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Consulting Staff

Divisions:
Angiography
Computerized Tomography
Diagnostic Roentgenology
Nuclear Medicine
Radiation Oncology
Ultrasound

Robert M. Olley, R.T.
Administrative Director

polyclinic™
MEDICAL CENTER
2601 North Third Street ☐ Harrisburg, Pennsylvania 17110
Telephone (717) 782-4250

TO: Robert J. Altoff, Medical Physicist

FROM: Tracey LaRusso, B.S.R.T. (R.)(T.) T.L.

DATE: December 21, 1990

RE: Cobalt 60 Source Return Failure

Patient on table was to receive an AP/PA treatment to the bilateral neck, 90 cGy each port. The anterior port was treated with no problems. I rotated the machine and started to treat the posterior portal. When I heard the machine click and the timer pointer was at 0, I entered the room. Halfway in I noticed the SPI (Source Position Indicator) was red and backed up to make sure. I couldn't see the source sticking out because the machine was turned underneath and the couch blocked my vision. To make sure the source was stuck I backed up a couple of steps to the door and saw the indicator above it was also red. Realizing the source really <u>was</u> stuck, I then went in to get the patient off the table. I could hear the source going back in as I reached the table.

I got the patient down, left the room, and informed my supervisor, assistant supervisor, and the physician on duty. The patient was to receive .77 min., but the "Veri-Timer" read 1.11 min. The room was secured and Physics was notified.

/jb

A4

THERATRONICS SERVICE RECORD

INVOIC

THIS IS NOT AN INVOICE
WILL FOLLOW IF REQUIRED AND WILL REFERENCE THIS SERVICE RECORD NUMBER
WARRANTY 30 DAYS PARTS AND LABOR

CUSTOMER ORDER NO. & DATE	COST CENTER	CHARGE POINT	PRODUCT ID	SERVICE RECORD NO.	SERIES
P.O. 41889	658			3498	E

REQUEST DATE	TIME	START DATE	TIME	COMPLETE DATE	TIME	MODEL & SERIAL NO.	S.B. HOURS	H.V. HOURS
		90-12-23	0730	90-12-23	1530	T80 295		

SERVICE REQUESTED

STUCK SOURCE

CUSTOMER

POLYCLINIC MED CTR
3RD + RADNOR ST
HARRISBURG, PA 17110

LOCATION CONSUMPTION

SERVICE PERFORMED

ARRIVED ON SITE FOUND UNIT OPERATIONAL
ADJ LP REG FROM 17 TO 22 LBS
REMOVED HEAD COVERS + CHECK FIELD
LIGHT TAPES. FOUND NO PROBLEMS.
TAPES IN GOOD SHAPE NO KINKS OR
BENDS. REMOVED AIR PRESSURE FROM
AIR TANK + PULLED ON SOURCE. SOURCE
NOT STIFF VERY SMOOTH. PUMPED
UP + CHECKED LP SW. WHICH WAS
SET AT 14 LBS. SOURCE TRANSIT TIME
WAS UNDER 2 SECONDS EACH DIRECTION
PUMP TEST 3 MIN 10 SEC TO PUMP FROM 34 LBS
TO 55 LBS. WHICH ARE UPPER + LOWER LIMITS
FOUND NO PROBLEMS.

	STANDARD	OVERTIME
LABOR HOURS		1.5
TRAVEL HOURS		6.0

TRAVEL EXPENSES $

TYPE OF SERVICE

- BILLED SERVICE ☒
- SOURCE REPLACEMENT ☐
- UNIT INSTALL'N ☐
- WARRANTY ☐
- RECALL ☐
- CLINICAL DOWNTIME ☐
- SERVICE CONTRACT ☐
- SHOP REPAIR ☐
- REMANUFACTURE ☐
- EXTRA ORDINARY ☐

FAILURE CODE

RECOMMENDATIONS

INVOICING INFORMATION

LABOR	
TRAVEL	
MATERIAL	
FREIGHT	
TAX	
CUSTOMER TOTAL	

QUANTITY	U/I	PART NUMBER	DESCRIPTION	UNIT PRICE

Roger Thomas

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406

DEC 21 1990

Docket No. 030-004952 License No. 37-00358-05
CAL No. 1-90-021

Polyclinic Medical Center
Department of Radiology
ATTN: Matthew D. Kopetchny
Administrator of Clinical Services
2601 North Third Street
Harrisburg, Pennsylvania 17110

