



DEPARTMENT OF VETERANS AFFAIRS
Medical Center
West Los Angeles
11301 Wilshire Boulevard
Los Angeles CA 90073

IE07
3001213

March 31, 1997

APR 01 1997

In Reply Refer To

691/214

L. J. Callan, Regional Administrator
United States Nuclear Regulatory Commission, Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, Texas 76011-8064

Dear Mr. Callan:

On December 26, 1996, a few days after the Dual Timer was installed, the Co-60 Teletherapy Unit experienced source drawer malfunctions. Then, a Theratronic's serviceman attempted to determine the root cause but was not successful. Not until the 7th of March did the malfunction in question reoccur. Theratronics was not able to determine the cause but did find a loose wire and made some other minor adjustments. Since that time the failures have again ceased. It is not yet known if these adjustments were directly related to the root cause. Another possibility is that these minor alterations may have temporarily masked the root cause and now it may require quite some time before a source drawer failure occurs again. The serviceman indicated that in order to pinpoint the cause the machine must malfunction again so that he can conduct the appropriate testing which requires the machine to be in the failed state. The amount of time before the next malfunction occurs is not known and may again require several months wait.

Because the exact cause(s) of the teletherapy unit malfunctions have not been determined, we are requesting to implement the following:

- If the Co-60 Unit malfunctions again so that the cause can be pinpointed and the part or parts that are producing the problem are isolated, then they will be replaced and any other repairs required will be done at that time. Theratronics indicated that this corrective action should prevent reoccurrence by eliminating the root cause.
- We do plan to continue operation of the unit beyond 180 days from the date of the Confirmatory Action Letter (CAL) 4-96-006(B) (Supplement) dated January 2, 1997. Our justification is that the West Los Angeles VA Medical Center has requested that the Veterans Integrated Service Network (VISN) purchase a new Linear Accelerator to replace the Co-60 Teletherapy Unit. Funding must first become available before the replacement can be purchased. This may take longer than the 180 days would permit. Therefore, the VA Medical Center requests to continue using the Co-60 unit for patient treatment until the funding is appropriated. In the interim, the above plan will be in effect. Once the new machine is installed, the Co-60 unit would then be decommissioned.

Additional justification for the continued use of the Co-60 Unit is the installation of the Dual Timer. The Dual Timer insures that the operator will be made aware of a source drawer malfunction. When a malfunction occurs such that the source does not leave the housing, the timer will stop counting and an error message will be displayed. Then the operator will not be given false impression of treatment by having the timer count, even though the source has not moved

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PDR ADDCK 03001213
PDR

100029

into position to treat, as was the case with the single timer. According to Theratronics (see their enclosed fax dated 97/03/26), the Dual Timer system insures no patient will get incorrect dose delivery without the operator being made aware of it, even though the exact cause of the problem has yet to be determined.

Theratronics investigated the C0-60 teletherapy unit and has expressed confidence that even without knowing the exact cause of the error, patients are not placed in jeopardy.

Nonetheless, considering the unit's age and history, clearly this machine should be replaced as soon as possible and VISN has been made aware of the importance of doing so, in order to minimize the risk to our patients.

We remain committed to the operational and procedural controls outlined in our letter dated January 9, 1997 should a source drawer malfunction occur prior to the replacement and decommissioning of the Co-60 Unit.

Copies of the Co-60 Teletherapy service reports since the discovery of the malfunction are enclosed for documentation purposes. Also enclosed is a copy of the letter from Federal Express to Theratronics regarding the lost package containing the single timer and circuit board that was to be tested by Theratronics. A copy of the letter from Theratronics to West Los Angeles VA Medical Center regarding the lost package is also enclosed.

Sincerely yours,



KENNETH CLARK
Executive Director

Enclosures:

cc:

Fran Herbig, Ph.D.

VA National Health Physics Program (115 HP)

Edwin Leidholdt, Jr., Ph. D.

