



January 5, 1989

Ms. Sharon Mott  
Radiological Health Section  
Georgia Department of Human Resources  
878 Peachtree Street  
Suite 600  
Atlanta, GA 30309

Dear Ms. Mott:

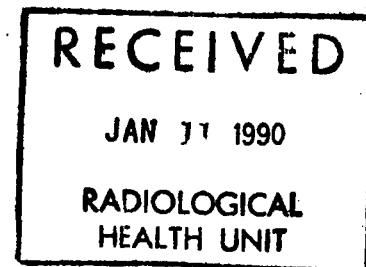
Enclosed please find a typed copy of the proposed Preventative Maintenance Schedule for the Leksell Gamma System. Your comments would be greatly appreciated.

Sincerely,

  
Martin Knotts  
Project Manager

MK:yc:mkmott

Enclosure



ELEKTA

**PREVENTATIVE MAINTENANCE SCHEDULE - LEKSELL GAMMA SYSTEM****RECEIVED**

JAN 11 1990

RADIOLOGICAL  
HEALTH UNIT**ACTIVITY****6 MO****Annual****5 YR****Reload****I. GENERAL CLEANING AND CHECKS****A. Patient Couch**

- 1) Remove mattress and sliding stretcher clean sliding cradle including helmet support and head shield
- 2) Check and adjust closure assembly of head shield (replace pins if bent)
- 3) Clean sliding stretcher; check and repair as necessary the height adjustment mechanisms
- 4) Clean mattress, reinstall stretcher and mattress; check operation

x	x	x	x
x	x	x	x
x	x	x	x
x	x	x	x

**B. Frame of Operating Table**

- 1) Remove three access plates and inspect for oil leakage, frayed wiring and effect repairs if necessary
- 2) Vacuum interior
- 3) Check cable drag chain for wear and lubricate as described in Sec. 6.1 of Users Manual
- 4) Check operation of cover belts
- 5) Reinstall covers and clean frame

x	x	x	x
	x	x	x
x	x	x	x
x	x	x	x

**C. Radiation Unit**

- 1) Clean unit and vacuum lintel area
- 2) Remove lintel and clean recess
- 3) Grease linkage in accordance with Sec. 4.1 of Users Manual
- 4) Remove plug and clean recess
- 5) Remove cover plate from beneath door cylinder rod and clean
- 6) Replace lever pin bushings and over-throw coupling

x	x	x	x
		x	x
	x	x	x
			x
			x
			x

**D. Helmet Hoist**

- 1) Clean
- 2) Check operation of helmet lock; adjust and repair as necessary
- 3) Check wheels and adjust if necessary
- 4) Check operation of helmet locking shoulders; adjust in accordance with Sec. 7 of Users Manual
- 5) Check operation of hydraulic unit
- 6) Drain and replace hydraulic oil

x	x	x	x
x	x	x	x
x	x	x	x
x	x	x	x
x	x	x	x
		x	x

**E. Console**

- 1) Clean
- 2) Check lamp operation and replace as necessary

x	x	x	x
x	x	x	x

<b>ACTIVITY</b>		<b>6 MO</b>	<b>Annual</b>	<b>5 YR</b>	<b>Reload</b>
<b>II. HYDRAULIC SYSTEM CHECKS</b>					
<b>A. Hydraulic Unit</b>					
1)	Clean	x	x	x	x
2)	Check oil level	x	x	x	x
3)	Check filter		x	x	x
4)	Change oil filter and oil			x	x
5)	Check accumulator pressure		x	x	x
6)	Check pressure set points	x	x	x	x
<b>B. Piping and Hoses</b>					
1)	Check for leakage at hydraulic unit and table base	x	x	x	x
2)	Check in trench for signs of oil		x	x	x
3)	Check hoses for deterioration and signs of leakage	x	x	x	x
4)	Replace hoses				x
<b>C. Hydraulic Cylinders</b>					
1)	Check for leakage	x	x	x	x
2)	Check connection pins for wear			x	x
3)	Replace gasket on bed cylinder				x
4)	Replace door cylinder				x
<b>III. ELECTRICAL/MECHANICAL CHECKS</b>					
<b>A. Patient Couch</b>					
1)	Check connectors for tightness	x	x	x	x
2)	Check cables for wear and replace if necessary	x	x	x	x
3)	Check speaker and microphone operations	x	x	x	x
4)	Check helmet sense connection for wear and replace if necessary		x	x	x
<b>B. Console</b>					
1)	Check operation of all switches for wear and replace if necessary	x	x	x	x
2)	Adjust monitor for optimal image contrast and brightness	x	x	x	x
<b>C. Relay Panel</b>					
1)	Clean and vacuum panel		x	x	x
2)	Check relays for signs of burnt contacts; replace if necessary		x	x	x
3)	Check operation of breakers		x	x	x
<b>D. TV System</b>					
1)	Clean lens	x	x	x	x
2)	Check focus and zoom controls	x	x	x	x
3)	Adjust lens gain and range for proper operation		x	x	x
4)	Replace vidicon in camera			x	

<b>ACTIVITY</b>		<b>6 MO</b>	<b>Annual</b>	<b>5 YR</b>	<b>Reload</b>
<b>III. ELECTRICAL/MECHANICAL CHECKS (cont.)</b>					
<b>E. Helmets</b>					
1)	Clean	x	x	x	x
2)	Check operation of position sense switches in accordance with Sec. 3.3 of Users Manual	x	x	x	x
3)	Check operation and alignment of trunnions with trunnion test tool in accordance with Sec. 3.2 of Users Manual	x	x	x	x
<b>IV. FUNCTIONAL TESTS AND CHECKS</b>					
<b>A. System Tests</b>					
1)	With delegated hospital authority make test run to test operation of system	x	x	x	x
2)	Check timer operation and accuracy	x	x	x	x
<b>B. TV System</b>					
1)	Adjust for optimal image	x	x	x	x
<b>C. Helmet Hoist</b>					
1)	Check proper alignment of helmets to both bed and table; adjust as necessary	x	x	x	x
<b>D. Safety Systems</b>					
1)	Check treatment room door switches and system for proper operation	x	x	x	x
2)	Check all emergency stop switches for proper operation	x	x	x	x
3)	Check operation of hydraulic system safety circuits:				
a)	Temp	x	x	x	x
b)	Pressure	x	x	x	x
c)	Level	x	x	x	x
4)	Run helmet position tests using .01mm shim to insure proper operation of helmet sense switches	x	x	x	x
5)	Check treatment interrupt and treatment stop switches to insure proper system operation	x	x	x	x
6)	Run all mechanical and system function tests in accordance with Acceptance Test protocol			x	x

**NOTES**

- Sec. references to Users Manual are found in Binder #1, part G, Maintenance.
- Dose and dose distribution tests are customer tests and are not addressed in this document.