

February 5, 2004

EA-03-155

Dr. David E. Moncton, Director  
Nuclear Reactor Laboratory  
Massachusetts Institute of Technology  
138 Albany Street  
Cambridge, MA 02139-4296

SUBJECT: REPLY TO NOTICE OF VIOLATION — REQUEST FOR ADDITIONAL  
INFORMATION RE: EA-03-155

Dear Dr. Moncton:

This letter responds to your letter of November 25, 2003, which contained a reply to a Notice of Violation (NOV) issued to the Massachusetts Institute of Technology (MIT) on October 31, 2003, (EA-03-155). The NOV was an enclosure to Special Inspection Report No. 50-20/2003-203 dated October 31, 2003, which was conducted to review an occurrence involving an inattentive reactor operator which was reported to the Nuclear Regulatory Commission (NRC) on June 30, 2003. On July 3, 2003, the NRC issued a Confirmatory Action Letter (CAL) (CAL No. NRR-03-001) to MIT to confirm our understanding of actions taken by MIT in response to this occurrence. Your letter of November 25, 2003, proposed changes to some of the actions discussed in the CAL.

We are continuing our review of your letter. During our review, questions have arisen for which we require additional information and clarification. Please provide responses to the enclosed request for additional information within 30 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 letter and proposed changes to some of the actions discussed in the CAL.

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  
New, Research and Test Reactors 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.: ML040330976

TEMPLATE #: NRR-106

\*Please see previous concurrence

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

1. Your proposed corrective actions appear to focus on counteracting degraded alertness through work activities and alarms. Although these actions can have positive effects on operator alertness, such effects are generally short-lived and may simply mask continued degradation in an operator's alertness and decision-making abilities. In addition, these actions do not address the underlying causes of degraded alertness, such as inadequate rest and circadian cycle effects on alertness (e.g., inadequate adaptation to night work). What corrective actions have you taken to address these underlying causes of degraded alertness?
2. One of your proposed corrective actions involves an audible alarm that needs to be reset every 30 minutes. What is the timing of the alarm (i.e., when does the alarm actuate, concurrent with logs or between logs)? What steps have you taken to ensure that this alarm does not become an "alarm clock" (i.e., that operators do not become dependent on the alarm to rouse them from a state of depressed vigilance)? How do you ensure that the alarm does not become a distraction during reactor evolutions requiring the console operator to focus on reactor operation.