U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 030-01868/92-001

Docket No. 030-01868

License No. 20-03857-06

Licensee: New England Medical Center Hospital
171 Harrison Avenue
Boston, Massachusetts 02111

Inspection At: New England Medical Center Hospital

Inspection Conducted: February 25, 1992

Inspector: _____ 4/21/92
Ihor Czerwinskyj, Health Physicist date
Medical Inspection Section

Approved by: _____ 4/21/92
Mohamed M. Shanbaky, Chief date
Medical Inspection Section

Inspection Summary: Special, unannounced inspection of activities authorized under NRC License No. 20-03857-06 (NRC Inspection Report No. 030-01868/92-001).

Areas Inspected: Licensee's waste handling and disposal practices, incidents and incident reports, handling of sealed sources, survey meter calibration, independent visits by inspector to several research labs to check on RAM waste handling.

Results: Within the scope of this inspection no violations were observed.

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Details

1. Persons Contacted

*Francis X. Masse', RSO
*Tom McMahon, Associate RSO
Joseph Palano, Health Physicist Technician
Grover Glatfelter, Health Physicist Technician
Michael Melisi, Health Physicist Technician
Dr. Rosoff, Principal Investigator
Dr. Rabson, Principal Investigator

*Present at Exit Interview

2. Licensee Waste Handling Program

Licensee utilizes the services of a waste broker (RADIAC) for radioactive waste disposal. Eight to ten 55 gallon drums and one liquid scintillation drum are picked up by the waste broker approximately once in every six weeks.

The various labs store their waste in containers lined with plastic bags. Once full, the Health Physics office is notified and a Health Physics Technician picks up the waste within two days. The waste is compacted before being placed in 55 gallon drums for ultimate disposal. There are five compactors in use at NEMC. Before compaction the waste is weighed to determine the charge to different departments. Several labs use radioactive material in medical research. Some of the waste from these laboratories is segregated and autoclaved in dedicated autoclaves using color changing tape to determine the proper temperature. Most of the waste handling is done by one H.P. technician.

The inspector examined the waste handling activities at several laboratories including Room No. Z-404 and Z-421. The inspector discussed with the principle investigators, Dr. Rosoff and Dr. Rabson, the waste handling procedures, spill control, and decontamination. Through these discussions and review of records, the inspector determined that the waste handling procedures were being followed. The inspector also learned that no radioactive spills had occurred at these laboratories as of the inspection date.

The inspector discussed with the researchers and the Deputy RSO the spill control procedures including reporting to the RSO, clean up, and followup to prevent recurrence. The inspector determined that radiological incidents were documented, reported to the RSO, and corrective action was taken (Details, Section 3).

3. Review of Incidents

The inspector reviewed the licensee's radiological incidents file from January 1991 through January 1992. The inspector noted that no major spills meeting the reporting threshold had occurred at the facilities, however, a minor spill at the radwaste compacting area was documented by the licensee. The licensee identified the apparent cause of the spill and the need for additional training to be given to the HP Technician operating the waste compactor. The inspector noted that the training was provided and, in addition, the HP Technician was subsequently reprimanded in September 1991. The inspector noted that no spills were documented since September 1991.

Another incident involved one of the other H.P. technicians. He was carrying a generally licensed 40 microcurie barium-133 sealed source using the standard laboratory remote handling tool to transport the source. The Ba-133 was used in a liquid scintillation counter. Since the use of the counter was discontinued and plans were finalized to dispose of the counter, the licensee removed the Ba-133 source from the counter. As a generally licensed source the Ba-133 sealed source could be left in the counter, but it is the practice of NEMC to remove such sources from old lab instruments and to dispose of the sources as radioactive waste. The technician, after removing the source from the instrument which was in the storeroom, carried it with remote tool to the radioactive waste storage room. Several secretaries were standing in the corridor. In order to get through he said that he was carrying a "hot source". One of the secretaries made a formal complaint to her supervisor about this incident. The incident was investigated and a report was filed in the incident file. The inspector noted that the source contained a minimal amount of activity and the source handling and transport were conducted in full compliance with all the applicable regulations. Personnel exposure from this operation was so minimal that it could not be measured.

4. Survey Meter Calibration

Instruments are calibrated using a 2 mg radium needle. The needle is stored in a lead brick well in the Health Physics "hot room" (Room 049). Some old lead pigs are also stored in this room. The radium needle was only used once outside Room 049 and this was for a one day experiment in radiobiology. The inspector noted that radioactive sources were being used and stored appropriately.

5. Radiation Safety

A review of the film badge records (Landauer) for the Health Physics personnel indicate "normal" readings. The highest permanent cumulative reading is 330 mrem deep, maximum quarterly reading was 50 mrem deep.

All of the technicians were fitted for respirators as emergency response equipment, but it was decided not to use respirators as primary means of internal exposure control.

6. Exit Meeting

The inspector met with licensee representatives identified in Paragraph 1 and summarized the scope and findings of this special inspection.