

UNIVERSITY OF MASSACHUSETTS LOWELL  
ONE UNIVERSITY AVE.  
LOWELL, MA 01854-2881

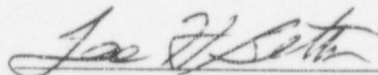
June 6, 1997

Theodore S. Michaels, Senior Project Manager  
PDND/DRPM/NRR Mail Stop 11B20  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Docket No. 50-223  
License No. R-125

Dear Mr. Michaels,

This letter confirms commitments made in telephone discussions to determine void coefficient in the Low Enriched Uranium (LEU) core when it is being installed and tested at the University of Massachusetts Lowell, Research Reactor. A revised LEU Conversion Plan is attached. The methodology will be to introduce a void of known volume in the central flux trap and measure the reactivity change. This will then be related to the analytical determination of void coefficient of reactivity



Lee H. Bettenhausen  
Reactor Supervisor

Enclosures: As Stated

cc w/enclosures: See Next Page

9706190321 970606  
PDR ADDCK 05000223  
P PDR

190031



1/1  
Aφ20

U.S. Nuclear Regulatory Commission

Docket No. 50-223

cc:

Desk Copy  
U.S. Nuclear Regulatory Commission  
Mail Stop 11B20  
Washington, D.C. 20555-0001

Mayor of Lowell  
City Hall  
Lowell, Massachusetts 08152

Office of Attorney General  
Environmental Protection Division  
19th Floor  
One Ashburton Place  
Boston, MA 02108

REACTOR SAFETY SUBCOMMITTEE MEMBERS  
University of Massachusetts Lowell:

John White  
Warren Church  
Mary Montesalvo  
George Chabot  
Gunter Kegel  
Lee Bettenhausen  
Kanti Prasad

David R. Medich

CONVERSION FROM HEU FUEL TO LEU FUEL  
UNIVERSITY OF MASSACHUSETTS LOWELL RESEARCH REACTOR

Table 12.6.1

LEU CONVERSION PLAN  
PROPOSED SEQUENCE OF WORK

	LEU	NORMAL
1. REGULATING BLADE FINAL CONSTRUCTION AND APPROVAL	X	
2. PLAN REVIEW AND APPROVAL	X	
3. SAFETY AND DECON EQUIPMENT	X	
4. SCHEDULE FOR FINAL REACTOR SHUTDOWN		X
5. HEU FUEL COOLDOWN REVIEW		X
6. HEU FUEL STORAGE SEQUENCE		X
7. MAKE-UP DEMINERALIZER CAPACITY CHECK/ RESIN CHANGE		X
8. CLEAN-UP DEMINERALIZER CAPACITY CHECK/ RESIN CHANGE		X
9. RECEIPT OF GRAPHITE REFLECTORS	X	
10. STORAGE SEQUENCE FOR GRAPHITE REFLECTORS	X	
11. RECEIPT OF LEU FUEL	X	
12. STORAGE OF LEU FUEL	X	
13. GRAPHITE TEST FIT	X	
14. LEU FUEL TEST FIT	X	
15. POOL GATE INSTALLATION		X
16. POOL DRAIN		X
17. GRID BOX RADIATION SURVEY		X
18. GRID BOX INSPECTION		X
19. REGULATING BLADE REMOVAL AND STORAGE	X	
20. NEW REGULATING BLADE INSTALLATION	X	
21. NEW REGULATING BLADE TESTING	X	
22. GATE REMOVAL AND POOL REFILL		X
23. GRAPHITE LOADING		X
24. SAFETY BLADE WITHDRAWAL CHECKS		X
25. RESET ALARM AND SCRAM SETPOINTS	X	
26. LEU FUEL LOAD AND CRITICALITY DETERMINATION	X	
27. PRIMARY SYSTEM FLOW CHECK WITH FULL CORE	X	
28. BLADE WORTH DETERMINATIONS		X
29. EXCESS REACTIVITY DETERMINATION		X
30. VOID COEFFICIENT DETERMINATION	X	
31. NEGATIVE TEMPERATURE COEF. DETERMINATION	X	
32. THERMAL FLUX MAPPING	X	
33. LOW POWER CALIBRATION-CALORIMETRIC		X
34. N-16 MONITOR CALIBRATION	X	
35. HIGH POWER CALIBRATION - CALORIMETRIC		X
36. RADIATION MONITORING LEVELS CHECK	X	
37. PHYSICS BEAMPORT PARAMETERS CHECK	X	
38. XENON MEASUREMENTS	X	
39. NRC AND DOE FINAL REPORTS	X	

REV 1  
6/6/97