VA National Health Physics Program

Robert Nicol, Compliance Officer

U.S. Food and Drug Administration

Linda Howell, Chief Nuclear Materials Inspection
& Fuel Cycling Decommission Branch

03/20/1997 17:02 0137031-2680 THERATRONICS

THERATRONICS

International Limited

Post-it FAX TRANSMITTAL MEMO 7571 2 NO. OF PAGES	
TO: BRAD KRUTOFF	FROM: Ron Strike
CO: V.A. MED CENTER	CO: TIL
DEPT:	PHONE #: 613-591-2172
FAX #: 310-268-4612	FAX #: 613-591-5680

March 20, 1997

Veterans Affairs Medical Center
West Los Angeles
11301 Wilshire Blvd.
Los Angeles, California
90073

Attention: Mr. Brad Krutoff

Dear Mr. Krutoff:

Subject: Theratron T780 SN037 - Parts Returned for Investigation.

As per your request to Mr. Dave Marquez for information concerning the parts replaced on the above mentioned unit, we regret to inform you that the parts returned by Mr. Marquez for investigation, were never received by Theratronics here in Ottawa.

In spite of repeated efforts by the courier to trace the shipment, the package containing both the Single Channel Timer and the B12 Solenoid PCB P/N A102409-505 cannot be located. I am enclosing a letter from Federal Express that documents the pertinent details of the shipment along with their apology for the loss.

Please feel free to contact either Mr. Dave Marquez, the Theratronics Service Representative for your area or the undersigned at (613) 591-2172 if we can be of further assistance.

Sincerely,



Ron Strike
Quality Assurance

cc: Mr. Dave Marquez
Unit History File
File: 961221

413 March Road
P.O. Box 13140
Kanata Ontario Canada
K2K 2B7
(613) 591-2100
Fax (613) 592-3616

ISO 9001-1994



Cert # 201630

Kanata, Ontario, Canada

THERAFAX

THERATRONICS INTERNATIONAL LIMITED
413 MARCH ROAD
KANATA, ONTARIO
K2K 2B7 CANADA

To:BRAD KRUTOFF		From:KEITH A. STRUTT	
Company:WEST LA MEDICAL CENTRE		Company:THERATRONICS INTERNATIONAL	
Date:97/03/26	Time:16:11:58	Return Fax No.:1 613 591-2142	
Subject:		Voice Phone No.:1 613 591-2126	

reference: Theratron 780 serial number 37

Dear Mr. Krutoff,

Pursuant to our telephone conversations, I wish to advise you of the following :

The Theratronics service organization has inspected the a/m unit recently and, although no definite problem was located and repaired, several minor electrical connections were tightened and/or cleaned. Attempts to duplicate the problem were not successful as the unit continued to operate properly.

A cable was put in place to allow the measurement of a point voltage should the problem re-occur.

Theratronics will continue to monitor the operation of your cobalt unit, and with your continued co-operation, we trust that we shall be able to duplicate the problem and locate and repair the source of the problem or in fact conclude that the accumulative service interventions have already solved it.

Now that a digital dual timer has been installed on your cobalt unit, in the event that a source exposure is requested but does not occur, the design of the dual timer will indicate the absence of a source exposure. Because the operation of the exposure timer is dependant upon the detection of the source in the fully exposed position within an acceptable source transit time, following the request for an exposure, an indication of exposure is not possible when there is no exposure. We at Theratronics therefore wish to indicate that the hazard of incorrect dose delivery due to the previous problem no longer exists.

As with all electrical/electronic/ pneumatic devices, the the possibility of component failure exists. The safe-guard now in place in the form of the digital dual timer along with the diligence of the unit operators should allow for continued usage of the unit without incidence. All correct operating procedures need to be followed, and any further indication of problems will be investigated. Please be assured that you have the full and complete resources of Theratronics available to help maintain your cobalt unit as you continue to operate it.

