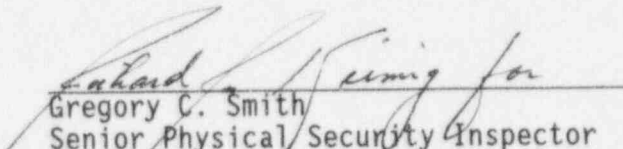


U.S. NUCLEAR REGULATORY COMMISSION
REGION I

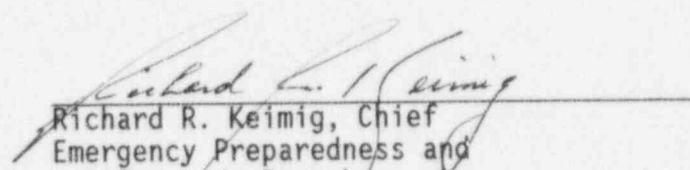
DOCKET/REPORT NOS. 50-20/95-04/R-37 and 70-938/95-02/SNM-986
LICENSEE: Massachusetts Institute of Technology
FACILITY: MIT Nuclear Reactor
INSPECTION AT: Cambridge, Massachusetts
INSPECTION DATES: October 31 and November 1, 1995

INSPECTOR:


Gregory C. Smith
Senior Physical Security Inspector
Emergency Preparedness and
Safeguards Branch
Division of Reactor Safety

11-14-95
Date

APPROVED:


Richard R. Keimig, Chief
Emergency Preparedness and
Safeguards Branch
Division of Reactor Safety

11-14-95
Date

Areas Inspected: Routine, unannounced nuclear material control and accounting and physical security, including: facility operation; storage and internal controls; and physical protection measures for special nuclear material (SNM) of moderate strategic significance.

Results: The licensee's programs were directed toward the protection of the public health and safety. No safety concerns or violations of NRC requirements were identified.

DETAILS

1.0 LICENSEE PERSONNEL CONTACTED

- H. Bondar, Administrative Officer
- * E. Lau, Assistant Superintendent of Operations
- T. Shubert, Senior Reactor Operator (SRO)
- Lt. J. Cappucci, Day Commander, MIT Campus Police
- D. Sponge, SRO
- S. Tucker, SRO

* attended the exit interview.

Other facility personnel were also interviewed.

2.0 FACILITY OPERATION - MATERIAL CONTROL AND ACCOUNTING

The inspector verified, through interviews with personnel and a review of records, that the licensee was maintaining and implementing procedures, which are documented in the "Manual of Procedures and Instructions Related to Accountability for Source, Special Nuclear, and Certain Other Materials," dated April 1989, for the control and accounting of nuclear materials. Written statements of responsibility and authority were established for those positions with responsibility for Special Nuclear Material (SNM). The inspector verified that the annual inventory required by 10 CFR 70.51(d) was in progress. The inspector also verified by direct observation that all reactor fuel was located in the reactor and that there were no spare new fuel assemblies onsite at the time of the inspection. New fuel assemblies, when onsite, are required by procedure to be stored in a vault located within the reactor containment prior to being put into the reactor. The only SNM at the facility that is stored outside the reactor containment compartment is low, enriched, material (1-3% enriched in U235) from old reactor experiments. This material is stored, also by procedure, in a locked and alarmed vault located within a restricted area in the facility. The inspector verified by direct observation that there was no loose SNM in the facility.

No deficiencies were identified in the licensee's Material Control and Accounting Program.

3.0 GENERAL PHYSICAL PROTECTION OF SPECIAL NUCLEAR MATERIAL OF MODERATE STRATEGIC SIGNIFICANCE

The licensee's program for physical protection of SNM of moderate strategic significance was reviewed by the inspector, and found to conform to NRC requirements and the licensee's implementing procedures. In particular, the inspector reviewed the security of the facility after-hours. The inspector arrived at the facility unannounced at approximately 8:00 p.m. on October 31, 1995. A senior reactor operator (SRO) in the control room requested the inspector to identify himself using an intercom at the front door of the facility. Subsequently, a second SRO arrived at the door, unlocked it, and granted the inspector access to the facility. The SRO then required the inspector to produce identification prior to escorting him into the facility restricted area and reactor containment. In the reactor control room, the

inspector reviewed the licensee's procedure for "Civil Disturbances Involving the Reactor Facility," Procedure 4.4.4.6, dated June 18, 1985, and discussed the procedure with the two SROs on duty. The inspector also noted that a duress system was available in the facility to summon assistance, if required. The inspector's interviews found that both SROs demonstrated a good knowledge of the requirements in the procedure and the duress system. The inspector's review of the procedure found that it was adequate for its intended function.

The next morning, the inspector interviewed the MIT Campus Police Day Commander and reviewed the campus police strategy for response to alarms at the reactor facility, reviewed logs of security rounds performed in the reactor facility during back shifts and verified that members of the campus police organization were receiving annual training on their responsibilities and duties for the reactor facility. The interviews and reviews disclosed that the Day Commander was knowledgeable of his security responsibilities for the reactor facility and that a security program implemented by the campus police for the reactor met or exceeded the requirements of the NRC-approved facility security plan.

4.0 EXIT INTERVIEW

The inspector met with the licensee representative denoted in Section 1.0 at the conclusion of this inspection on October 11, 1995. The scope and findings of the inspection were discussed at that time. The licensee acknowledged the findings.