

September 5, 2002

Dr. John A. Bernard, Director
Nuclear Reactor Laboratory
Massachusetts Institute of Technology
138 Albany Street
Cambridge, MA 02139-4296

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION (TAC NO. MB3761)

Dear Dr. Bernard:

We are continuing our review of your amendment request for Amended Facility Operating License No. R-37 for the Massachusetts Institute of Technology Research Reactor which you submitted on November 21, 2001. During our review of your request, questions have arisen for which we require additional information and clarification. Please provide responses to the enclosed request for additional information within 45 days of the date of this letter. In accordance with 10 CFR 50.30(b), your response must be executed in a signed original under oath or affirmation. Following receipt of the additional information, we will continue our evaluation of your amendment request.

If you have any questions regarding this review, please contact me at (301) 415-1127.

Sincerely,

/RA/

Alexander Adams, Jr., Senior Project Manager
Research and Test Reactors Section
Operating Reactor Improvements Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket No. 50-20

Enclosure: As stated

cc w/enclosure: Please see next page

Massachusetts Institute of
Technology

Docket No. 50-20

cc:

City Manager
City Hall
Cambridge, MA 02139

Department of Environmental
Quality Engineering
100 Cambridge Street
Boston, MA 02202

Test, Research, and Training
Reactor Newsletter
University of Florida
202 Nuclear Sciences Center
Gainesville, FL 32611

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ADAMS ACCESSION NO: ML022410375

TEMPLATE #: NRR-088

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DATE	08/ 30 /2002	09/ 04 /2002	09/ 05 /2002

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REQUEST FOR ADDITIONAL INFORMATION
MASSACHUSETTS INSTITUTE OF TECHNOLOGY RESEARCH REACTOR
DOCKET NO. 50-20

1. In addition to the elimination of the annual calibration, your proposal would eliminate calibration of the fission converter tank coolant level channel when a new measuring device is installed or when the current device repaired. Please justify the elimination of the calibration requirement for initial installation and after repair or modify your proposed TS to include these calibrations.
2. Please describe how the actuation position of the float switch is initially set if the position of the switch is not adjustable as stated in your application. Have the calibrations performed to date show any change in the set point of the switch? Please describe the functional test of the coolant level float switch and how that test would detect a failure of the float switch.
3. Please describe if there are any other methods to detect a failure of the fission converter tank that would result in loss of coolant.
4. Is it possible to confirm proper operation of the switch at times when the tank top is removed for other reasons?
5. The TS use two units for conductivity. TS 6.6.2.6 uses $\mu\text{mho}/\text{cm}$ while your proposed changes to TS 6.6.3.4 uses $\mu\text{S}/\text{cm}$. Please make the units consistent in the TSs.
6. The data in the literature for your calculation of the pH – conductivity appears to be for light water systems. You state that heavy water values are not expected to be markedly different. What is the bases of this statement? You have been taking pH and conductivity measurements of fission converter primary coolant. How much data do you have and does the data support your calculated pH – conductive curves?
7. Given your calculations, what does it mean if conductivity falls to a very low level such as $0.04 \mu\text{S}/\text{cm}$?

Enclosure