Best regards,

Keith A. Strutt
General Manager, Service and Technical Support

cc: Ed Martell

CUSTOMER ORDER NO. & DATE		COST CENTER				16078		1	
APPOINTMENT DATE		TIME	START DATE	TIME	COMPLETE DATE	TIME	MODEL & SERIAL NO.	S.B. HOURS	H.V. HOURS
11/11/97			11/11/97	10:00	11/11/97	11:00	T78C#37		
SERVICE REQUESTED							CUSTOMER V. J. L. S. C. A. N.		
① LOOK FOR CAUSE OF D.O.N F TIMER FAILURES									
LOGGED (P) LT									
SERVICE PERFORMED							LABOR HOURS		
1. CHECKED WIRING TO SOURCE SOLENOIDS AND DID NOT FIND ANY PROBLEMS.							STANDARD		OVERTIME
2. CHECKED K14 (DOOR INTERLOCK) AND IT APPEARED OK.							TRAVEL HOURS		
3. LOW PRESSURE SWITCH CHECKED OK.							STANDARD		OVERTIME
4. I HAD A FAILURE BUT IN CHECKING SWITCHES I RESET POWER AND THE PROBLEM DISAPPEARED. THIS SEEMS TO BE HOW IT ALWAYS CLEARS.							TRAVEL EXPENSES		\$
5. I WAS ABLE TO DUPLICATE THE PROBLEM BY REMOVING K24, WIRE 311 OR WIRE 601 THIS SUGGESTS AN INTERMITTANT OPEN IN THE SOURCE SOLENOID (POS) CIRCUIT.							BILLED SERVICE		SOURCE REPLACEMENT
							SERVICE CONTRACT		UNIT INSTALLATION
							CALL BACK		WARRANTY (INSTALLATION)
							PHONE SUPPORT		BUSINESS DEVELOPMENT
							TRAINING		OTHER
RECOMMENDATIONS									
INVOICING INFORMATION									
LABOR									
TRAVEL									
MATERIAL									
FREIGHT									
TAX									
CUSTOMER TOTAL									
ACCEPTED BY: (Print Name)									
SIGNATURE									
SERVICE REP. (Print Name)									
SIGNATURE									
EMPLOYEE NO. CC19									

TO THE BEST THAT I COULD DETERMINE;
IT APPEARS THAT THE FAILURES ON THE
TIMER ARE CORRECT. — THERE IS NO
SOURCE MOVEMENT — IT LOOKS LIKE ~~THERE~~
ARE ONLY A FEW POSSIBILITIES LEFT.
THEY ARE: AN INTERMITTANT OPEN WIRE
CONNECTION TO THE SOURCE SOLENOID (AS)
OR SOMETHING WRONG IN THE K24
CIRCUIT. I WAS UNABLE TO GET THE
MACHINE TO MALFUNCTION AGAIN TO
MAKE MEASUREMENTS AT K24. A COUPLE
OF MEASUREMENTS HERE DURING FAILURE
WILL CLOSELY ISOLATE WHERE THE PROBLEM
IS.

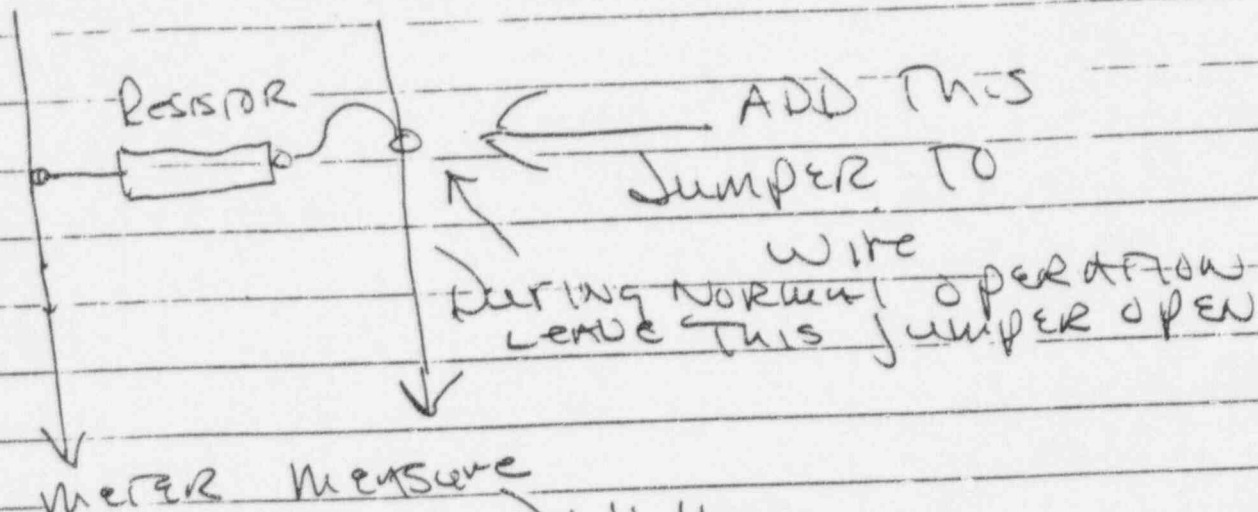
Bill
Therakronics

14/march/97

4. CUSTOMER COPY

FOR FAILURE MEASUREMENT

WIRES AT Console.



