NRC FORM 374
(7-94)

U.S. NUCLEAR REGULATORY COMMISSION

PAGE 1 OF 2 PAGES

MATERIALS LICENSE

Amendment No. 16

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

301232

Licensee	
1. Trinity Health System Trinity West d/b/a Trinity Medical Center West 2. Department of Radiology 4000 Johnson Road Steubenville, OH 43952	In accordance with letter dated May 15, 1996 3. License Number 34-06578-01 is amended in its entirety to read as follows: 4. Expiration Date July 31, 2003 5. Docket or Reference No. 030-00419

6. Byproduct, Source, and/or Special Nuclear Material	7. Chemical and/or Physical Form	8. Maximum Amount that Licensee May Possess at Any One Time Under This License
A. Cobalt-60	A. Sealed sources model designation Neutron Products, Inc. NPI-20-6000W	A. 6,500 curies per source
B. Uranium depleted in uranium-235	B. Solid metal	B. 41 kilograms total possession limit

9. Authorized Use:

A. Medical use described in 10 CFR 35.600 in an AECL Theratron 80 teletherapy unit.

B. Shielding in a teletherapy unit.

CONDITIONS

10. Location of Use: Cobalt Room, Department of Radiology, Trinity Medical Center West, 4000 Johnson Road, Steubenville, Ohio.

11. Radiation Safety Officer: William Hunter Vaughan, M.D.

12. A. Authorized Users: Gurijala N. Reddy, M.D., James M. Hughes, M.D., Mark G. Trombetta, M.D., Gerald R. Medwick, D.O. and Tarit K. Dutta, M.D.

B. Teletherapy Physicist: Marcel M. Szal, M.S.

070087

COPY 2

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number: 34-06578-01

Docket or Reference Number: 030-00419

Amendment No. 16

13. The licensee is exempted from decommissioning financial assurance requirements for possession of licensed material in sealed sources in quantities greater than the limits in 10 CFR 30.35(d) for the purpose of source changes only. This exemption is granted for no more than 30 days for any one source change.

14. The licensee shall maintain records of information related to decommissioning at the address specified in License Condition 10. as specified in 10 CFR 30.35(g) until this license is terminated by the Commission.

15. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below, except for minor changes in the medical use radiation safety procedures as provided in 10 CFR 35.31. The U.S. Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.

    A. Application received March 19, 1986 (with attachments); and

    B. Letters dated March 14, 1991 (with attached five years inspection/survey reports), February 11, 1993, June 30, 1993 and May 15, 1996.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date September 18, 1996

By Loren J. Hurstel
Nuclear Materials Licensing Branch, Region III

COPY

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

(FOR LFMS USE)
INFORMATION FROM LTS

PROGRAM CODE: 02300
STATUS CODE: 0
FEE CATEGORY: 7A 2B
EXP. DATE: 19980731
FEE COMMENTS: CODE 21
DECOM FIN ASSUR REQD: N

LICENSE FEE TRANSMITTAL

A. REGION

S8

1. APPLICATION ATTACHED
   APPLICANT/LICENSEE: TRINITY WEST
   RECEIVED DATE: 960419
   DOCKET NO: 3000419
   CONTROL NO.: 301232
   LICENSE NO.: 34-06578-01
   ACTION TYPE: AMENDMENT

2. FEE ATTACHED
   AMOUNT: X
   CHECK NO.: ADDL INFO 399681-58

3. COMMENTS

SIGNED S. Hensley
DATE 5/2/96

B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN FEE IS DUE AND HAS BEEN ENTERED /✓/)

1. FEE CATEGORY AND AMOUNT: 7A 2B FEE NOT REQUIRED

2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED FOR:
   AMENDMENT ✓
   RENEWAL
   LICENSE

3. OTHER

SIGNED SC
DATE 5/2/96

RECEIVED
MAY 13 1996
REGION III

RECEIVED BY LFDCB
Date May 2, 1996
Log May 1 III
By SC
Date Completed 5/2/96

1996 MAY -2 PM 4:11

LAW OFFICES
BRICKER & ECKLER
100 SOUTH THIRD STREET
COLUMBUS, OHIO 43215-4291
(614) 227-2300

LAWRENCE E. PLISKIN
(614) 227-2317

TELEFAX: (614) 227-2390
Internet: LPLIS@BE.BRICKER.COM

April 12, 1996

Mr. Charles Gill
U.S. Nuclear Regulatory Commission
Region III
801 Warrenville Road; 2nd Floor
Lisle, Illinois 60532-4351

BY CERTIFIED MAIL

Re: Control No. 399667
Ohio Valley Hospital/Trinity East
NRC License No. 34-13317-02

Dear Mr. Gill:

We represent Ohio Valley Hospital. We previously advised you of the delay of the proposed affiliation of Ohio Valley Hospital and St. John Medical Center of Steubenville, Ohio. We are writing to tell you that the affiliation is now scheduled for May 31, 1996. A new Ohio nonprofit corporation, Trinity Health System, will become the corporate member of both Ohio Valley and St. John. Both hospital corporations will continue to exist, but Ohio Valley will change its name to "Trinity East" and St. John will change its name to "Trinity West." This is not a merger.

We have previously provided you with our response to the additional information you requested from Ohio Valley concerning this transaction (Control No. 399667). Such information is still valid. There are no changes to the Ohio Valley/Trinity East response except for the change in the affiliation date.

If you have any questions regarding this matter, please do not hesitate to contact me.

Very truly yours,

Lawrence E. Pliskin

ADD'L info-399681
FEE NOT REQUIRED

RECEIVED
APR 19 1996
REGION III

BE1-1\98147-1

APR 19 1996

301232

SEP 2 4 1996

Angelo G. Calbone
Executive Vice Present and
Chief Operating Officer
Trinity Health System
Trinity West d/b/a
Trinity Medical Center West
4000 Johnson Road
Steubenville, OH 43952

Dear Mr. Calbone:

Enclosed is Amendment No. 16 to your NRC Material License No. 34-06578-01 in accordance with your request.

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or questions, please notify the U.S. Nuclear Regulatory Commission, Region III office at (630) 829-9887 so that we can provide appropriate corrections and answers.

We have reviewed the information regarding the transfer of ownership described in your letter dated May 15, 1996. Based on the information provided, the NRC consents to the transaction with no further questions. Also, plrease note that the expiration date on your license has been extended five years.

Please be advised that your license expires at the end of the day, in the month, and year stated in the license. Unless your license has been terminated, you must conduct your program involving byproduct materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

1. Operate in accordance with NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.

2. Notify NRC, in writing, within 30 days:

   a. When an authorized user, Radiation Safety Officer, or Teletherapy Physicist permanently discontinues performance of duties under the license or has a name change; or

   b. When the licensee's mailing address changes (no fee is required if the location of byproduct material remains the same).

301232

3. In accordance with 10 CFR 30.36(b) and/or license condition, notify NRC, promptly, in writing, and request termination of the license when you decide to terminate all activities involving materials authorized under the license.

4. Request and obtain a license amendment before you:

   a. Receive or use byproduct material for a clinical procedure permitted under Part 35 but not permitted by your license issued pursuant to this Part;

   b. Permit anyone, except individuals described in 10 CFR 35.13(b), to work as an authorized user under the license;

   c. Change Radiation Safety Officers or Teletherapy Physicists;

   d. Order byproduct material in excess of the amount, or radionuclide, or form different than authorized on the license;

   e. Add or change the areas of use or address or addresses of use identified in the license application or on the license; or

   f. Change ownership of your organization.

5. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date of your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of byproduct material after your license expires is a violation of NRC regulations. A license will not normally be renewed, except on a case-by-case basis, in instances where licensed material has never been possessed or used.

In addition, please note that NRC Form 313 requires the applicant, by his/her signature, to verify that the applicant understands that all statements contained in the application are true and correct to the best of the applicant's knowledge. The signatory for the application should be the licensee or certifying official rather than a consultant.