Gentlemen:

Subject: Confirmatory Action Letter No. 1-90-021

On December 21, 1990, Mr. Robert Altoff of your staff reported to NRC Region I an incident involving the malfunction of a teletherapy machine operated at your facility. The malfunction of the machine resulted in the addition of a significant increment of time (20 seconds) to the desired patient exposure time. Pursuant to a telephone conversation between you and Dr. M. Shanbaky of this office on December 21, 1990, it is our understanding that you have taken or will take the following actions with regard to the use of the Theratron T-80 teletherapy machine involved in that incident.

1. Immediately terminate ongoing treatment and suspend future treatment.

2. Determine the cause(s) of the teletherapy machine malfunction and take appropriate corrective action, including all necessary repairs and calibrations to ensure safe conduct of teletherapy operations.

3. Review and revise your written emergency operating procedures of the T-80 to ensure that timely and appropriate action is taken to minimize radiation exposure to patients and personnel.

4. Provide training to all personnel involved in the December 21, 1990 teletherapy incident. Training will include lessons learned, any procedural changes described in item 3 above, and sensitization of the staff to the need to follow procedures. The training will be completed prior to the resumption of teletherapy treatment.

5. Prior to the resumption of patient treatment, notify the NRC Region I directly (215-337-5000) or through the NRC Headquarters Operations Center (301-951-0550) of the cause of the teletherapy machine malfunction, repairs performed and other corrective actions completed.

REGION I
NMSS LICENSEE EVENT REPO

License No. 37-00358-05

Docket No. 03000452

MLER-RI-90 192

I. ACTION CONTROL DATA

Licensee Polyclinic Medical Center

Event Description Additional Information on a malfunctioni teletherapy unit

Event Date 12/21/90 Report Date 12/27/90

II. REPORTING REQUIREMENT

☐ 10 CFR 20.402 - theft or loss

☐ 10 CFR 20.403(a)(b) overexposure/release

☐ 10 CFR 20.405 - 30 day report

☑ Other none

☐ 10 CFR 35.33 Therapeutic Misadministration

☐ 10 CFR 35.33 Diagnostic Misadministration

☐ License Condition

III. REGION I RESPONSE

☐ Immediate Site Inspection Inspector ____ Date ____

☐ Special Inspection Inspector ____ Date ____

☐ Telephone Inquiry Inspector ____ Date ____

Licensee Representative and Title ____

☐ PN ☐ Daily Report

☒ Information entered - Region I log and Outstanding Items List

☒ Review at next routine inspection

IV. REPORT EVALUATION

☒ Description of Event

☐ Levels of R/M involved

☐ Cause of Event

☒ Corrective Actions

☐ Calculation Adequate

☐ Letter to Licensee requesting additional information

Completed by: ____ Date 3/7/91

Reviewed by: ____ Date 3/7/91

V. SPECIAL INSTRUCTIONS OR COMMENTS

License No. [illegible]
[illegible]et No. 03000452
MLER-RI - 90-192

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TO: Radiation Safety Committee

FROM: Robert J. Altoff, Medical Physicist

DATE: December 27, 1990

RE: Cobalt 60 Source Return Failure 12/21/90

At 1420 hours on 11/21/90 I was informed by Tracey LaRusso, R.T.(R.)(T.) there had been a source return failure on the Theratron 80 Cobalt 60 teletherapy unit. She had been performing a routine parallel-opposed treatment field with the teletherapy gantry at the 180° position. The Cobalt 60 source spontaneously returned to the "off" position without further intervention by Mrs. LaRusso. Her statement regarding the events of December 21, 1990, is attached.

