

## NUCLEAR REACTOR LABORATORY

AN INTERDEPARTMENTAL CENTER OF  
MASSACHUSETTS INSTITUTE OF TECHNOLOGY



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J.A. BERNARD, JR.  
Director of Reactor Operations

March 9, 1990

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

Subject: Evaluation of Unreviewed Safety Question, 10 CFR 50.59(b)(2)  
Facility License No. R-37, Docket No. 50-20

Gentlemen:

The Massachusetts Institute of Technology Nuclear Reactor Laboratory is forwarding herewith a safety evaluation by the MIT Research Reactor Staff providing the bases for the determination that there are no unreviewed safety questions concerning the installation and operation of an experiment on the MITR-II.

The experiment is a boiling coolant chemistry loop which will be installed in the reactor core and which is described in the enclosed "Safety Evaluation Report for the BWR Coolant Chemistry Loop (BCCL)," Report No. MITNRL-031, dated March 9, 1989. The purpose of the experiment is to study water radiolysis under simulated BWR coolant conditions (normal and hydrogen water chemistry) with an overall objective of qualifying computer codes and contributing to the reduction of environmental degradation of materials in BWR plants.

Because experiments of this type are not described in the "Safety Analysis Report for the MIT Research Reactor (MITR-II)," Report No. MITNE-115, October 22, 1970, as amended, a safety review of the experiment has been conducted by the Project Personnel, the Reactor Staff, and the MIT Reactor Safeguards Committee, including a safety evaluation as to the existence of any unreviewed safety questions (Safety Review #0-89-20, dated December 20, 1989 enclosed). No unreviewed safety questions have been identified.

In accordance with 10 CFR 50.59(b)(2), evaluations of unreviewed safety questions have routinely been reported to NRC in the annual report required by paragraph 7.13.5 of the MITR-II Technical Specifications, Facility License No. R-37. Because of the unusual nature of this experiment, we are reporting the safety evaluation required by 10 CFR 50.59(b)(1) at this time rather than wait until the next MITR-II annual report, which will be issued in August 1990.

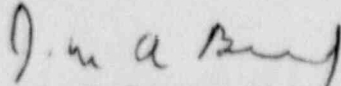
Our schedule calls for the initial installation of the BCCL on the reactor to occur in April 1990.

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If you should have any questions regarding the evaluation or any of the information furnished, we request that you contact us as soon as possible. It will be noted that the enclosed safety evaluation references two MIT documents. These are Safety Evaluation Report for the PWR Coolant Chemistry Loop (MITNRL-020) and a Safety Review, "PWR Coolant Chemistry Loop," (SR#0-86-9). Both have been previously submitted to NRC.

Sincerely,



John A. Bernard, Ph.D.  
Director of Reactor Operations  
MIT Research Reactor

Enclosures:

Safety Evaluation Report, March 9, 1989  
Safety Review #0-89-20, December 20, 1989

JAB:CRH

cc: MITRSC (with enclosures)  
USNRC - Region I - Chief,  
Reactor Projects, Section 3B  
USNRC - Region I - Project Engineer,  
Reactor Projects Section 3B  
USNRC - Senior Resident Inspector,  
Pilgrim Nuclear Station  
USNRC - Project Manager,  
Standardization and Non-Power Reactor Project Directorate