



WORCESTER  
POLYTECHNIC  
INSTITUTE

50-134

October 4, 1985

Worcester  
Massachusetts 01609  
(617) 793-5000

Secretary of the Commission  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

\*85 OCT -9 A10:22

OFFICE OF LEGAL COUNSEL  
DOCKETING & SERVICE  
BRANCH

Re: Facility Operating License R-61

Dear Sir:

This is written in response to your Order to Show Cause dated September 27, 1985. The Worcester Polytechnic Institute Open Pool Reactor has a normal core loading of 24 elements and is authorized to use two different types of elements, 10 plate and 18 plate. We have stored outside the core one standard 10 plate element for a replacement spare, one 10 plate element with 8 individually removable plates for use in critical experiments, and two 18 plate elements. The present core is composed entirely of 10 plate elements.

The WPI reactor is used primarily as a teaching aid, and student laboratory and project work varies with student interest. Our two eighteen plate elements are used on demand in the core to demonstrate how their nuclear characteristics differ from the 10 plate elements, and the removable plate element is used to approach critical plate by plate in loading to other than "standard" core configurations. Such experiments have been performed with students in recent years. Thus both of the 18 plate elements and the removable plate element have been in the reactor at power and have been irradiated.

In summary, our understanding is that our standard 10 plate element may be retained as a spare, and the other three elements, used sporadically in critical experiments, constitute irradiated fuel. If this interpretation of the Order is correct, we are already in compliance with it and no fuel shipments are necessary. If we are incorrect in these assumptions, please notify us.

Sincerely,

*L. C. Wilbur*

L. C. Wilbur, Professor of  
Mechanical Engineering  
and Director,  
Nuclear Reactor Facility

8510230152 851004  
PDR ADOCK 05000134  
P PDR

LCW:ama

cc: Executive Legal Director, USNRC Mr. John DOSA, USNRC  
Dean R. Gallagher, Mr. T. Newton  
Professors D. N. Zwiep, and J. A. Mayer

COMMONWEALTH OF MASSACHUSETTS  
Worcester SS

Signed and sworn before me by Leslie C. Wilbur this 4th day of October 1985

*Helen L. Bugdenovich*

Helen L. Bugdenovich, Notary Public



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

EDO PRINCIPAL CORRESPONDENCE CONTROL  
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FROM:

DUE:

EDO CONTROL: 001082  
DOC DT: 10/04/85  
FINAL REPLY:

L. C. WILBUR  
WORCESTER POLYTECHNIC INSTITUTE

TO:

SECRETARY

FOR SIGNATURE OF:

\*\* GREEN \*\*

SECY NO: 85-861

DESC:

RESPONSE TO 9/27/85 ORDER TO SHOW CAUSE RE  
REDUCTION OF HEU AT NON-POWER REACTORS

ROUTING:

DENTON  
TAYLOR  
MURLEY  
GCUNNINGHAM/BURNS  
PDR

DATE: 10/11/85

ASSIGNED TO: NMSS

CONTACT: DAVIS

SPECIAL INSTRUCTIONS OR REMARKS:

FOR APPROPRIATE ACTION.  
COORDINATE WITH ELD (STEVE BURNS)

ACB

## CORRESPONDENCE CONTROL TICKET

SECY NUMBER: 85-861

LOGGING DATE 10/10/85

## OFFICE OF THE SECRETARY

ACTION OFFICE: EDO

AUTHOR: L. C. Wilbur

AFFILIATION: Worcester Polytechnic Inst--Mass

LETTER DATE: 10/4/85

FILE CODE \_\_\_\_\_

ADDRESSEE: SECY

SUBJECT: Facility operating lic R-61--order to show cause dtd 9/27/85

ACTION: Appropriate

DISTRIBUTION: RF

SPECIAL HANDLING: None

SIGNATURE DATE:

FOR THE COMMISSION . Champ

Rec'd OH. EDO  
Date.....10-11-85  
Time.....1:45 p.m.