You will be periodically inspected by NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC will result in enforcement action against you. This could include issuance of a notice of violation, or imposition of a civil penalty, or an order suspending, modifying or revoking your license as specified in the General Policy and Procedures for NRC Enforcement Actions. Since serious consequences to employees and the public can result from failure to comply with NRC requirements,

prcmpt and vigorous enforcement action will be taken when dealing with licensees who do not achieve the necessary meticulous attention to detail and the high standard of compliance which NRC expects of its licensees.

Sincerely,

Original Signed By
Charles F. Gill
Nuclear Materials Licensing Branch

License No.: 34-06578-01
Docket No.: 030-00419

Enclosure: Amendment No. 16

DOCUMENT NAME: M:\03000419.CL6

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	DNMS/RIII	E							
NAME	CFGILL:jaw	C							
DATE	09/20/96								

OFFICIAL RECORD COPY

ST. JOHN
MEDICAL CENTER

St. John Heights
Steubenville, Ohio
43952

614-264-8000

MAY 15,1996

MR. CHARLES GILL
U.S. NUCLEAR REGULATORY COMMISSION
REGION III
801 WARRENVILLE ROAD
LISLE, IL. 60532-4351

301232

RE: License Number 34-06578-01
(Control #'s 399681 & 301232)

Dear Mr. Gill:

In follow-up to your discussion this afternoon with Mr. David Arnold, and Mr. Al Williams, of our facility, please accept the following clarifications/corrections to our letters of December 20, 1995 and January 10, 1996.

Effective June 1, 1996, St. John Medical will become Trinity Medical Center West, as a result of an affiliation with the Ohio Valley Hospital.

Several items discussed within our prior correspondence have changed, due to ongoing negotiations leading up to the closing date of the affiliation.

In an effort to clarify these changes, please accept the following revision to the questions answered in the document submitted on December 20, 1995 as it relates to our teletherapy license.

a. The name of the organization, if changed.

Trinity Health System
380 Summit Avenue
Steubenville, Ohio 43952

b. Identification of any changes in personnel named in the license, including any required information on personnel qualifications.

Change the teletherapy physicist from Yong K. Park to Marcel M. Szal.

Add the following (see attached) Authorized Users.

Gill Memorial Hospital
1901 - 1968

St. John Medical Center
Since 1960

Sisters of St. Francis
Sylvania, Ohio

c. An indication of whether the seller will remain in business without the license.

St. John Medical Center will remain in business as Trinity West, d/b/a/ Trinity Medical Center West.

d. A complete and clear description of the transaction.

Ohio Valley and St. John will affiliate whereby a new Ohio nonprofit corporation, **Trinity Health System**, will become the corporate member of Ohio Valley and of St. John. Both hospital corporations will continue to exist, with Ohio Valley changing its name to Trinity East, d/b/a/ Trinity Medical Center East and St. John changing its name to Trinity West, d/b/a/ Trinity Medical Center West.

e. An indication of any planned changes in organization, location, facilities, equipment, procedures or personnel.

Due to contractual arraignments, we will be changing the Physicist(s), and Authorized Users.

No changes in equipment or facilities are planned at this time.

While the location is not changing, the street address will change from St. John Heights to **4000 Johnson Road.**

The R.S.O. remains the same.

f. A detailed description of any changes in the use, possession or storage of the licensed materials.

There are no proposed changes in the use, possession or storage of licensed materials.

g. An indication of whether all surveillance items and records, including radioactive material inventory and accountability requirements, will be current at the time of transfer. A description of the status of all surveillance requirements and records, e.g., calibrations, leak tests, surveys, etc., should be provided.

All surveillance items and records will be current at the time of transfer.

h. **A description of the status of the facility. Specifically, the presence or absence of contamination should be documented. If contamination is present, will decontamination occur before transfer? If not, does the successor company agree to assume full liability for the decontamination of the facility or site?**

There is no known contamination present. In the event contamination is present, Trinity Health System agrees to assume full liability for any decontamination of the facility or site.

i. **A description of any decontamination plans, including financial assurances arrangements of the transferee, should be provided.**

The transferee assumes full responsibility for any cleanup at the time of transfer.

j. **An indication of whether the transferor and transferee agree to the change in ownership or control of the licensed material and activity. If so, documentation stating this should be provided.**

Pursuant to the proposed affiliation, agreement to the change in ownership is indicated by the signature of the transferor, St. John Medical Center, and the transferee, Trinity Health System, at the bottom of this letter.

k. **A commitment by the transferee to abide by all constraints, conditions, requirements, representations and commitments identified in the existing license. If not, the transferee must provide a description of its program to assure compliance with the license and regulations.**

Trinity Health System, as transferee, agrees to abide by all constraints, conditions, requirements, representations and commitments identified in the existing license.

It is our understanding that all the above changes can and will be included under the fee submitted in December. We thank you for your guidance and attention

to this matter.

Enclosed please a find a listing of the additional Authorized Users and Physicists, as well as, resumes and copies of referenced licenses. If there are any questions regarding this matter please do not hesitate to contact Mr. David Arnold, at 614-264-8158, or myself at 614-264-8303.

Sincerely,

Transferee:
Trinity Health System

By _____
Angelo G. Calbone,
Executive Vice President and
Chief Operating Officer

Transferor:
St. John Medical
Center of
Steubenville, Ohio

By _____
Angelo G. Calbone,
President / CEO

ATTACHMENT

PHYSICIAN	ABR CERTIFIED	PREVIOUS NRC LICENCE	
JAMES M. HUGHES	YES	37-10363-01	HUMAN USE
MARK G. TROMBETTA	YES	37-10363-01	HUMAN USE
GERALD MEDWICK	YES	37-10363-01	HUMAN USE
TARIT K. DUTTA	YES	37-10363-01	HUMAN USE
JOHN HYLAND	YES	PENDING ON 37-10363-01	HUMAN USE
PHYSICIST			
MARCEL M. SZAL	YES	37-11562-01	NON HUMAN USE
FRANK P. OTTINO	YES	37-11562-01	NON HUMAN USE
TONY G. COMBINE	YES	37-11562-01	NON HUMAN USE
DAVID WONDERLY	YES	37-11562-01	NON HUMAN USE
RAJIV SHINGAL	PENDING		NON HUMAN USE

MATERIALS LICENSE

Amendment No. 03

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee	
1. Triangle Radiation Oncology Associates, Inc. 2. 701 Fifth Street Beaver, Pennsylvania 15009	In accordance with letter dated February 9, 1987, 3. License number 37-20758-01 is amended in its entirety to read as follows: 4. Expiration date November 30, 1989 5. Docket or Reference No. 030-22039

6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
A. Cobalt 60	A. Teletherapy sealed sources (AECL Model C-146 or C-151	A. 18,352 curies 2 sources of not more than 9176 curies each

9. Authorized use

A. One source in a AECL Theratron 780 for the treatment of humans. One source in its shipping container to be in possession of the licensee as necessary to the replacement of the source in the teletherapy unit only.

CONDITIONS

10. Licensed material shall be used only at North Hills Passavant Hospital Professional Office Building, Room LL115, Pittsburgh, Pennsylvania.

11. Licensed material shall be used by James P. Concannon, M.D., James Hughes, M.D. Gerald Medwick, D.O., or Julian W. Proctor, M.D.

12. A. Teletherapy sources shall be tested for leakage at intervals not to exceed 6 months. Records of test results shall be kept in units of microcuries and maintained for inspection by the Commission. In the absence of a certificate from a transferor indicating that a test has been made within 6 months before the transfer, a source received from another person shall not be used until tested for leakage.

B. The tests shall be sufficiently sensitive to detect 0.05 microcurie of contamination on the test sample.

(12. continued)

C. The test sample shall be taken from selected accessible surfaces of the teletherapy head. The selected accessible surfaces should be those surfaces on which one might expect contamination (if there were to be leakage) to accumulate and shall include the inner surface of the most frequently used treatment cones or beam collimating device. The test sample shall be taken with the source in the "off" position.