AC Voltage + DC Voltage

DO NOT MAKE CONNECTIONS WITH SOURCE DRIVE ON (WIRES ARE 115 VOLTS AT THIS TIME)

TO MEASURE K23 IN ROOM USE DC VOLTAGE

AT MEASURE AT BETWEEN

TB2 19 WIRE # 311

TB5 19 WIRE # 105

YOU SHOULD MEASURE 6VDC

TERMINAL STRIPS ARE #10 IN THIS DIRECTION

TB5 TB4 TB3 TB2 TB1

FEB-17-1997 12:05

TOWER GROUP

INTL. TRANS.

Company Address:
315 Avenue (Highway) 101 East
Memphis, TN 38110

315 394 0455

F.01/01



VIA FAX 315-394-0455

February 13, 1997

Mr. Mike Lemke
Theratronics International
826 Proctor
Ogdensburg, NY 13669

Dear Mr. Lemke:

The problem encountered with a December 20 FedEx shipment from Theratronics in Tacoma, WA has been brought to my attention.

According to our records, package tracking number 3592983483 was tendered to FedEx on Friday, December 20 for delivery on Monday, December 23 by 4:30 p.m. Unfortunately, however, the shipment was delivered incorrectly. I note that efforts to retrieve the package were unsuccessful.

Mr. Lemke, it is never our intention to inconvenience a customer in any way. I wish to assure you that documentation has been forwarded to the appropriate management so that all factors of this occurrence may be internally addressed. We are dedicated to 100% performance, and our customers, at all times, are our foremost concern.

I sincerely apologize for the inconvenience caused to all concerned, Mr. Lemke. We look forward to the privilege of serving you again, confident that future transactions will prove to be far more favorable and reflective of the quality service we are known to provide.

Sincerely,

Mae Roo Jackson
Customer Relations Department

mrj

cc: Tony Ferritano, Sr. Manager, 13601/ARTA/NY

WARRANTY 30 DAYS PARTS AND LABOR

4 CUSTOMER COPY

CUSTOMER		COST CENTER		CHARGE POINT		PRODUCT ID	LOC.	SERVICE RECORD NO.	
V.A.M.C. West L.A.		811		52075		A131		16658	
REQUEST DATE	TIME	START DATE	TIME	COMPLETE DATE	TIME	MODEL & SERIAL NO.		U.S. HOURS	M.V. HOURS
						T280 # 37			

I tested the fully shielded, Just shielded and fully exposed switches for proper operation - OK

I also disconnected each switch input to the timer and the appropriate fault codes were displayed on the timer

I also tried manually closing the Just shielded and fully exposed switches while the source was in the fully shielded position - again the proper fault codes were displayed

I checked all wiring connections and found no problems.

I checked the 5v and 24 VDC power supply in the timer - OK

I will discuss the "swiping motion" causing the "Inpf" code on the timer with tech support in Ottawa

Features

All switches, circuitry and protective ~~boxes~~ appear to be working properly.

No misadministration of dose or inappropriate dosage to patients can occur from this Inpf fault. The timer will not initiate treatment or count.

SPOKE with Rex Striker, Bob Johnson, and Jack Sogou in Ottawa. Installed Jumper between TB2-4 (183) and TB2-7 (119) on timer to assure good grounding

I cannot find any problem or condition which could cause the beam on failure in December or the input failure in Feb. Both ^{incidents} occurred between 10:30 and 13:30.

QUANTITY	U/I	PART NUMBER	DESCRIPTION	UNIT PRICE	AMOUNT
			we will continue to monitor unit performance and investigate any further timer faults if they occur		
			unit returned to clinical service by physics staff, 4 Feb 97		

