



**NUCLEAR REACTOR LABORATORY**  
AN INTERDEPARTMENTAL CENTER OF  
MASSACHUSETTS INSTITUTE OF TECHNOLOGY



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Activation Analysis  
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November 25, 2003

U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555  
Attn: Document Control Desk

Subject: Reply to a Notice of Violation, EA-03-155

Dear Sir or Madam:

The Massachusetts Institute of Technology (License No. R-37, Docket No. 50-20) hereby submits this 30 day response to the above notice of violation. The format of this report conforms to that specified in the notice.

1. Reason for Violation: The reason for the violation is as stated in our 10 day report of the occurrence that was submitted on 8 July 2003.
2. Corrective Steps Taken/Results Achieved: The MIT Research Reactor is currently operating on a normal schedule, including weekends, subject to the corrective actions listed in the 10 day report and to the stipulations of the Confirmatory Action Letter (CAL) dated 3 July 2003. The CAL actions that are presently in effect are:
  - a) The reactor operator who became inattentive is currently not allowed to operate the MIT Research Reactor unless a second licensed operator is present in the control room.
  - b) Whenever a reactor operator is alone and at the controls of the MIT Research Reactor, positive contact is made with the operator approximately every half hour.
  - c) Item 3 of the CAL, which included Safeguards Information, has been implemented.

Actions listed in paragraph 9(a) and 9(b) of the 10 day report that were not complete at the time of the report's submittal have now been completed. These include:

- d) Item a(iv) – Input was elicited from all licensed personnel on possible methods for ensuring alertness.

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- e) Item b(ii) – The ROR was reviewed by the MITRSC Standing Subcommittee on 9 July 2003 and 7 August 2003. A report was made to the full committee on 29 October 2003.
- f) Item b(iii) – The SRO in question underwent a full medical exam. Medical causes were ruled out.
- g) Items b(iv and v) – Environmental surveys were conducted during the interval 7-11 July. No environmental causes were found.
- h) Item b(vi) – Methods for ensuring alertness other than the establishment of positive contact every thirty minutes have been identified. These are discussed under paragraph (3) below.

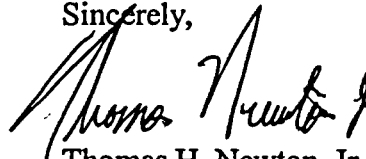
The result achieved to date through adherence to the above corrective actions is that there has been no recurrence.

3. Corrective steps that will be taken: It is requested that the provisions of the Confirmatory Action Letter issued 3 July 2003 regarding unaccompanied activities of the operator and certain positive controls, as well as some of the proposals discussed during the NRC's inspection be replaced by the actions discussed below, which we propose to implement. We note the following:
- a) The operator in question did not become inattentive through any deliberate action on his part. The measures we have adopted should prevent any recurrence of the issue identified in the NOV. We therefore request that the operator be permitted to resume licensed activities and operate the MIT Research Reactor in accordance with the original terms of his license.
  - b) The establishment of positive contact for the day shift (0800-1600) and swing shift (1600-2400) is not necessary because (1) people are not as prone to become inattentive during those hours and (2) there is considerable interaction with the person in the control room during these hours.
  - c) For the night shift (2400-0800) we propose the following alternative:
    - (i) Current practice is for reactor data to be logged manually every hour. We propose to separate the required data into two sections with manual entry being required for one portion on the hour and the other portion on the half hour. Thus, the operator will have some mental and physical activity every thirty minutes.

- (ii) A policy of shift rotation every 2-3 hours will be made the normal practice. (Note: There may be occasional actions that would preclude this. However, these provide mental stimulation.)
  - (iii) An audible alarm that has to be reset every 30 minutes has been installed and is in use. (Note: In the event of alarm failure, establishment of positive contact with the operator in the control room could be used as a substitute). This action has been in effect (in addition to the CAL action) since 24 September 2003.
- d) Operator training will include any protocols revised as a result of this incident.
4. Date of Full Compliance: The MIT Research Reactor has been operated in full compliance since operation was resumed on 24 September 2003. Actions 3(c)(i) and 3(c)(ii) above will have been implemented as of 1 December, 2003.

In addition to the above, we would like to express our concurrence with the written request to NRC by the senior reactor operator in question that his name be removed from any publicly available document and that an entry regarding this issue not be included in his licensing file. We believe that identifying the operator by name and placing a notation in his permanent record is inappropriate in the absence of any enforcement action against him.

Sincerely,



Thomas H. Newton, Jr.  
Acting Director of Reactor Operations



David E. Moncton  
Director

THN/gw

cc: USNRC - Senior Project Manager,  
NRR/ONDD  
USNRC - Region I - Project Scientist,  
Effluents Radiation Protection Section (ERPS)  
FRSSB/DRSS