

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

No.: NR-8148-D-803-S DATE: June 8, 2004 PAGE 1 OF 4
(Previously NR-0606-D-103-U)

DEVICE TYPE: Vertical Teletherapy Unit

MODEL: Gammatron 1

MANUFACTURER/DISTRIBUTOR: Siemens Medical Solutions USA, Inc.
110 MacAlyson Court
Cary, NC 27511

SEALED SOURCE MODEL DESIGNATION: Atomic Energy of Canada
Dwg. C-20A75
ORNL Dwg. No. D-18631

ISOTOPE: Cobalt-60 MAXIMUM ACTIVITY: 2000 Curies

LEAK TEST FREQUENCY: Not Supplied

PRINCIPAL USE: (C) Medical Teletherapy

CUSTOM DEVICE: _____ YES X _____ NO

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DEVICE TYPE: Vertical Teletherapy Unit

DESCRIPTION:

The Gammatron 1 is a motor-driven floorstand teletherapy unit designed for stationary beam therapy. The treatment distance may vary with 50 cm being considered as the usual treatment distance. The height of the source above the floor can be adjusted from 2'4" minimum to 6'8" maximum. The unit is 9' in height and the distance between the source and the back of the unit is 6'6".

The unit may also be purchased with a moving field therapy option. This consists of two additional accessories - a motor-driven pendulum device and tracks for the transverse movement of the stand. The pendulum radius is adjustable with a range of 40-65 cm. The height of the pendulum radius is also variable between 36" and 54" from the floor.

The unit is described to have used a teletherapy source per AECL Dwg. C-20A75 or ORNL Dwg. D-18631 (standard international teletherapy capsule) and to contain up to 2000 curies.

The head consists of a spherical steel shell filled with tungsten. The source fits into a pocket in a 3" square, stationary tungsten source drawer. The shutter mechanism consists of four pairs of motor-driven tungsten plates operating independently from each other and in case of power failure, closing automatically by separate spring action.

The tungsten collimation assembly defines a field size which can be varied from 2 cm square to 14 cm square at 50 cm treatment distance (about 16E maximum subtended angle). The collimation assembly operates independently of the shutter mechanism.

The head will swivel 115E in each direction and tilt 90E forward from the downward direction and 30E back. Beam orientation can be limited by mechanical stops.

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DEVICE TYPE: Vertical Teletherapy Unit

DESCRIPTION: (Cont'd)

Lights on the control panel and in the room (optional) indicate the "on" and "off" conditions. If the power fails the shutter assembly automatically closes due to spring pressure. The unit must then be re-set to continue treatment. In an emergency, the collimation assembly can be manually closed, and the shutter system manually closed after the head cover is removed.

There is no uranium in this unit.

EXTERNAL RADIATION LEVELS:

Head leakage complies with NBS Handbook 73.

LIMITATIONS AND/OR OTHER CONSIDERATIONS OF USE:

Installation and source transfer are usually performed by Siemens Medical of America, Inc. under its AEC License No. 29-105981-1. Both installations and source transfer involve exchanging the source drawer using a specially designed shipping container with two drawer compartments.

SAFETY ANALYSIS SUMMARY:

Siemens Medical Solutions USA, Inc., has not sold or distributed the Gammatron 1 in over ten years and none are still in use as produced. Siemens Medical Solutions USA, Inc., has no plans to commercially distribute the product and has made no changes to the product since its initial registration.

REFERENCES:

See letter from Siemens Medical Solutions USA, Inc., requesting of the transfer of certificate to inactive status.