THERATRONICS

SEE THE RECORD

WARRANTY 90 DAYS PARTS AND LABOR

CUSTOMER ORDER NO. & DATE		COST CENTER		CHARGE POINT		PRODUCT ID		SERVICE RECORD NO.		SERIES																			
		858		52075		A142		16139		F																			
APPOINTMENT DATE	TIME	START DATE	TIME	COMPLETE DATE	TIME	MODEL & SERIAL NO.		S.B. HOURS		H.V. HOURS																			
23/Dec/94	1030	23/Dec/94	0900	23/Dec/94		T780 #37																							
SERVICE REQUESTED						CUSTOMER																							
(1) install new Key Switch For Dual -TIMER RESET.						V.A. WADSWORTH																							
(2) ADJUST Mechanical Scale																													
LOGGED (✓) <input checked="" type="checkbox"/>																													
SERVICE PERFORMED						LABOR HOURS		STANDARD		OVERTIME																			
(1) INSTALLED new Key Switch FOR RESETTING Dual Timer.						1.5																							
(2) ADJUSTED Collimator & Slew SCALE.						TRAVEL HOURS		STANDARD		OVERTIME																			
						3.0																							
						TRAVEL EXPENSES																							
						BILLED SERVICE		<input type="checkbox"/>		SOURCE REPLACEMENT <input type="checkbox"/>																			
						SERVICE CONTRACT		<input checked="" type="checkbox"/>		UNIT INSTALLATION <input type="checkbox"/>																			
						CALL BACK		<input type="checkbox"/>		WARRANTY (INSTALLATION) <input type="checkbox"/>																			
						PHONE SUPPORT		<input type="checkbox"/>		BUSINESS DEVELOPMENT <input type="checkbox"/>																			
						TRAINING		<input type="checkbox"/>		OTHER <input type="checkbox"/>																			
RECOMMENDATIONS						INVOICING INFORMATION																							
						LABOR																							
						TRAVEL																							
						MATERIAL																							
						FREIGHT																							
						TAX																							
						CUSTOMER TOTAL																							
CODES	1	2	3	4	5	6	QTY.		U/I		PART NUMBER		DESCRIPTION		UNIT PRICE		AMOUNT												
1.							1				35030506		Key Switch																
2.																													
3.																													
4.																													
ACCEPTED BY: (Print Name)						SIGNATURE						SERVICE REP. (Print Name)						SIGNATURE						EMPLOYEE NO.					
NANCY McCREARY						<i>Nancy McCreary</i>						Bill Alridge						<i>Bill Alridge</i>						0019					
ORIGINAL REGIONAL OFFICE																													

1 ORIGINAL REGIONAL OFFICE

IN-100 (Rev. 1-25-60) NATIONAL ARCHIVES
PROPERTY OF GOVERNMENT DATE AND LABOR

1 ORIGINAL REGIONAL OFFICE

THERATRONICS INTERNATIONAL

Page 1 of 2

CUSTOMER:

W.L.A. V.A.M.C
Los Angeles

SERVICE RECORD NUMBER 15474
P&S NUMBER 57075
SOURCE DATE & CURIES 10/24/73
UNIT SERIAL NUMBER 37

THERATRON 780 MAINTENANCE

1. SOURCE OPERATING SYSTEM

- A. Drain Air Tank ☒
- B. Service air filter/moisture trap on compressor ☒
- C. Test L.P. safety switch ☒
- D. Check compressor operation
 - (28-32) 30 psi ☒
 - on (35-40) 40 psi ☒
 - on ≤ 142 off (45-55) 60 psi ☒
 - on ≤ 142 off (55-65) 40 psi ☒
 - on ≤ 142 pump time (<3) 1.34 min ☒
 - on ≤ 143 pump time (<4) 7/8 min ☒
 - (24-26) 40 psi ☒
 - on ≤ 142 (<5.0 psi/hr.) 30 psi/hr. ☒
 - on ≤ 143 (<2.5 psi/hr.) 1/2 psi/hr. ☒
- E. Check L.P. regulator ☒
- F. Inspect hoses, fittings, and check valve under pressure ☒
- G. Inspect air cylinder ☒

2. HEAD AND NECK

- A. Check beam defining light cord reel ☒
- B. Check and align O.D.I. ☒
- C. Inspect head swivel drive motor and gears ☒
- D. Check collimator readout pwr. supply (5) 1/2 vdc ☒
- E. Check operation of mercury switches ☒
- F. Check headlock operation ☒
- G. Check isocenter ☒
- H. Check and adjust backpointer light/laser ☒

3. COLLIMATOR

- A. Examine upper hinges ☒
- B. Clean and lubricate lead screws ☒
- C. Service drive chains ☒
- D. Check electrical connections ☒
- E. Check wedge filter/tray interlock ☒
- F. Check crosshair and trimmer alignment ☒
- G. Check field size readouts for accuracy ☒
- H. Check SDD switch operation ☒