At 1430 hours I informed Milton Friedlander, M.D., Radiation Safety Officer, of the incident. At approximately 1435 hours I telephoned Theratronics, Inc., to notify them of the source return failure; they later returned my phone call to establish a time for a service call. At approximately 1445 hours I notified Christina Schulingkamp, Region I USNRC, of the incident. At approximately 1500 hours Ms. Schulingkamp called to inform me that M. Shanbaky, PhD., would be calling the Division of Radiation Oncology to speak with the Administrative Representative of the Radiation Safety Committee regarding a confirmatory action. I then informed Mr. Robert Olley and Mr. Matthew Kopetchny of the incident and the USNRC's request to inform them directly of the confirmatory action. At approximately 1545 hours Mr. Kopetchny and I spoke with Dr. Shanbaky regarding the confirmatory action required on the part of the Medical Center to satisfy the NRC requirements for this incident. At 1707 hours I received a Fax copy of the confirmatory action letter No. 1-90-021, a copy of which is attached.

9104010304 901227
REG1 LIC30
37-00358-05 CF

DESIGNATED ORIGINAL

RETURN ORIGINAL TO
REGION I

Theratronics, Inc., Service arrived on 12/23/90 to evaluate the source return failure. Although the Field Service Representative did make some minor adjustments to the teletherapy unit, his final conclusion was there were no significant abnormalities found which could have caused the source return failure. A copy of his field service report is attached.

On 12/24/90 at approximately 0830 hours, a conference call was conducted with Malcolm R. Knapp, Director, Division of Radiation Safety and Safeguards, USNRC Region I, and his staff. In accordance with the confirmatory action letter No. 1-90-021, I informed them of the following:

1. Treatments were terminated at the time of the incident and no further treatments were performed from then until our conference call.
2. Theratronics had thoroughly evaluated the teletherapy unit and could find no cause for the malfunction. A check calibration, symmetry, field flatness, and a check of all emergency stops and switches were performed and were within normal limits.
3. Emergency Operating Procedures for the Theratron 80 were reviewed with the staff immediately following the incident on 12/21/90.
4. A training session was also conducted on 12/24/90, reviewing the entire incident with the staff, emphasizing to them the need to strictly follow the Emergency Procedures as outlined at the control station.
5. Following the conference call with USNRC Region I office, patient treatments were resumed.

At the writing of this letter, no further problems have been experienced with the teletherapy unit.

RJA/jb

cc: Richard M. Fencel, M.D.,
Medical Director, Department of Radiology

Malcolm R. Knapp, Director,
Division of Radiation Safety and Safeguards

All Radiation Safety Committee Members

Enclosures (3)

DCS: 30-00452/870420
Date: April 21, 1987

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-I-87-33

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: Polyclinic Medical Center
Harrisburg, Pennsylvania
37-00358-05

Licensee Emergency Classification:
_____Notification of Unusual Event
_____Alert
_____Site Area Emergency
_____General Emergency
_____Not Applicable

Subject: MALFUNCTION OF TELETHERAPY UNIT

On Monday, April 20, 1987 at 12:30 p.m. an Atomic Energy of Canada Ltd. (AECL) Theratron 80 cobalt-60 teletherapy unit malfunctioned. A patient was positioned to have an anterior neck treatment using a 5x11 cm field size with the teletherapy unit in the fixed position. After the therapy technician activated the timer, she observed the teletherapy unit beginning to rotate and pressed the "off" button to terminate the treatment. The patient sat up when the teletherapy unit began to move, thereby moving his body outside of the primary beam. The licensee estimated the total "on" time to be 0.1 minutes, producing approximately 10 rad for a 5x11 cm field size. The whole body dose received by the patient was only due to scatter radiation and is currently estimated by the licensee to be less than 500 millirem.

The licensee has ceased treatment using this teletherapy unit until AECL physically examines the unit. The licensee does not believe that human error was involved, since this unit is never used in the rotational mode. AECL is scheduled to examine the unit on the afternoon of April 21, 1987, and will attempt to reproduce and correct the malfunction.

Region I will evaluate the incident to determine if a therapeutic misadministration occurred.

The Commonwealth of Pennsylvania has been notified.

Region I received notification of this occurrence at 4:00 p.m. on April 20, 1987 from the licensee's radiation physicist.

CONTACT:	DAVIS	GLENN
	488-1250	488-1260

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			RI Resident Office ________		
			Licensee: ________ (Reactor Licensees)		

IP·

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