D. If the test revels the presence of 0.05 microcurie or more of removable contamination, the licensee shall immediately withdraw the source from use and take action to prevent spread of contamination. A report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety and Safeguards Branch, 631 Park Avenue, King of Prussia, Pennsylvania 19406. The report shall specify the source involved, the test results, and corrective action taken.

13. Before initiation of a treatment program, each teletherapy unit shall be equipped with electrical or mechanical stops limiting use of the primary beam of radiation so as to ensure compliance with Section 20.105(b) of 10 CFR Part 20 as evidenced by a radiation survey. Necessary use restrictions shall be fully described in radiation survey reports submitted in accordance with Condition 16. of this license.

14. A set of written emergency instructions shall be posted at the teletherapy machine control. These instructions shall inform the machine operator of the procedure to be followed should he be unable to turn the machine's primary beam of radiation "off" with the controls outside the treatment room.

15. A. Access to the teletherapy room shall be controlled by a door at each entrance. Such doors shall be normally closed.

B. Each entrance to the teletherapy room shall be equipped with an electrical interlock system that will turn the teletherapy machine's primary beam of radiation "off" immediately upon opening of any entrance door. The interlock system shall be connected in such a manner that the teletherapy machine's primary beam of radiation cannot be turned "on" until all treatment room entrance doors are closed and the beam "on-off" control is reset at the control panel.

C. Electrical interlocks on entrance doors to the teletherapy room shall be tested for proper operation at least once every 6 months. Records of test results shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.

D. In the event of malfunction of any door interlock, the teletherapy machine control shall be locked in the "off" condition and not used, except as may be necessary for repair or replacement of the interlock system, until the interlock system is shown to be functioning properly.

(continued)

16. Before initiation of a treatment program, and subsequent to each installation of a teletherapy source, radiation surveys and tests shall be performed in accordance with the following:

A. A radiation survey shall be made of:

(i) The teletherapy source housing, with the teletherapy source in the "off" position. The maximum and average radiation levels at 1 meter from the teletherapy source in the "off" position shall not exceed 10 milliroentgens per hour and 2 milliroentgens per hour, respectively.

(ii) All areas adjacent to the treatment room with the teletherapy source in the "on" position. The survey, except Item (c), shall be performed with a phantom in the primary beam of radiation and shall clearly establish:

(a) That radiation levels in restricted areas are not likely to cause personnel exposure in excess of the limits specified in Section 20.101 of 10 CFR Part 20,

(b) That quantities of radiation in unrestricted areas do not exceed the limits specified in Section 20.105(b) of 10 CFR Part 20.

(c) The intensity of the primary beam of radiation at a specified distance from the teletherapy source.

B. Tests shall be made to determine proper operation of:

(i) Electrical interlocks on entrance doors to the teletherapy treatment room.

(ii) The teletherapy source "on-off" indicators, both at the source housing and on the teletherapy machine control panel.

(iii) Electrical or mechanical stops installed for the purpose of limiting use of the primary beam of radiation (restriction of source housing angulation or elevation, carriage or stand travel and operation of the beam "on-off" mechanism).

(iv) The teletherapy treatment timing device.

C. A report of the results of the above surveys and tests shall be sent to the U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety and Safeguards Branch, ~~631 Park Avenue~~, King of Prussia, Pennsylvania 19406, not more than 30 days after each installation of a teletherapy source.

475 Allendale Road

(continued)

17. A. Any changes made in the treatment room shielding, location of the unit within the treatment room, or use of the teletherapy unit that could result in increased radiation levels in areas outside the teletherapy treatment room shall be evaluated by a radiation survey made in accordance with Condition 16, and reported to the Commission within 30 days following completion of the change(s).

    B. Relocation of the teletherapy unit to a new facility is not permitted without prior approval all the plans and details by the Commission. Following such approval and relocation, a radiation survey shall be made in accordance with Condition 16, and reported to the Commission within 30 days after completion of the move.

18. The following shall be performed only by persons specifically licensed by the Commission or an Agreement State to perform such services:

    A. Installation, relocation, or removal of teletherapy units containing sources.

    B. Source exchange.

    C. Any maintenance or repair operations on a teletherapy unit involving work on the source drawer, the shutter, or other mechanism that could expose the source, reduce the shielding around the source, or compromise the safety of the unit and result in increased radiation levels.

19. Pursuant to 10 CFR Part 40, "Domestic Licensing of Source Material", the licensee is authorized to possess, use, transfer, and import up to 999 kilograms of uranium contained as shielding material in the teletherapy units authorized by this license.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number
37-20758-01

Docket or Reference number
030-22039

Amendment No. 03

(continued)

20. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

A. application dated August 28, 1984
B. ALARA Program dated August 28, 1984
C. letter dated November 1, 1984
D. letter dated February 14, 1985
E. letter dated February 26, 1985
F. letter dated April 18, 1986
G. Letter dated February 9, 1987

For the U.S. Nuclear Regulatory Commission

Date MAR 0 5 1987

By James M Johnson

Nuclear Materials Safety and
Safeguards Branch, Region 1
King of Prussia, Pennsylvania 19406

NRC FORM 374
(10-89)

U.S. NUCLEAR REGULATORY COMMISSION

MATERIALS LICENSE

Amendment No. 31

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 39, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee	
1. The Medical Center, Beaver, PA., Inc.	In accordance with letter dated March 19, 1993, 3. License number 37-11562-01 is amended in its entirety to read as follows:
2. 1000 Dutch Ridge Road Beaver, Pennsylvania 15009	4. Expiration date May 31, 1995
	5. Docket or Reference No. 030-03143

6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
A. Any byproduct material identified in 10 CFR 35.100	A. Any radiopharmaceutical identified in 10 CFR 35.100	A. As needed
B. Any byproduct material identified in 10 CFR 35.200	B. Any radiopharmaceutical identified in 10 CFR 35.200	B. As needed
C. Any byproduct material identified in 10 CFR 35.300	C. Any radiopharmaceutical identified in 10 CFR 35.300	C. As needed
D. Any byproduct material identified in 10 CFR 35.400	D. Any brachytherapy source identified in 10 CFR 35.400	D. 2 curies
E. Any byproduct material identified in 10 CFR 31.11	E. Prepackaged Kits	E. As needed
F. Uranium depleted in Uranium 235	F. Cadmium plated metal	F. 160 kilograms
G. Strontium 90	G. Sealed source	G. 10 millicuries
H. Iridium 192	H. Sealed source (BYK Mallinckrodt Model CILBV)	H. Not to exceed 10 curies per source and 20 curies total

9. Authorized use

A. Any uptake, dilution and excretion procedure approved in 10 CFR 35.100.
B. Any imaging and localization procedure approved in 10 CFR 35.200.
C. Any radiopharmaceutical therapy procedure approved in 10 CFR 35.300.
D. Any brachytherapy procedure approved in 10 CFR 35.400.
E. *In vitro* studies.
F. Shielding in a linear accelerator.
G. Non-human use. For calibrations and checking of instruments.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number: 37-11562-01
Docket or Reference number: 030-03143
Amendment No. 31

(9. continued)

H. For use in a Nucletron Corporation MicroSelectron-HDR remote after loading brachytherapy unit for the treatment of humans. One source in its shipping container as necessary to the replacement of the source in the irradiation device only.

CONDITIONS

10. Licensed material may be used only at the licensee's facilities at 1000 Dutch Ridge Road, Beaver, Pennsylvania.

11. The Radiation Safety Officer for this license is Thomas W. McCreary, M. D.

12. The Medical Physicists for this license are Tony G. Combine, Frank P. Ottino, David Wonderly, and Marcel Szal[illegible].

13.

