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# Report to Congress on Abnormal Occurrences

April - June 1990

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corrected the department's procedures manual to reflect the proper dosage for a substernal thyroid scan. Dosage for a substernal thyroid scan also was added to the department's Standard Dose Chart.

NRC - An NRC inspection was conducted on June 19, 1990 (Ref. 6). Seven violations of NRC requirements (unrelated to this event) were identified. The licensee's corrective actions to prevent recurrence were found to be satisfactory. The NRC notified its medical consultant who reviewed the circumstances. He made certain procedural recommendations for consideration by the licensee.

This item is considered closed for the purposes of this report.

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#### 90-14 Administration of Iodine-131 to a Lactating Female With Uptake by Her Infant

The following information pertaining to this event is also being reported concurrently in the *Federal Register*. Appendix A (see the general criterion) of this report notes that an event involving a moderate or more severe impact on public health or safety can be considered an abnormal occurrence.

Date and Place - June 19, 1990; Tripler Army Medical Center; Honolulu, Hawaii.

Nature and Probable Consequences - A nursing mother was given a 4.89 millicurie dose of iodine-131 at an NRC licensed medical facility that resulted in an unintentional radiation dose to her infant's thyroid gland estimated at 30,000 rads and a dose to the infant's whole body of 17 rads. The error was detected on June 21, 1990, when the patient returned to the medical center for a whole body scan. The scan indicated an unusually high breast uptake of iodine-131. In the opinion of the patient's physician and an NRC medical consultant, the infant's thyroid function will be completely lost. The infant will require artificial thyroid hormone medication for life to ensure normal growth and development.

Cause or Causes - The physician and nuclear medicine technologist failed to confirm that the patient was not breast feeding. The patient arrived at the medical center from a remote South Pacific island. Communication between the island physician and the Army physicians was poor and the Tripler physicians were not aware that the mother had given birth on June 1, 1990.

#### Actions Taken to Prevent Recurrence

Licensee - Immediately following discovery of the error the licensee began using a new questionnaire that more clearly requires the collection and documentation of information concerning patient pregnancy and breast feeding. The Commanding Officer has ordered a special investigation to define the cause and appropriate corrective actions. The licensee has contacted the patient and the patient's physician and is finalizing arrangements for long term follow-up medical care.

NRC - An Enforcement Conference was held on August 16, 1990, and enforcement action is being considered.

Future reports will be made as appropriate.

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#### 90-15 Medical Therapy Misadministration

The following information pertaining to this event is also being reported concurrently in the *Federal Register*. Appendix A (see the general criterion) of this report notes that an event involving a moderate or more severe impact on public health or safety can be considered an abnormal occurrence.

Date and Place - June 22, 1990; St. Luke's Hospital; Cleveland, Ohio.

Nature and Probable Consequences - A 57-year-old woman, being treated for lung cancer, was erroneously given a 178 rem radiation dose to the left side of the head on June 22, 1990, using the licensee's cobalt-60 teletherapy unit. The patient was scheduled to receive a 200 rem radiation dose to the chest area at the time of the misadministration. The treatment was the ninth of a total of ten treatments in the series for a total of 2,000 rem to the chest. The treatment began June 11, 1990.

A technologist set the patient up for brain irradiation without looking at the treatment documents. After the left side of the head was treated, the patient asked if her chest would also be treated. At this time, the treatment staff discovered the error.

Because the misadministration involved a single treatment and because of the dosage involved, no adverse medical effects are expected. Subsequent to the misadministration, the patient received the intended 200 rem radiation dose to the chest area. The tenth treatment was administered, and the patient began a second phase of 25 radiation treatments of 150 rem each to the chest area.

Cause or Causes - This misadministration was caused by the failure of the technologist to examine the treatment documentation (the setup sheet and a treatment field picture). Although the technologist had previously treated the patient, the technologist erroneously assumed the brain was the area to be treated. (The staff determined that although lung cancers of this type often do metastasize to the brain, the irradiation of the brain in this case was a misadministration nonetheless.)

#### Actions Taken to Prevent Recurrence

Licensee - The licensee has revised its procedures to require the verification, when circumstances permit, of the treatment setup by a second technologist using the setup documentation. All technologists have been trained in the procedure. The NRC is requesting the licensee to amend its quality assurance procedures to include dual verification of treatment setups prior to any treatment.