DCS No: 03009588900918
Date: September 18, 1990

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-I-90-80

This preliminary notification constitutes EARLY notice of events of POSSIBLE safety or public interest significance. The information is as initially received without verification or evaluation, and is basically all that is known by the Region I staff on this date.

Facility:
Washington Hospital Center
110 Irving Street, N.W.
Washington, D.C. 20010
DN 030-09588

08-03604-04

Licensee Emergency Classification:
___ Notification of Unusual Event
___ Alert
___ Site Area Emergency
___ General Emergency
_X_ Not Applicable

Subject: MALFUNCTION OF TELETHERAPY UNIT RESULTING IN NON-RETRACTION OF SOURCE

At 4:00 p.m. on September 18, 1990, the radiation safety officer at the Washington Hospital Center, Washington, D.C. informed Region I that the teletherapy source of their teletherapy unit had been stuck in the "on" position at the time of treatment of a portion of a patient's head and neck. The teletherapy unit is an Atomic Energy of Canada Limited (AECL) Theratron Model 780 containing a cobalt-60 sealed source used in the treatment of cancer by external beam therapy. The radiation safety officer at the hospital stated that the cobalt-60 teletherapy source had not retracted to its fully shielded position at the end of a prescribed patient treatment. The radiation therapy technologist pressed the emergency stop button, but the source did not retract. The technologist then opened the door (which normally causes the source to retract) but the source remained in the "on" position. The technologist immediately removed the patient from the treatment room. After removing the patient the key on the teletherapy unit console was turned from the on to off position several times. This step apparently succeeded in activating the source retraction mechanism. The source was returned to the fully shielded position.

The radiation safety officer informed Region I that a patient was scheduled for a treatment time of 0.62 minutes but received a treatment lasting 0.82 minutes. This caused the patient to receive an extra 19 rads. This was the last treatment fraction the patient was to receive and resulted in a total of 5959 rads instead of the prescribed 5940 rads, a dose less than 1.0% greater than the prescribed dose. The licensee determined that the additional dose would not result in any adverse health effects to the patient and was not reportable to the NRC.

The radiation safety officer confirmed that there will be no further treatment of patients until the teletherapy machine has been repaired. The licensee's consulting teletherapy physicist was contacted and went to the facility to determine the cause of the malfunction. The radiation safety officer stated that, due to a "hissing sound" when the unit was activated, it is likely that there is a problem with the unit's pneumatic system. It is our understanding, however, that the pneumatic system in this unit is designed through the use of relays, solenoids, valves and sensing switches so that the source drawer automatically retracts to the off position in the event of power failure or pressure loss.

The radiation safety officer stated that he believed the machine would be repaired by the morning of September 19, 1990, by AECL or Neutron Products, Inc. (NPI), Dickerson, Maryland, a teletherapy service company.

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The licensee will provide NRC Region I with a report specifying the cause of the malfunction when it is determined. All treatments have been cancelled by the licensee until repairs and corrective actions are completed.

Region I will examine the circumstances of the malfunction during an inspection in the near future.

The District of Columbia has been notified. Region I is prepared to respond to any media inquiries.

This information is current as of 5:00 p.m., September 18, 1990.

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