Authorized Users:	Material and Use:
Thomas W. McCreary, M.D.	35.100; 35.200; 35.300 In vitro studies Depleted uranium for shielding Strontium 90, sealed source for calibration
Steven L. Anolik, M.D.	35.400 Depleted uranium for shielding Strontium 90, sealed source for calibration Iridium 192
Edward Estrin, M.D.	35.100; 35.200 In vitro studies
Mark G. Trombetta, M.D.	35.400 Depleted uranium for shielding
James M. Hughs, M.D.	35.400 Depleted uranium for shielding Strontium 90, sealed source for calibration Iridium 192
Gerald Medwick, M.D.	35.400 Depleted uranium for shielding Strontium 90, sealed source for calibration Iridium 192
Julian W. Proctor, M.D.	35.400 Depleted uranium for shielding Strontium 90, sealed source for calibration Iridium 192

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number 37-11562-01
Docket or Reference number 030-03143
Amendment No. 31

(13. continued) CONDITIONS

Tarit Kanti Dutta, M.D.	35.400 Depleted uranium for shielding Strontium 90, sealed source for calibration Iridium 192
Anthony Hovenden, M.D.	35.400 Depleted uranium for shielding Strontium 90, sealed source for calibration Iridium 192

14. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material so that at no time is a quantity of radioactive material possessed in excess of a quantity which requires decommissioning funding in accordance with 10 CFR 30.35(d), 10 CFR 40.36(b) or 10 CFR 70.25(d).

15. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

A. Application dated July 6, 1989
B. Letter dated January 30, 1990
C. Letter dated March 13, 1990
D. Letter dated April 18, 1990
E. Application dated May 13, 1991
F. Letter dated April 3, 1992
G. Letter dated May 4, 1992
H. Letter dated September 24, 1992
I. Letter dated November 19, 1992
J. Letter dated March 19, 1993 except Item 3
K. Letter dated March 25, 1993
L. Letter dated March 30, 1993

For the U.S. Nuclear Regulatory Commission

Date APR 13 1993

By Thomas E. Thompson
Nuclear Materials Safety Branch
Region I
King of Prussia, Pennsylvania 19406

NRC Form 374
(6-84)

U.S. NUCLEAR REGULATORY COMMISSION

MATERIALS LICENSE

Amendment No. 18

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee	
1. Allegheny Health, Education & Research Corp. 2. 320 East North Avenue Pittsburgh, Pennsylvania 15212-9986	In accordance with letter dated July 15, 1986, 3. License number 37-01317-02 is amended in its entirety to read as follows: 4. Expiration date October 31, 1989 5. Docket or Reference No. 030-00462

6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
A. Cobalt 60	A. Teletherapy sealed sources (AECL Model C-146 or C-151)	A. 9,000 curies (2 sources of not more than 4,500 curies each)

9. Authorized use

A. One source in an AECL Eldorado Super 6 teletherapy unit for the calibration of instruments. One source in its shipping container to be in possession of the licensee as necessary to the replacement of the source in the teletherapy unit only.

CONDITIONS

10. Licensed material shall be used only at 320 East North Avenue, Pittsburgh, Pennsylvania.

11. Licensed material shall be used by, or under the supervision of, Prakash N. Shrivastava, Ph.D., Bambino I. Martins, Ph.D., Marcel M. Szal, or Gary Branscum.

12. A. Teletherapy sources shall be tested for leakage at intervals not to exceed 6 months. Records of test results shall be kept in units of microcuries and maintained for inspection by the Commission. In the absence of a certificate from a transferor indicating that a test has been made within 6 months before the transfer, a source received from another person shall not be used until tested for leakage.

B. The tests shall be sufficiently sensitive to detect 0.05 microcurie of contamination on the test sample.

C. The test sample shall be taken from selected accessible surfaces of the teletherapy head. The selected accessible surfaces should be those surfaces on which one might expect contamination (if there were to be leakage) to accumulate and shall include the inner surface of the most frequently used treatment cones or beam collimating device. The test sample shall be taken with the source in the "off" position.

(12. continued) CONDITIONS

D. If the test revels the presence of 0.05 microcurie or more of removable contamination, the licensee shall immediately withdraw the source from use and take action to prevent spread of contamination. A report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety and Safeguards Branch, 631 Park Avenue, King of Prussia, Pennsylvania 19406. The report shall specify the source involved, the test results, and corrective action taken.

13. Prior to initiation of a licensed program, each teletherapy unit shall be equipped with electrical or mechanical stops limiting use of the primary beam of radiation so as to ensure compliance with Section 20.105(b), Title 10, Part 20, Code of Federal Regulations, Chapter 1, "Standards for Protection Against Radiation," as evidenced by a radiation survey. Necessary use restrictions shall be fully described in radiation survey reports submitted in accordance with Condition No. 16.

14. A set of written emergency instructions shall be posted at the teletherapy machine control. These instructions shall inform the machine operator of the procedure to be followed should he be unable to turn the machine's primary beam of radiation "off" with the controls outside the treatment room.

15. A. Access to the teletherapy room shall be controlled by a door at each entrance. Such doors shall be normally closed.

B. Each entrance to the teletherapy room shall be equipped with an electrical interlock system that will turn the teletherapy machine's primary beam of radiation "off" immediately upon opening of any entrance door. The interlock system shall be connected in such a manner that the teletherapy machine's primary beam of radiation cannot be turned "on" until all treatment room entrance doors are closed and the beam "on-off" control is reset at the control panel.

C. Electrical interlocks on entrance doors to the teletherapy room shall be tested for proper operation at least once every 6 months. Records of test results shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.

D. In the event of malfunction of any door interlock, the teletherapy machine control shall be locked in the "off" condition and not used, except as may be necessary for repair or replacement of the interlock system, until the interlock system is shown to be functioning properly.

16. Prior to initiation of a licensed program, and subsequent to each installation of a teletherapy source, radiation surveys and tests shall be performed in accordance with the following:

(16. continued) CONDITIONS

A. A radiation survey shall be made of:

(1) The teletherapy source housing, with the teletherapy source in the "off" position. The maximum and average radiation levels at one meter from the teletherapy source in the "off" position shall not exceed 10 milliroentgens per hour and 2 milliroentgens per hour, respectively.

(2) All areas adjacent to the treatment room with the teletherapy source in the "on" position. The survey, except Item (c), shall be performed with a phantom or ionization chamber in the primary beam of radiation and shall clearly establish:

(a) That radiation levels in restricted areas are not likely to cause personnel exposure in excess of the limits specified in Section 20.101, Title 10, Part 20, Code of Federal Regulations, Chapter 1, "Standards for Protection Against Radiation" (10 CFR 20).

(b) That quantities of radiation in unrestricted areas do not exceed the limits specified in Section 20.105(b), 10 CFR 20.

(c) The intensity of the primary beam of radiation at a specified distance from the teletherapy source.

B. Tests shall be made to determine proper operation of:

(1) Electrical interlocks on entrance doors to the teletherapy treatment room.

(2) The teletherapy source "on-off" indicators, both at the source housing and on the teletherapy machine control panel.

(3) Electrical or mechanical stops installed for the purpose of limiting use of the primary beam of radiation (restriction of source housing angulation or elevation, carriage or stand travel and operation of the beam "on-off" mechanism).

(4) The teletherapy treatment timing device.

C. A report in duplicate of the results of the above surveys and tests shall be sent to the U. S. Nuclear Regulatory Commission, Region I, Nuclear Materials Section, 631 Park Avenue, King of Prussia, Pennsylvania 19406, not later than thirty (30) days following each installation of a teletherapy source.

17. A. Any changes made in the irradiation room shielding, location of the unit within the irradiation room, or use of the teletherapy unit that could result in increased radiation levels in areas outside the irradiation room shall be evaluated by a radiation survey made in accordance with Condition 16., and reported to the Commission within thirty (30) days following completion of the change(s).

(17. continued) CONDITIONS

B. Relocation of the teletherapy unit to a new facility is not permitted without prior approval of the plans and details by the Commission. Following such approval and relocation, a radiation survey shall be made in accordance with Condition 16., and reported to the Commission within thirty (30) days after completion of the move.

