

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



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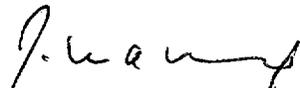
Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D.C. 20555

Subject: Response to Request for Additional Information (TAC No. MB 3760),  
License No. R-37, Docket No. 50-20

Dear Sir or Madam:

Enclosed is our response to the above-cited request. Please contact the undersigned if further information is required.

Sincerely,

  
John A. Bernard, Ph.D.  
Director

JAB/koc

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

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

**EXPLANATION OF REORGANIZATION OF  
MIT ENVIRONMENTAL HEALTH AND SAFETY PERSONNEL**

MIT has filed a proposed amendment to its reactor license (R-37) with the Nuclear Regulatory Commission ("NRC"). In the amendment, MIT states that there have been certain changes in the organization structure of MIT's environmental health and safety programs. Those changes include a shift in the reporting structure for the Reactor Radiation Protection Officer ("RRPO"), and which MIT personnel serve on the Reactor Safeguard Committee ("RSC"). The NRC has requested additional information regarding the license amendment request. Specifically, the NRC has asked for an analysis that indicates whether the changes represent a significant change in the commitment to radiation protection, how the responsibilities of the MIT RPO with respect to the MIT Reactor will be carried out, if the detail of supervision of the MIT Reactor RPO will significantly change, and if the change in the membership of the Reactor Safeguard Committee will result in a significant change in the technical expertise of the Committee. As will be explained in more detail below, the organization changes will help the RRPO and the RSC ensure greater safety at the MIT reactor, and will not have any significant impact on their ability to function.

To understand the changes and the impact they have on the RRPO and the RSC, MIT will set out the previous organization structure and the new organization structure. MIT will then discuss the reasons for the new organization structure and how it will help enhance safety at the MIT reactor.

Previous Organization Structure

Under the previous organization structure, MIT had three radiation programs, one for the MIT reactor, one for the rest of the MIT main campus, and one for the Bates Linear Accelerator. There was an associate radiation protection officer for each program. All three associate radiation protection officers reported to the MIT radiation protection officer, who was the director of the Radiation Protection Office. The Radiation Protection Office was one of five separate offices at MIT involved with environmental, health, and safety matters. The director of the MIT radiation protection office, along with the directors of three other environmental and health offices, reported to the director of the Environmental Medical Service. The director of the Environmental Medical Service in turn reported to the director of MIT Medical Department, who in turn reported to the Vice President for Human Resources. MIT's safety office was separate from the other four offices handling environmental and health related matters, and had a separate reporting structure from those other offices. The director of MIT's safety office reported to the Executive Vice President. The director of the safety office was a member of the Reactor Safeguard Committee as was the director of the Environmental Medical Service.

## New Organization Structure

Under the new organization, all of the five offices handling environmental, health and safety, including the safety office, were merged together in one environmental, health and safety office. In addition, the positions of associate radiation protection officer for the MIT reactor, the MIT campus, and Bates were each changed to deputy director, radiation protection program, for the MIT Reactor, MIT campus and Bates, respectively. Each of those persons also holds the position of Radiation Protection Officer for MIT Reactor, MIT campus, and Bates, respectively. Also, each reports directly to the director of the new consolidated EHS office. The director of the new consolidated EHS office reports to a new senior officer, the Managing Director of Environmental Programs and Risk Management/Senior Counsel, who in turn reports to the Executive Vice President.

## General Safety Analysis

The new organization structure provides some significant enhancements to MIT's efforts to ensure oversight of environmental, health and safety matter, both at the MIT reactor and generally across the MIT campus. By consolidating into one office the safety program together with the other four programs that provide environmental and health services, MIT will have a more coordinated environmental, health and safety effort. All of the programs have common goals and vision. There are clear roles and coordinated responsibility, promoting greater accountability.

In addition, the new EHS office reports to the Managing Director of Environmental Programs and Risk Management/Senior Counsel. As mentioned above, this is a new senior management position created by MIT to ensure that environmental, health and safety concerns get more prominent attention. Also as mentioned above, the Managing Director of Environmental Programs and Risk Management/Senior Counsel reports to the Executive Vice President. Under the previous structure, four of the five service programs reported to the Medical Department, which in turn reported to the Vice President for Human Resources. With the new structure, all of the EHS services, now housed in the consolidated EHS office, report to the Executive Vice President.

