



AKRON GENERAL
MEDICAL CENTER

We care for life

AKRON GENERAL MEDICAL CENTER / 400 WABASH AVENUE / AKRON, OHIO 44307 / 216-384-6000
Michael A. West
President

May 20, 1987

Materials Licensing Section
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Sir:

This is in response to your letter of April 24, 1987 requesting additional information regarding our application to renew NRC License Number 34-03362-03. The control number is 78327.

The item-by-item responses are as follows:

1. Mr. Von Wolfe, Director of Radiology, is the administrative member of the Radiation Safety Committee.
2. The Radiation Safety Committee will meet at least quarterly.
3. The procedure to be followed to ensure that only the patient is in the treatment room before turning the primary beam of radiation on is enclosed. An audible alarm will be installed to indicate that the door has been opened. This will eliminate the need for the operator to visually monitor the door continuously between exiting the treatment room and the beginning of treatment.
4. A description of the monthly spot-check measurements is enclosed. The exposed TLD's are given to the teletherapy physicist for read-out and calculation of the difference between the measurement and the anticipated output. The records of the monthly spot-check measurements will be reviewed by the teletherapy physicist within fifteen days.

RECEIVED

MAY 29 1987

REGION III

8801250076 870722
REG3 LIC30 PDR
34-03362-03

VHA

Member of the Voluntary
Hospitals of America System

MAY 28 1987



5. The unit does not have and has never had an integral beam stop.

6. One of the following individuals will perform the leak test on the teletherapy unit:

D. E. Starchman, Ph.D., Certified Radiological
Physicist, ABR

D. L. Hykes, M.S., Certified Radiological Physicist,
ABR

W. R. Hedrick, Ph.D., Certified Diagnostic Radio-
logical and Medical Nuclear Physicist, ABR

L. R. Milavickas, Ph.D., In the examination process
for Therapeutic Radiological Physics, ABR

7. The following leakage test records will be maintained for
five years:

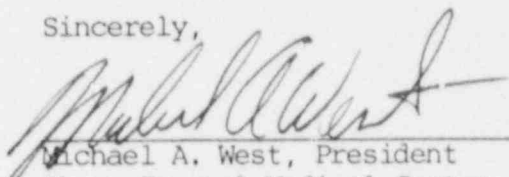
- a. Identity of source radionuclide
- b. Identity of source model number
- c. Measured activity of test sample expressed in
microcuries
- d. Description of method used to measure leakage
- e. Date of each test
- f. Signature of the individual performing the test

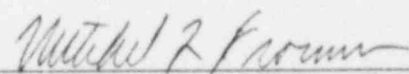
8. Changing indicator lights on the unit on the console and
by the door will be performed by in-house staff. The
radiation therapy technologists (L. Herrick and D. LeBeau)
have been performing these procedures over the past nine
plus years. In addition, L. R. Milavickas, Ph.D., who is
in the examination process for therapeutic radiological
physicist, will also perform these procedures. A description


May 20, 1987

of each operation is enclosed. All other maintenance or repair operations on the teletherapy unit will be performed by a company authorized to service teletherapy units.

Sincerely,



Michael A. West, President
Akron General Medical Center

Mitchel L. Fromm, M.D., Chairman
Department of Radiation Oncology

Louis R. Milavickas, Ph.D.
Department of Radiation Oncology

LRM:jh

AKRON GENERAL MEDICAL CENTER
AKRON, OH 44307
34-03362-03

Safety Spot Checks

1. Turn the power to the unit "on". (The source should still be in the "off" position.) Press the emergency off button inside the treatment room. Power should be completely shut down.
2. Turn the power to the unit "on". Turn the source to the "on" position. The source "on" indicator lights inside on the unit should change from green ("off" position) to red ("on" position). Check that the "on"- "off" lights on the control console work. Check that the red light to the left of the door is lit when the source turns "on". Press the emergency off button on the control console. Power should be completely shut down.
3. Turn the power to the unit "on". Allow the source to go to the "on" position. Open the door to the treatment room. The source should return to the "off" position. The power to the unit should remain "on". Check all indicator lights listed in #2 above to be sure they return to the "off" indications. Close the door to be sure the source does not return to the "on" position.
4. Allow the timer to turn the source "off". Check all indicator lights listed in #2 above to be sure they return to the "off" indication (green or white).
5. Set the timer for a 1-minute exposure. Allow the timer to turn the source "off". Compare the time of exposure with that from a timepiece with a second indicator.
6. Check to be sure the accessory television monitoring (for patient viewing during treatment) system is working properly.
7. With the source "off", open the door to the treatment room from inside the treatment room.
8. Set source head angulation ± 65 degrees. Check if source can move to the "on" position.
9. When checks of the above safety devices indicate defects or malfunctions and there is a delay before the defects or malfunctions can be corrected, the Radiation Safety Officer shall be notified. The use of the teletherapy unit shall be discontinued until the Radiation Safety Officer evaluates the status of the unit, and if appropriate, authorizes the continues use of the unit.