18. The following shall be performed only by persons specifically licensed by the Commission or an Agreement State to perform such services:

A. Installation, relocation, or removal of teletherapy units containing sources.

B. Source exchange.

C. Any maintenance or repair operations on a teletherapy unit involving work on the source drawer, the shutter, or other mechanism that could expose the source, reduce the shielding around the source, or compromise the safety of the unit and result in increased radiation levels.

19. Pursuant to 10 CFR Part 40, "Domestic Licensing of Source Material", the licensee is authorized to possess, use, transfer, and import up to 999 kilograms of uranium contained as shielding material in the teletherapy units authorized by this license.

20. Each teletherapy machine shall be fully inspected and serviced during source replacement or at intervals not to exceed five (5) years, whichever comes first, to assure proper functioning of the source exposure mechanism. This inspection and servicing must be performed by persons specifically authorized to do so by the U. S. Nuclear Regulatory Commission or an Agreement State and a report of the inspection and servicing must be kept on file for review by the Commission's Office of Inspection and Enforcement.

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21. A. Each teletherapy room shall be equipped with a radiation monitoring device which continuously monitors the teletherapy beam condition and is equipped with a back-up battery power supply for emergency operation. This device shall energize a visible signal to make the operator continuously aware of teletherapy beam condition in order that appropriate emergency procedures may be instituted to prevent unnecessary radiation exposure. Operating procedures shall require daily operational testing of the installed radiation monitor on any day the teletherapy is used.

B. Whenever the continuous radiation monitoring device is not operational, any person entering the teletherapy room following an irradiation shall enter with an operable, calibrated radiation survey meter and shall determine the beam condition.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number 37-01317-02

Docket or Reference number 030-00462

Amendment No. 18

(Continued) CONDITIONS

22. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

A. Letter dated January 24, 1986
B. Letter dated July 25, 1986

For the U.S. Nuclear Regulatory Commission

Date August 29, 1986

By Francis M. Costello
Nuclear Materials Safety and
Safeguards Branch, Region I
King of Prussia, Pennsylvania 19406

MATERIALS LICENSE

Amendment No. 65

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee	
1. Allegheny Health, Education & Research Corporation 2. 320 East North Avenue Pittsburgh, Pennsylvania 15212-9986	In accordance with letter dated July 7, 1986, 3. License number 37-01317-01 is amended in its entirety to read as follows:
	4. Expiration date January 31, 1989
	5. Docket or Reference No. 030-02981

6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
A. Any byproduct material listed in Groups I and II of Schedule A, Section 35.100 of 10 CFR 35	A. Any radiopharmaceutical listed in Groups I and II of Schedule A, Section 35.100 of 10 CFR 35	A. As necessary for uses authorized in Subitem 9.A.
B. Any byproduct material listed in Group III of Schedule A, Section 35.100 of 10 CFR 35	B. Any form listed in Group III of Schedule A, Section 35.100 of 10 CFR 35	B. 5 curies of each byproduct material authorized in Subitem 6.B.
C. Any byproduct material listed in Group IV of Schedule A, Section 35.100 of 10 CFR 35	C. Any radiopharmaceutical listed in Group IV of Schedule A, Section 35.100 of 10 CFR 35	C. As necessary for uses authorized in Subitem 9.C.
D. Any byproduct material listed in Group V of Schedule A, Section 35.100 of 10 CFR 35	D. Any radiopharmaceutical listed in Group V of Schedule A, Section 35.100 of 10 CFR 35	D. As necessary for uses authorized in Subitem 9.D.
E. Any byproduct material listed in Group VI of Schedule A, Section 35.100 of 10 CFR 35	E. Any sealed source listed in Group VI of Schedule A, Section 35.100 of 10 CFR 35	E. 10 curies total for sources authorized in Subitem 6.E.
F. Any byproduct material listed in Section 31.11(a) of 10 CFR 31	F. Prepackaged kits	F. 5 millicuries of each byproduct material authorized in Subitem 6.F.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number: 37-01317-01
Docket or Reference number: 030-02981
Amendment No. 64

(Items 6., 7. & 8. continued)

6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
G. Xenon 133	G. Gas or gas in solution that is the subject of an active (i.e., not withdrawn or terminated) "New Drug Application" (NDA) approved by FDA or an active (i.e., not withdrawn, terminated or on "clinical hold") "Notice of Claimed Investigational Exemption for a New Drug" (IND) that has been accepted by FDA	G. 350 millicuries
H. Uranium (depleted in the isotope Uranium 235)	H. Cadmium plated metal	H. 250 kilograms
I. Gadolinium 153	I. Sealed Source (Lunar Model GD series)	I. Not to exceed 1.5 curies each, 3 curies total
J. Gadolinium 153	J. Sealed Source (Norland Model N1077 Series)	J. Not to exceed 1.5 curies each, 3 curies total
K. Hydrogen 3	K. Any	K. 200 millicuries
L. Carbon 14	L. Any	L. 20 millicuries
M. Iodine 131	M. Any	M. 100 millicuries
N. Iodine 125	N. Any	N. 100 millicuries
O. Phosphorus 32	O. Any	O. 30 millicuries
P. Chromium 51	P. Any	P. 35 millicuries
Q. Iron 59	Q. Any	Q. 30 millicuries
R. Iron 55	R. Any	R. 30 millicuries
S. Sulfur 35	S. Any	S. 20 millicuries
T. Cerium 141	T. Any	T. 15 millicuries
U. Strontium 85	U. Any	U. 15 millicuries
V. Calcium 45	V. Any	V. 20 millicuries
W. Calcium 47	W. Any	W. 20 millicuries
X. Cobalt 58	X. Any	X. 10 millicuries
Y. Cobalt 60	Y. Any	Y. 10 millicuries
Z. Technetium 99m	Z. Any	Z. 20 millicuries
AA. Mercury 197	AA. Any	AA. 10 millicuries
BB. Mercury 203	BB. Any	BB. 10 millicuries
CC. Selenium 75	CC. Any	CC. 10 millicuries
DD. Strontium 85	DD. Any	DD. 10 millicuries
EE. Ytterbium 169	EE. Any	EE. 10 millicuries
FF. Iridium 192	FF. Any	FF. 10 millicuries
GG. Gold 198	GG. Any	GG. 10 millicuries

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number: 37-01317-01
Docket or Reference number: 030-02981
Amendment No. 64

(Items 6., 7. & 8. continued)

6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
HH. Cesium 137	HH. Any	HH. 10 millicuries
II. Nickel 63	II. Plated foil	II. 12 millicuries
JJ. Strontium 90	JJ. Sealed source	JJ. 20 millicuries

9. Authorized use

A. Any diagnostic procedure listed in Groups I and II of Schedule A, Section 35.100, Title 10, Code of Federal Regulations.
B. Preparation and use of radiopharmaceuticals for any diagnostic procedure listed in Group III of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.
C. Any therapeutic procedure listed in Group IV of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.
D. Any therapeutic procedure listed in Group V of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.
E. Any procedure listed in Group VI of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.
F. In vitro studies.
G. Blood flow and pulmonary function studies.
H. For use as shielding in a linear accelerator.
I. For use in Lunar Model DP3 or DP4 Bone Mineral Analyzer for diagnosis of patients.
J. For use in Norland Model 2600 Bone Mineral Analyzer for diagnosis of patients.
K. through HH. Research and Development as defined by 10 CFR 30.4(q); animal studies.
II. For use in a gas chromatograph for sample analysis and as a check source.
JJ. For calibration of instruments.

CONDITIONS

10. Licensed material shall be used only at the licensee's facilities at 320 East North Avenue, Pittsburgh, Pennsylvania.