4. MAIN FRAME

- A. Check drive belt, pulley keys and pulley tightness ☒
- B. Check gantry rotation worm drive dowels & bolts and rotation gear to tube shaft dowels ☒
- C. Check oil levels
 - gear reducer ☒
 - worm drive ☒
- D. Check electrical connections ☒
- E. Check main contactor ☒
- F. Check power supplies
 - (+15) 1/2 vdc (-15) 1/2 vdc ☒
 - (6.3) 6.2 vdc ☒
- G. Check slip ring assembly ☒
- H. Inspect rotating union ☒
- I. Inspect transducer and drive chain ☒
- J. Test emergency switches ☒
- K. Test rpm speed ☒
- L. Check arm rotation safety switch operation ☒
- O. Check operation of TEST key switch ☒

5. CONTROL CONSOLE

- A. Check all lamps ☒
- B. Tighten electrical connections ☒
- C. Test key switch for proper operation ☒
- D. Test emergency switch operation ☒
- E. Test reset operation ☒
- F. Check calibration of arm readout ☒
- G. Check console power supplies
 - (+15) 1/2 vdc (-15) 1/2 vdc ☒
 - (300) 1/2 vdc (5) 5 vdc ☒
 - console ☒ card file ☒
 - (5) 5 vdc (25) 1/2 vdc ☒
 - (115) 1/2 vdc ☒
 - (pos arm rel. 90) 1/2 vdc ☒
- H. Check seating of PCB's ☒
- I. Check card file power supply ☒

6. HAND CONTROL

- A. Check for loose or frayed wiring ☒
- B. Test enable switch operation (if applicable) ☒
- C. Test emergency switch ☒
- D. Check operation of all functions ☒
- E. Inspect mounting for loose couplings and proper operation ☒

7. COUCH

- A. Check vertical drive belt ☒
- B. Check locks and clutches on all motions ☒
- C. Check limit switches and stops vertical
 - lateral ☒
 - longitudinal ☒
 - top rotation ☒
 - isocentric rotation ☒

- D. Check drive chain tensions ☒
- E. Inspect Schneeburger bearings and stops ☒
- F. Inspect top ☒

8. AUXILIARY EQUIPMENT

- A. Inspect patient positioning lasers ☒
- B. Test room monitor ☒
- C. Accessories checked (List in comments) ☒

9. OPERATIONAL TEST

- A. Source transit times
 - out (1.5-2.0) 1.5 sec ☒
 - in (1.5-2.0) 1.7 sec ☒
- B. Test wedge filter/tray interlock operation ☒
- C. Test failed power operation ☒
- D. Check that reset is not possible with each interlock
 - door ☒
 - headlock ☒
 - off shield ☒
 - filter/tray ☒
 - treatment mode select ☒
 - 360 degree disable ☒
 - beam not off ☒
 - low air ☒
 - unit has status indicator panel ☒
- E. Test correct operation of treatment modes
 - fixed ☒
 - rotation ☒
 - arc ☒
 - skip ☒
- F. Check correct operation of beam-on and beam off lights
 - unit ☒
 - console ☒
 - over the door ☒

10. TIMER (check one)

- A. MECHANICAL TIMER
 - (1) Check clutch operation ☒
 - (2) Check timer operation ☒
- B. SINGLE DIGITAL TIMER
 - (1) Replace batteries ☒
 - (2) Check battery voltage (>5.2vdc) ☒
 - (3) Check power supply voltages (5±.05) 1/2 vdc ☒
 - (12) 1/2 vdc ☒
 - (4) Check each button on key board for proper operation ☒
 - (5) Remove one of timer relays, start fixed treatment, timer should show relay failure: Replace relay ☒
 - (6) Check that any button will pause each type of treatment ☒
 - (7) Check timer operation ☒

THERATRONICS INTERNATIONAL

CUSTOMER:

W.L.A. V.A.M.C.
Los Angeles

Page 2 of 2

SERVICE RECORD NUMBER 15474
P&S NUMBER 52025
SOURCE DATE & CURIES 7888m 1.10-7
UNIT SERIAL NUMBER 17

THERATRON 780 MAINTENANCE (Cont'd.)