AKRON GENERAL MEDICAL CENTER
AKRON, OHIO 44307
34-03362-03

OUTPUT SPOT-CHECK MEASUREMENTS

Radiation Therapy requires accurate and reproducible treatment geometry in order to direct the radiation to the area of interest within the patient. There are certain machine parameters (field lights, distance indicator light, collimator assembly, cross hairs and dial indicators) which may become misaligned easily as a result of routine use, mechanical stress and vibrations.

The TLD holder is not designed solely for the purpose of irradiating the TLD's for the output consistency check. It has several other design features which should be used to help insure machine performance.

The following should be done once a month:

1. Set head angle to 0 degrees
2. Set collimator angle to 0 degrees
3. Set gantry angle to 0 degrees
4. a. Place the TLD holder on the table at 80 SSD with the distance indicator light. Verify distance with front pointer. Report 0.5 cm or greater discrepancy.
b. Using the front pointer and ruler, measure an SSD of 90 cm and check the distance indicator light. (This can be checked after everything else is done.) Report 0.5 cm or greater discrepancy.
5. Set a 10 cm x 10 cm field using the collimator field size and indicators. This should match the 10 cm x 10 cm field marked in ink on the TLD holder. Report a 5 mm or greater discrepancy.

NOTE: DO NOT set the light field up to match the ink field!!

6. Rotate the collimator in both directions 180 degrees from the original position and make sure the light stays symmetrical about the 10 cm x 10 cm ink field at the 90 degree and 180 degree positions. If the field appears to wander outside at these positions, report it to the physicist.
7. The Cross-hairs should be checked in the same manner. Rotate the collimator and see if the cross-hairs wander from the original position. Report a 0.5 cm or greater discrepancy.

8. a. Set the collimator back to the zero position and insert a film into the holder. Irradiate the film. This is to verify light field and x-ray field alignment. Report differences greater than 5 mm to the physicist.
- b. Open the collimators as far as possible (normally this is a 32 cm x 32 cm or 35 cm x 35 cm field). Draw a 30 cm x 30 cm square (using very heavy pressure) on an XTL therapy port film paper cassette. Place the film on the therapy table and adjust the height of the table until the open collimator field matches the field drawn on the paper cassette. Irradiate the film. Report differences in x-ray field-light field alignment greater than 5 mm.
9. Run 2 TLD's to a dose of 200 rads at 80 cm SSD. This is for the output consistency check.
10. Run 2 TLD's to a dose of 50 rads x 4 exposures at 80 cm SSD. This is for the timer check.

AKRON GENERAL MEDICAL CENTER
Department of Radiation oncology

SAFETY SPOT CHECKS

EMERGENCY INTERLOCK BUTTONS	Inside Room _____	Date Checked _____	By _____	OK
	Outside Room _____	Date Checked _____	By _____	OK
DOOR INTERLOCK		Date Checked _____	By _____	OK
RADIATION INDICATOR LIGHTS	ON UNIT green _____	Date Checked _____	By _____	OK
	red _____	Date Checked _____	By _____	OK
	ON CONSOLE green _____	Date Checked _____	By _____	OK
	red _____	Date Checked _____	By _____	OK
	DOOR LIGHT green _____	Date Checked _____	By _____	OK
	red _____	Date Checked _____	By _____	OK
TIMER TERMINATES EXPOSURE		Date Checked _____	By _____	OK
TIMER 1-MINUTE EXPOSURE		Date Checked _____	By _____	OK
TELEVISION MONITOR		Date Checked _____	By _____	OK
DOOR OPERATION (INSIDE)		Date Checked _____	By _____	OK
RESTRICTION OF SOURCE HEAD ANGULATION		Date Checked _____	By _____	OK

