRC will be kept informed of any substantive changes, and we have made arrangements to insure that our security and emergency plans will remain fully operational.

We are still awaiting final disposition of our license renewal request submitted in 1979 but have received assurances that the processing is going forward and issue of a new license is imminent.

If we can furnish any further information, please do not hesitate to contact us.

Very truly yours,



L. C. Wilbur, Professor of
Mechanical Engineering
and

Director, Nuclear Reactor Facility

LCW/ns

cc: Dean R. E. Bolz
Prof. D. N. Zwiep
Prof. J. A. Mayer
Prof. R. Goloskie