11. Licensed material listed in Item 6 above is authorized for use by, or under the supervision of, the following individual(s) for the materials and uses indicated:

Mustafa Adetepe, M.D.	Groups I, II, III, IV, V and VI Xenon 133 Depleted uranium for shielding Items 6.II. and 6.JJ. Items 6.K. through 6.HH. for research and development as defined in 10 CFR 30.4(q); animal studies Gadolinium 153 sealed sources for diagnosing bone maladies

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number: 37-01317-01

Docket or Reference number: 030-02981

Amendment No. 64

(11. continued)

	CONDITIONS
David W. Hayeslip, M.D.	Groups I, II and III In vitro studies Xenon 133 Gadolinium 153 sealed sources for diagnosing bone maladies
Oscar Morgan Powell, M.D.	Groups I, II, III, IV and V In vitro studies Xenon 133 Gadolinium 153 sealed sources for diagnosing bone maladies
Prabha Bansal, M.D.	Group VI Depleted uranium for shielding Gadolinium 153 sealed sources for diagnosing bone maladies
Gilbert H. Isaacs, M.D.	Groups I, II, III, IV and V In vitro studies Xenon 133 Gadolinium 153 sealed sources for diagnosing bone maladies
Peter A. Fleming, M.D.	Group VI Depleted uranium for shielding Gadolinium 153 sealed sources for diagnosing bone maladies
T. K. Dutta, M.D.	Group VI Depleted uranium for shielding Gadolinium 153 sealed sources for diagnosing bone maladies
Malcolm Slifkin, Ph.D.	Items 6.II. and 6.JJ. Items 6.K. through 6.HH. for research and development as defined in 10 CFR 30.4(q); animal studies
Der-Fong Fan, Ph.D.	Items 6.II. and 6.JJ. Items 6.K. through 6.HH. for research and development as defined in 10 CFR 30.4(q); animal studies
Roy E. Summers, Jr., M. Sc.	Items 6.H., 6.II. and 6.JJ. Items 6.K. through 6.HH. for research and development as defined in 10 CFR 30.4(q); animal studies

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number: 37-01317-01

Docket or Reference number: 030-02981

Amendment No. 64

(11. continued)

	CONDITIONS
Bambino I. Martins, Ph.D.	Items 6.H., 6.II. and 6.JJ. Items 6.K. through 6.HH. for research and development as defined in 10 CFR 30.4(q); animal studies
James H. McMaster, M.D.	Hydrogen 3, Carbon 14, Iodine 125, Sulfur 35, and phosphorus 32 for in vitro studies and laboratory research Calcium 45 and Calcium 47
Race L. Kao, Ph.D.	Items 6.II. and 6.JJ. Items 6.K. through 6.HH. for research and development as defined in 10 CFR 30.4(q); animal studies
Raymond N. CeFola, M.Sc.	Items 6.II. and 6.JJ. Items 6.K. through 6.HH. for research and development as defined in 10 CFR 30.4(q); animal studies
Herman F. Acevedo, Ph.D.	Items 6.II. and 6.JJ. Items 6.K. through 6.HH. for research and development as defined in 10 CFR 30.4(q); animal studies
Larry L. Schenken, Ph.D.	Items 6.II. and 6.JJ. Items 6.K. through 6.HH. for research and development as defined in 10 CFR 30.4(q); animal studies
Michael W. Epperly, Ph.D.	Items 6.II. and 6.JJ. Items 6.K. through 6.HH. for research and development as defined in 10 CFR 30.4(q); animal studies
Stuart E. Blacher, M.D.	Group VI Depleted uranium for shielding Gadolinium 153 sealed sources for diagnosing bone maladies
Marcel Szal, M.S.	Items 6.K. through 6.HH. for research and development as defined in 10 CFR 30.4(q)

12. The licensee is authorized to hold radioactive material with a physical half-life of less than 65 days for decay-in-storage before disposal in ordinary trash provided:

A. Radioactive waste to be disposed of in this manner shall be held for decay a minimum of 10 half-lives.

(12. continued) CONDITIONS

B. Before disposal as normal waste, radioactive waste shall be surveyed to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.

C. Generator columns shall be segregated so that they may be monitored separately to ensure decay to background levels prior to disposal.

13. For a period not to exceed 60 days in any calendar year, a visiting physician is authorized to use licensed material for human use under the terms of this license, provided the visiting physician:

A. Has the prior written permission of the hospital's Administrator and Radiation Safety Committee, and

B. Is specifically named as a user on a Nuclear Regulatory Commission license authorizing human use, and

C. Performs only those procedures which the physician is specifically authorized to perform pursuant to a license issued by the Nuclear Regulatory Commission.

The licensee shall maintain for inspection by the Commission copies of the written permission specified in A. above and of the license(s) specified in B. and C. above for a period of 5 years from the date permission is granted under A. above.

14. Patients containing Iodine-131 for the treatment of thyroid carcinoma (or patients containing therapeutic quantities of Gold 198) shall remain hospitalized until the residual activity is 30 millicuries or less.

15. A. The sealed sources or detector cells specified in Items 7.J., 7.II., and 7.JJ. shall be tested for leakage and/or contamination at intervals not to exceed 6 months and the sealed sources or detector cells specified in Item 7.I. shall be tested for leakage and/or contamination at intervals not to exceed 1 year. Any source received from another person which is not accompanied by a certificate indicating that a test was performed within 6 months before the transfer shall not be put into use until tested.

B. Any sealed source or detector cell in storage and not being used need not be tested. When the source or detector cell is removed from storage for use or transfer to another person, it shall be tested before use or transfer.

(15. continued) CONDITIONS

C. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the source or detector cell shall be removed from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. A report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety and Safeguards Branch, 631 Park Avenue, King of Prussia, Pennsylvania 19406. The report shall specify the source involved, the test results, and corrective action taken. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.

D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to perform such services.

16. In lieu of using the conventional radiation caution colors (magenta or purple on yellow background) as provided in Section 20.203(a)(1), of 10 CFR Part 20, the licensee is hereby authorized to label detector cells and cell baths, containing licensed material and used in gas chromatography devices, with conspicuously etched or stamped radiation caution symbols without a color requirement.

17. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from detector cells by the licensee.

18. The licensee shall conduct a physical inventory every 6 months to account for all sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 2 years from the date of each inventory.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number: 37-01317-01
Docket or Reference number: 030-02981
Amendment No. 64

(Continued) CONDITIONS

19. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

A. Application dated October 25, 1983
B. Letter dated December 5, 1983
C. Letter dated November 7, 1985
D. Letter dated July 7, 1986
E. Model ALARA Program contained in Appendix O of Regulatory Guide 10.8 (Revision 1)

For the U.S. Nuclear Regulatory Commission

Original Signed By:
John E. Glenn

By _____
Nuclear Materials Safety and
Safeguards Branch, Region I
King of Prussia, Pennsylvania 19406

Date AUG 15 1986

NRC Form 374
(5 84)

U.S. NUCLEAR REGULATORY COMMISSION

MATERIALS LICENSE

Amendment No. 28

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93 - 438), and T Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 40 and 70, and in reliance on statements and represen heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byp source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated be deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and conditions specified below.