C. DUAL DIGITAL TIMER

- (1) Check timer power supply voltages (unreg. 24) 24.2 vdc
(5±1) 5.86 vdc
- (2) Check that reset switch on timer resets digits to 000 ✓
- (3) Check that each set button works properly ✓
- (4) Check that 20.99 min. is maximum possible treatment ✓
- (5) Check that all six buttons will pause each type of treatment ✓
- (6) Operate FE switch manually, primary counter starts to count, warning buzzer sounds, secondary timer and set time show inhibit and input failure ✓
Inhibit clear keyswitch will clear inhibit ✓
- (7) Remove one of timer relays, start fixed treatment, timer will show relay failure and inhibit ✓
Replace relay ✓
- (8) Set 1.00 min. Fixed treatment, at end of treatment timer shows
Primary (1.00)
Secondary (1.00 to 1.03)

COMMENTS:

6. Hand Control has no spares ^{wires} left —
8. Accessories: Trimmer extensions (4)

CUSTOMER SIGNATURE

Nancy McCreary

SERVICE REP. SIGNATURE

[Signature]

DATE

20 Dec. 1996

WHITE - U.S. HEAD OFFICE

YELLOW - I&S OTTAWA

Form 4

THERATRONICS INTERNATIONAL LIMITED

SHIP TO WEST LA VA MEDICAL CENTER RADIATION THERAPY SERVICE 214 BUILDING 500, RM 0652 0696 11101 WILSHIRE BLVD. LOS ANGELES CALIFORNIA 90073		SHIP VIA BURLINGTON AIR - PREPAID		INVOICE DATE 96 DEC. 12	
SOLD TO WEST LA VA MEDICAL CENTER RADIATION THERAPY SERVICE 214 BUILDING 500, RM 0652 0696 11101 WILSHIRE BLVD. LOS ANGELES, CALIFORNIA 90073		PAYMENT TERMS NO. CHARGE		INVOICE NO. 101037	
		CUSTOMER ORDER NO. & DATE		CUSTOMER NO.	
				AECL ORDER NO. 101037	
				ACTUAL SHIP DATE 96 DEC. 12	

ITEM	DESCRIPTION - CAT NO	QTY ORD	QTY SHIP
1	A102424241 CONTROL CONSOLE TIMER ASST. HS 5022.50 COUNTRY OF ORIGIN: CANADA DUTY & BROKERAGE BILL TO SHIPPER VALUE FOR CUSTOMS PURPOSES ONLY NAFTA CERTIFICATE OF ORIGIN ATTACHED SPARE PART	1	

PROD. SER. NO.	ISOTOPE	CONTAINER TYPE	NO. OF PACKAGES
			ONE CASE
PHYSICAL FORM	MEAS. DATE	RETURNABLE <input type="checkbox"/> NON RE-TURNABLE <input type="checkbox"/>	WEIGHT
CHEM FORM		RADIATION	11-LBS.
CONCENTRATION	TOTAL ACTIVITY	AT SURFACE _____ M.R.H. AT ONE METRE _____ M.R.H.	VOLUME
			10 X 11 X 10
			SHIPMENT NO.
			SHIPMENT DATE
			96 DEC. 12

THERATRONICS INTERNATIONAL LIMITED
 413 MARCH ROAD, P.O. BOX 13140
 KANATA, CANADA K2K 2B7
 TELEX 053-4416
 TELEPHONE (613) 591-2100
 FAX (613) 592-3816