OUTPUT SPOT CHECKS

Distance verification with front pointer at 80 cm

Discrepancy _____ Reported to _____ Date _____

Distance verification with front pointer and ruler at 90 cm

Discrepancy _____ Reported to _____ Date _____

10 cm x 10 cm field size matched to 10 cm x 10 cm on TLD holder

Discrepancy _____ Reported to _____ Date _____

Rotation both directions 180 degrees checking light symmetry

Discrepancy _____ Reported to _____ Date _____

Crosshair check with both rotations

Discrepancy _____ Reported to _____ Date _____

Verification of 10 cm x 10 cm light field and radiation field alignment

Discrepancy _____ Reported to _____ Date _____

Verification of 35 cm x 35 cm field

Film irradiated _____ Discrepancy reported to _____ Date _____

2 TLD's exposed to 200 rads at 80 cm SSD Exposure time _____

2 TLD's exposed to 50 rads x 4 exposures at 80 cm SSD Exposure time _____

AKRON GENERAL MEDICAL CENTER
Department of Radiation Oncology
Akron, Ohio

INSTRUCTIONS TO THE OPERATOR

1. After patient set-up, check that no other persons are present in the treatment room.
2. Exit the treatment room, closing the door as you exit.
3. If the audible alarm sounds, re-check the treatment room for persons other than the patient. Exit the treatment room, closing the door as you exit.
4. Turn on the primary beam for treatment.
5. If a door interlock interruption occurs, re-check the treatment room for persons other than the patient. Exit the treatment room, closing the door as you exit. Resume treatment.

AKRON GENERAL MEDICAL CENTER
Department of Radiation Oncology
Akron, Ohio

REPLACEMENT OF BULBS

BEAM ON, BEAM OFF, and RESET Lamps in Control Console - To replace these bulbs, proceed as follows:

1. Turn the keyswitch on the control console to OFF.
2. Unscrew the lens cap with the spanner wrench supplied.
3. Insert the lamp puller over the bulb and withdraw the bulb.
4. Insert a new bulb.
5. Replace the lens cap.

Indicator Lamps in Head Display Panel - To replace these indicator lamps, proceed as follows:

1. Using the hand control, move the arm to a convenient position.
2. Turn the keyswitch on the control console to OFF.
3. Remove the screw in the top of the sourcehead cover and lift off the cover.
4. Reach inside and disconnect the two leads attached to the indicator lamp.
5. Squeeze the two black spring clips between the thumb and index and push out the indicator lamp.
6. Insert a new indicator lamp of the same colour.
7. Reconnect the leads.
8. Switch on electrical power and check that the replacement lamp operates before replacing the sourcehead cover.

Indicator Lamps at Door - To replace these indicator lamps, proceed as follows:

1. Turn the keyswitch on the control console to OFF.
2. Unscrew the lens cap with crescent wrench.
3. Remove bulb.
4. Insert new bulb.
5. Replace the lens cap.

APR 24 1987

Akron General Medical Center
ATTN: Michael West, President;
R. G. Workman, M.D., Chairman
Radiology Department
400 Wabash Avenue
Akron, OH 44307

Gentlemen:

This is in reference to your December 19, 1984, request to renew and January 2, 1987, request to amend NRC License Number 34-03362-03. As discussed in a telephone conversation between Ms. Linda Herrick and Dr. Dale Starchman, of your staff, and me on April 23, 1987, we have issued an amendment (Number 04) authorizing you to relocate your teletherapy unit. In order to complete our review and issue renewal of the license for a 5 year period, however, we need information on the following items:

- OK 1. Please note that 10CFR Part 35 has been revised, effective April 1, 1987, to include new procedures for teletherapy licenses issued or renewed after that date. Your renewal application did not specify an administrative member for your Radiation Safety Committee, the frequency of the Committee's meetings (see Section 35.22), procedures for ensuring only patient is in room prior to initiating treatment (see Section 35.610), procedures specified for and review of monthly spot checks in Section 35.634, or checking beam stops on unit in old location as specified in Section 35.634. Please review the referenced sections and incorporate into your program, since your license will be renewed in accordance with the revised Part 35 (copy enclosed).
- OK 2. Your application indicates that you will continue to perform your own "leak tests" on the teletherapy unit. Please specify the names and qualifications of the individual(s) who will perform the test and analyze the results. In addition, please indicate the type records that will be maintained.
- OK 3. Please clarify who will be performing any maintenance or repair operations on the teletherapy unit. If you desire to have in-house staff perform these operations, you will need to specify the name(s) and qualifications of the individual(s) performing, the procedures, and a description of each operation. We have enclosed a copy of NRC Information Notice No. 87-18 which addresses this subject.

If you have any questions or require clarification on any of the information stated above, you may contact us at (312) 790-5625.

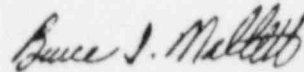
~~8708210067~~ 2pp

Akron General Medical Center

2

We will continue our review of your renewal application upon receipt of the information requested in this letter. Please reply in duplicate, within 30 days, and refer to Control Number 78327.

Sincerely,



Bruce S. Mallett, Ph.D., Chief
Materials Licensing Section

Attachments:

1. Amendment No. 09
2. New 10 CFR Part 35
3. IE Information Notice 87-18

B.S.M.
7/28/87