Licensee	
1. The Washington Hospital	In accordance with letter dated April 11, 1989,
2. 155 Wilson Avenue Washington, Pennsylvania 15301	3. License number 37-10363-01 is amended in its entirety to read as follows:
	4. Expiration date January 31, 1990
	5. Docket or Reference No. 030-03126

6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licen may possess at any one time under this license
A. Any byproduct material listed in Groups I and II of Schedule A, Section 35.100 of 10 CFR 35	A. Any radiopharmaceutical listed in Groups I and II of Schedule A, Section 35.100 of 10 CFR 35	A. As necessary for uses authorized in Subitem 9.A.
B. Any byproduct material listed in Group III of Schedule A, Section 35.100 of 10 CFR 35	B. Any form listed in Group III of Schedule A, Section 35.100 of 10 CFR 35	B. 2 curies of each byproduct material authorized in Subitem 6.B.
C. Any byproduct material listed in Group IV of Schedule A, Section 35.100 of 10 CFR 35	C. Any radiopharmaceutical listed in Group IV of Schedule A, Section 35.100 of 10 CFR 35	C. As necessary for uses authorized in Subitem 9.C.
D. Any byproduct material listed in Group V of Schedule A, Section 35.100 of 10 CFR 35	D. Any radiopharmaceutical listed in Group V of Schedule A, Section 35.100 of 10 CFR 35	D. As necessary for uses authorized in Subitem 9.D.
E. Any byproduct material listed in Section 31.11(a) of 10 CFR 31	E. Prepackaged kits	E. 3 millicuries of each byproduct material authorized in Subitem 6.E.
F. Any byproduct material listed in Group VI of Schedule A, Section 35.100 of 10 CFR 35	F. Any sealed source listed in Group VI of Schedule A, Section 35.100 of 10 CFR 35	F. 1925 millicuries tota for sources authorize in Subitem 6.F..
G. Gadolinium 153	G. Sealed Source (Lunar GD series)	G. Not to exceed 1.5 curies, 3 curies total
H. Uranium (depleted in the isotope Uranium 235)	H. Cadmium plated metal	H. 106 kilograms

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number: 37-10363-01

Docket or Reference number: 030-03126

Amendment No. 28

9. Authorized use

A. Any diagnostic procedure listed in Groups I and II of Schedule A, Section 35.100, Title 10, Code of Federal Regulations.
B. Preparation and use of radiopharmaceuticals for any diagnostic procedure listed in Group III of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.
C. Any therapeutic procedure listed in Group IV of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.
D. Any therapeutic procedure listed in Group V of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.
E. In vitro studies.
F. Any procedure listed in Group VI of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations and survey instrument calibrations.
G. For use in Lunar Model DP3/DP4 Bone Mineral Analyzer for diagnosis of patients.
H. For use as shielding in a linear accelerator.

CONDITIONS

10. Licensed material shall be used only at 155 Wilson Avenue, Washington, Pennsylvan

11. Licensed material listed in Item 6 above is authorized for use by, or under the supervision of, the following individual(s) for the materials and uses indicated:

Perry C. Smith, M.D.	Groups I, II, III, IV and V In vitro studies Gadolinium 153 sealed sources for bone mineral analysis of patients
William J. McMahon, M.D.	Groups I, II, III, IV and V In vitro studies Gadolinium 153 sealed sources for bone mineral analysis of patients
John A. Beel, M.D.	Groups I, II and III In vitro studies
Leslie Parker, M.D.	In vitro studies
James Hughes, M.D.	Group VI Depleted uranium for shielding
Gerald Medwick, M.D.	Group VI Depleted uranium for shielding
Tarit Dutta, M.D.	Group VI Depleted uranium for shielding

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number
37-10363-01
Docket or Reference number
030-03126

Amendment No. 28

(11. continued)

	CONDITIONS
Julian Proctor, M.D.	Group VI Depleted uranium for shielding
Anthony Hovenden, M.D.	Group VI Depleted uranium for shielding
Mark Trombetta, M.D.	Group VI Depleted uranium for shielding
Marcel Szal	Item 6.F. for non-human use

12. The licensee is authorized to hold radioactive material with a physical half-life of less than 65 days for decay-in-storage before disposal in ordinary trash provided:

A. Radioactive waste to be disposed of in this manner shall be held for decay a minimum of 10 half-lives.

B. Before disposal as normal waste, radioactive waste shall be surveyed to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.

C. Generator columns shall be segregated so that they may be monitored separately to ensure decay to background levels prior to disposal.

D. Radioactive waste containing microcuries amounts of iodine-125 may be dispose to the ordinary trash after being held for decay for a minimum of five (5) half-lives. Prior to disposal, these wastes must be monitoried in accordance with the proceudres described in the licensee's application dated August 22, 1984. The survey conducted prior to disposal must confirm that th radioactivitity of the waste cannot be distinguished from background.

13. For a period not to exceed 60 days in any calendar year, a visiting physician is authorized to use licensed material for human use under the terms of this license, provided the visiting physician:

A. Has the prior written permission of the hospital's Administrator and Radiation Safety Committee, and

B. Is specifically named as a user on a Nuclear Regulatory Commission license authorizing human use, and

C. Performs only those procedures which the physician is specifically authorized to perform pursuant to a license issued by the Nuclear Regulatory Commission.

(13. Continued) CONDITIONS

The licensee shall maintain for inspection by the Commission copies of the written permission specified in A. above and of the license(s) specified in B. and C. above for a period of 5 years from the date permission is granted under A. above.

14. Patients containing Iodine-131 for the treatment of thyroid carcinoma (or patients containing therapeutic quantities of Gold 198) shall remain hospitalized until the residual activity is 30 millicuries or less.

15. A. The sealed source or detector cell specified in Item 7.F. shall be tested leakage and/or contamination at intervals not to exceed one year. Any sou received from another person which is not accompanied by a certificate indicating that a test was performed within 6 months before the transfer s not be put into use until tested.

B. Any sealed source or detector cell in storage and not being used need not be tested. When the source or detector cell is removed from storage for use or transfer to another person, it shall be tested before use or transfer.

C. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the source or detector cell shall be removed from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. A report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety Branch, 475 Allendale Road, King of Prussia, Pennsylvania 19406. The report shall specify the source involved, the tes results, and corrective action taken. Records of leak test results shall kept in units of microcuries and shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.

D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to perform such services.

16. Sealed sources containing licensed material shall not be opened or removed from their respective source holders by the licensee.

17. Maintenance, repair, installation, replacement, and disposal of sealed sources containing licensed material used in devices shall be performed only by Lunar Radiation Corporation or by other persons specifically authorized by the Commis or an agreement State to perform such services. Alternatively, source exchange may be performed by authorized users who have received actual demonstrations an instructions on installing and replacing sources. The licensee shall maintain inspection by the Nuclear Regulatory Commission records of such training.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number
37-10363-01

Docket or Reference number
030-03126

Amendment No. 28

(Continued) CONDITIONS

18. Radiation Safety Officer: Perry C. Smith, M.D.

19. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

A. Letter dated June 13, 1984
B. Application dated August 22, 1984
C. Letter dated December 31, 1984
D. Letter dated October 24, 1985
E. Letter dated June 25, 1986
F. Letter dated April 11, 1989
G. Letter dated June 13, 1989
H. Letter dated July 29, 1989
I. Letter dated August 9, 1989

For the U.S. Nuclear Regulatory Commissio

Date SEP 12 1989

By Original Signed By:
Judith A. Joustra

Nuclear Materials Safety Branch
Region 1
King of Prussia, Pennsylvania 19406

REQUIREMENTS FOR MATERIALS LICENSEES

As a holder of an NRC materials license, you must:

1. Operate in accordance with NRC regulations contained in 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.

2. Possess radioactive material only in the quantity(ies) and form(s) indicated in your license.

3. Use radioactive material only for the purpose(s) indicated in your license.

4. Notify NRC in writing of any change in mailing address (no fee required if the location of radioactive material remains the same).

5. Request and obtain appropriate amendments if you plan to change the ownership of your organization, change locations of radioactive material, or make any other changes in your facility or program which are contrary to your license conditions or representations made in your license application and any supplemental correspondence with NRC. A license fee may be charged for the amendment as specified in 10 CFR Part 170.

6. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date on your license. You should receive a reminder notice approximately 90 days before the expiration date. However, it is your responsibility to file a renewal application at the proper time. Possession of radioactive material after your license expires is a violation of NRC regulations.

7. Request termination of your license if you plan to permanently discontinue activities involving radioactive material.

NRC FORM 374
(10-89)

U.S. NUCLEAR REGULATORY COMMISSION

MATERIALS LICENSE

Amendment No. 13

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 39, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee	
1. Ohio Valley Hospital 2. One Ross Park Steubenville, OH 43952	In accordance with application dated May 25, 1990 3. License number 34-13317-01 is renewed in its entirety to read as follows:
	4. Expiration date: November 30, 1995
	5. Docket or Reference No.: 030-00429

6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
A. Cobalt-60	A. Sealed teletherapy sources (NPI Model NPTT Series)	A. 6,840 curies per source
B. Uranium depleted in Uranium-235	B. Solid Metal	B. 155 Kilograms total possession limit

9. Authorized Use

A. Medical use described in 10 CFR 35.600, in a Picker Model 6296 (C9M/80) teletherapy unit and for cobalt-60 unit calibrations and intercomparisons.