PACKING SLIP

026A

CUSTOMER ORDER NO. & DATE		COST CENTER		CHARGE POINT		PRODUCT ID		SERVICE RECORD NO.		SERIES	
		899		52075		AL3T		15471		F	
APPOINTMENT DATE	TIME	START DATE	TIME	COMPLETE DATE	TIME	MODEL & SERIAL NO.		S.B. HOURS		H.V. HOURS	
		10 Dec 96	0600			T-780 #37					
SERVICE REQUESTED						CUSTOMER					
Source did not extend but timer counted during verification setup						West L.A. V.A. Med. Center					
LOGGED (✓) □											
SERVICE PERFORMED						LABOR HOURS		STANDARD		OVERTIME	
Arrived on site noon Tues. met with Jim Montgomery from N.R.C. and Ray Alexander from FDA											
All work to be done when both inspectors are present.						TRAVEL HOURS		STANDARD		OVERTIME	
We were able to duplicate problem - timer counts but source does not move.						TRAVEL EXPENSES		\$			
Troubleshooting:						BILLED SERVICE		<input type="checkbox"/>		SOURCE REPLACEMENT <input type="checkbox"/>	
1. Found that the output of the B-10 SCR PCB - Solenoid driver - was staying at 90VDC when the timer was finished or interrupted - when the door was opened the output fell to 0VDC						SERVICE CONTRACT		<input checked="" type="checkbox"/>		UNIT INSTALLATION <input type="checkbox"/>	
replaced B-10 SCR PCB.						CALL BACK		<input type="checkbox"/>		WARRANTY (INSTALLATION) <input type="checkbox"/>	
we were able to duplicate the problem on one occasion immediately after the new PCB was installed.						PHONE SUPPORT		<input type="checkbox"/>		BUSINESS DEVELOPMENT <input type="checkbox"/>	
RECOMMENDATIONS						TRAINING		<input type="checkbox"/>		OTHER <input type="checkbox"/>	
						INVOICING INFORMATION					
						LABOR					
						TRAVEL					
						MATERIAL					
						FREIGHT					
						TAX					
						CUSTOMER TOTAL					
CODES		1	2	3	4	5	6				
1.											
2.											
3.											
4.											
QTY	U/I	PART NUMBER		DESCRIPTION		UNIT PRICE		AMOUNT			
1	ea	A102409 505		SCR Mkt. Dr. PCB							
ACCEPTED BY (Print Name)		SIGNATURE		SERVICE REP. (Print Name)		SIGNATURE		EMPLOYEE NO.			
				Dave Marquez				0010			

I will return to install the new timer as soon as the FDR and NRC give permission.

WHITE - Customer Copy

Participated in 11:00 PST Conference call.

We simulated the problem and discussed various scenarios -

We were not able to duplicate the delayed on scenario but we could duplicate the time counting with no course motion.

After discussing the problem and solution and the circuitry involved, the investigators proceeded with their investigation in other areas.

The Theratron 780 - as of Thursday afternoon, 5 Dec. is fully functional as designed and is ready to return to clinical use - as per EO MORTAL

I provided the inspectors with copies of diagrams as requested by inspectors — AS per Ed MARTEL

WHITE ORIGINAL- Regional Office

APPOINTMENT DATE	TIME	START DATE	TIME	COMPLETION DATE	TIME	MODEL & SERIAL NO.	HOURS	H.V. HOURS
		3 Dec 96	14:00			T780 #37		

SERVICE REQUESTED

No Field Comp

LOGGED (✓) ☐

CUSTOMER

V.A. West L.A.

SERVICE PERFORMED

found break in card reel - new reel
in order

replaced card reel

LABOR HOURS	STANDARD	OVERTIME
	<input type="checkbox"/>	<input type="checkbox"/>
TRAVEL HOURS	STANDARD	OVERTIME
	<input type="checkbox"/>	<input type="checkbox"/>
TRAVEL EXPENSES	<input type="checkbox"/>	

TESTED UNIT

Confirmed light vs Radiation coincidence
with Physicist

ODI was Adjusted

BILLED SERVICE	<input type="checkbox"/>	SOURCE REPLACEMENT	<input type="checkbox"/>
SERVICE CONTRACT	<input checked="" type="checkbox"/>	UNIT INSTALLATION	<input type="checkbox"/>
CALL BACK	<input type="checkbox"/>	WARRANTY (INSTALLATION)	<input type="checkbox"/>
PHONE SUPPORT	<input type="checkbox"/>	BUSINESS DEVELOPMENT	<input type="checkbox"/>
TRAINING	<input type="checkbox"/>	OTHER	<input type="checkbox"/>

RECOMMENDATIONS

CODES	1	2	3	4	5	6
1.						
2.						
3.						
4.						

INVOICING INFORMATION

LABOR	<input type="checkbox"/>
TRAVEL	<input type="checkbox"/>
MATERIAL	<input type="checkbox"/>
FREIGHT	<input type="checkbox"/>
TAX	<input type="checkbox"/>
CUSTOMER TOTAL	<input type="checkbox"/>

QTY.	U/I	PART NUMBER	DESCRIPTION	UNIT PRICE	AMOUNT
1	ea	A10240250	Card reel		

ACCEPTED BY: (Print Name)	SIGNATURE	SERVICE REP. (Print Name)	SIGNATURE	EMPLOYEE NO.
		Daniel McQueen		8010

ORIGINAL REGIONAL OFFICE

[illegible]