## Specific Safety Analysis related to MIT Reactor, Reactor RPO, and Reactor Safeguard Committee

### a. Commitment to radiation protection at the reactor and responsibilities of Reactor Radiation Protection Officer

The change in the organization structure does not change the commitment to radiation protection at the reactor. Under the previous organization structure, Mr. Frederick McWilliams was the Associate Radiation Protection Officer for the Reactor. Mr. Frank Masse was the Institute Radiation Protection Officer with responsibilities for managing all three radiation protection programs. Mr. Masse retired from MIT about the same time as the reorganization occurred. Under the new organization structure, Mr. McWilliams is the Radiation Protection Officer for the Reactor. Although Mr. Masse has retired, he has

agreed to provide radiation protection services to MIT as a consultant working at 40% time.

Mr. McWilliams' scope of responsibility and authority for radiation protection at the reactor has not changed at all as part of the change in organization. His job has not changed at all. The only change is to whom Mr. McWilliams reports. Previously, in his position as Associate Radiation Protection Officer for the reactor, Mr. McWilliams reported to the MIT Radiation Protection Officer, who in turn reported to the director of Environmental Medical Services. Mr. McWilliams now reports directly to the director of the EHS office, as do the Radiation Protection Officer for the rest of the MIT main campus and the Radiation Protection Officer for the Bates Linear Accelerator.

b. Responsibilities of MIT RPO

With the reorganization and retirement of Mr. Masse, the decision was made to eliminate the position of MIT Radiation Protection Officer because the three radiation programs are independent of each other and have functioned independently of each other for quite some time. The three radiation protection officers coordinate with each other and with the other deputy directors in the EHS office to ensure the same level of commitment to radiation protection as existed in the previous organization structure. All of them report to the director of the EHS office. With the new organization, MIT has the added expertise of the director of the EHS office, who is board certified in Industrial Hygiene and as a Safety Professional, with over thirty years of experience, 25 of which have been at academic institutions (Harvard University for 12 years and MIT for 13 years).

c. Supervision of MIT Reactor RPO

The detail of supervision for the MIT Reactor RPO will not change in the new organization. There is close coordination, when needed, among the three radiation protection officers. The director of the EHS Office is providing the same level of supervision of the Reactor RPO as occurred under the previous organization.

d. Change in membership of the Reactor Safeguard Committee

With the new organization structure, there is no change in the technical expertise of the Reactor Safeguard Committee. Both before and after the change in membership of the Reactor Safeguard Committee, radiation protection representation includes Mr. McWilliams, CHP (Reactor Radiation Protection Officer), Dr. Costa Maletokos, CHP (former Reactor Radiation Protection Officer), Mr. Frank Masse, CHP (former Institute Radiation Protection Officer and current consultant to the institute), and Mr. Ronald Thurlow, CHP (RPM, Seabrook Station). This constitutes four radiation protection professionals who are board certified within the specialty.

Under the previous organization structure, the director of the safety office was a member of the Reactor Safeguard Committee. Under the new organization structure, the director of the EHS office is a member of the Reactor Safeguard Committee. As mentioned

above, the director of the EHS office is board certified in Industrial Hygiene and as a Safety Professional. Also as mentioned above, the director of the safety office now reports to the director of the EHS office, and can be called upon as needed. This addition represents additional over site and expertise without changing any radiation protection expertise.

In addition, the Committee has access, as needed, to a certified occupational health nurse, a physician who is certified in occupational medicine, and a physician who specializes in radiology, all provided on-site by the MIT Medical Department.

The change in membership of the Reactor Safeguard Committee will not result in any significant change in the technical expertise of the Committee.

### Conclusion

The changes in organization and changes to the membership of the Reactor Safeguard Committee will not result in any significant change in the commitment to radiation protection at the Reactor, and will help enhance the level of safety at the MIT Reactor and generally at MIT.