B. Shielding in a teletherapy unit and linear accelerator.

CONDITIONS

10. Location of Use: Radiation Therapy, 380 Summit Avenue, Steubenville, Ohio.

11. A. Authorized Users: James Hughes, M.D., Gerald Medwick, M.D., Tarit Dutta, M.D., Julian Proctor, M.D., or Mark Trombetta, M.D. and Marcel Szal, M.S. for Cobalt-60 unit calibration and chamber intercomparisons.

B. Teletherapy Physicist: Marcel Szal, M.S.

C. Radiation Safety Officer: Ronald I. Veatch, M.D.

COPY

3A

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number 34-13317-01
Docket or Reference number 030-00429
Amendment No. 13

12. The licensee is exempted from decommissioning financial assurance requirements for possession of licensed material in sealed sources in quantities greater than the limits of 10 CFR 30.35(d) for the purpose of source changes only. This exemption is granted for no more than 30 days for any one source change.

13. The licensee shall maintain records of information important to safe and effective decommissioning at 380 Summit Avenue, Steubenville, Ohio per the provisions of 10 CFR 30.35(g) until this license is terminated by the Commission.

14. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

A. Application dated May 25, 1990; and

B. Letter dated November 24, 1987 (with attached survey report).

For the U.S. Nuclear Regulatory Commission

Date: October 2, 1990

Original Signed
By Kevin G. Null
Materials Licensing Section, Region III

COPY

NRC Form 374A (9-91)

U.S. NUCLEAR REGULATORY COMMISSION

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number: 34-13317-02

Docket or Reference number: 030-07576

CORRECTED COPY

Amendment No. 16

Ohio Valley Hospital
One Ross Park
Steubenville, OH 43952

In accordance with letter dated August 8, 1989, License Number 34-13317-02 is amended as follows:

Item Two (Address) is changed from: 380 Summit Avenue
Steubenville, OH 43952

to: One Ross Park
Steubenville, OH 43952

Items 6., 7., 8. and 9. are amended to read:

6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
A. Any byproduct material identified in 10 CFR 35.100	A. Any radiopharmaceutical identified in 10 CFR 35.100	A. As needed
B. Any byproduct material identified in 10 CFR 35.200	B. Any radiopharmaceutical identified in 10 CFR 35.200	B. As needed
C. Any byproduct material identified in 10 CFR 35.300	C. Any radiopharmaceutical identified in 10 CFR 35.300	C. As needed
D. Any byproduct material identified in 10 CFR 35.400	D. Any brachytherapy source identified in 10 CFR 35.400	D. As needed
E. Any byproduct material identified in 10 CFR 31.11	E. Prepackaged Kits	E. As needed
F. Americium-241	F. Sealed Source (Amersham/Searle Model No. AMC.24)	F. 14 millicuries
G. Carbon-14	G. Any	G. 3.0 millicuries

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number: 34-13317-02
Docket or Reference number: 030-07576

CORRECTED COPY

Amendment No. 16

9. Authorized Use:

A. Medical use described in 10 CFR 35.100.

B. Medical use described in 10 CFR 35.200.

C. Medical use described in 10 CFR 35.300.

D. Medical use described in 10 CFR 35.400.

E. In vitro studies.

F. To be used in Searle Analytic Anatomical Marker Model SS-10244.

G. In-Vitro Studies

Conditions 11. and 15. are amended to read:

11. a. Radiation Safety Officer: Ronald E. Veatch, M.D.

b. Authorized Use:

1. Thomas Harvilla, M.D., for material in 10 CFR 35.100, 35.200, 35.300 and Americium-241.

2. Noel G. Dias, M.D., for materials in 10 CFR 35.100, 35.200, 35.300, 31.11 Carbon-14 and Americium-241.

3. Robert M. Levin, M.D., for material in 10 CFR 35.100, 35.200, Iodine-131 for diagnosis of thyroid function.

4. James M. Hughes, M.D., for material in 10 CFR 35.400.

5. Gerald R. Medwick, M.D., for material in 10 CFR 35.400.

6. Phillip Wadyko, M.D., for material in 10 CFR 35.100, 35.200 and 31.11.

7. Joseph P. Concannon, M.D., for material in 10 CFR 35.100, 35.200, 35.300, 35.400, 31.11, Cabron-14 and Americium-241.

8. Ronald E. Veatch, M.D., for material in 10 CFR 35.100, 35.200, 35.300 and 31.11.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number 34-13317-02

Docket or Reference number 030-07576

CORRECTED COPY

Amendment No. 16

15. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

A. Application dated August 11, 1986.

B. Letter dated August 8, 1989.

C. ALARA Program dated August 11, 1986.

For the U.S. Nuclear Regulatory Commission

Date: November 6, 1989

By Patricia M. Vacherlon
Materials Licensing Section, Region III

NRC FORM 374
(10-89)

U.S. NUCLEAR REGULATORY COMMISSION

MATERIALS LICENSE

Amendment No. 31

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 39, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee	
1. Washington Hospital	In accordance with application dated April 21, 1992,
2. 155 Wilson Avenue Washington, Pennsylvania 15301	3. License number 37-10363-01 is amended in its entirety to read as follows:
	4. Expiration date March 31, 1996
	5. Docket or Reference No 030-03126

6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
A. Any byproduct material identified in 10 CFR 35.100	A. Any radiopharmaceutical identified in 10 CFR 35.100	A. As needed
B. Any byproduct material identified in 10 CFR 35.200	B. Any radiopharmaceutical identified in 10 CFR 35.200 except generators and gas	B. As needed
C. Any byproduct material identified in 10 CFR 35.300	C. Any radiopharmaceutical identified in 10 CFR 35.300	C. As needed
D. Any byproduct material identified in 10 CFR 35.400	D. Any brachytherapy source identified in 10 CFR 35.400	D. 2 curies
E. Any byproduct material identified in 10 CFR 35.500	E. Any diagnostic source in 10 CFR 35.500	E. 3 curies
F. Any byproduct material identified in 10 CFR 31.11	F. Prepackaged Kits	F. As needed
G. Uranium depleted in Uranium 235	G. Cadmium plated metal	G. 106 kilograms

9. Authorized use

A. Any uptake, dilution and excretion procedure approved in 10 CFR 35.100.
B. Any imaging and localization procedure approved in 10 CFR 35.200.
C. Any radiopharmaceutical therapy procedure approved in 10 CFR 35.300.
D. Any brachytherapy procedure approved in 10 CFR 35.400 and instrument calibrations.
E. Medical use of sealed sources included in 10 CFR 35.500 in compatible devices registered pursuant to 10 CFR 30.32(g).
F. In vitro studies.
G. Shielding in a linear accelerator.

(Continued) CONDITIONS

10. Location of use: 155 Wilson Avenue, Washington, Pennsylvania.

11. Radiation Safety Officer: Perry C. Smith, M.D.

12.

Authorized User(s):	Material and Use(s):
Perry C. Smith, M.D.	35.100; 35.200; 35.300; 35.500 In vitro studies Depleted uranium for shielding
William J. McMahon, M.D.	35.100; 35.200; 35.300; 35.500 In vitro studies
William G. Castro, M.D.	35.100; 35.200; 35.300 In vitro studies
John A. Beel, M.D.	35.100; 35.200 In vitro studies
Leslie Parker, Ph.D.	In vitro studies
Mark Trombetta, M.D.	35.400
Anthony Hovenden, M.D.	35.400
Julian Proctor, M.D.	35.400
Tarit Dutta, M.D.	35.400
Gerald Medwick, M.D.	35.400
James Hughes, M.D.	35.400
Marcel Szal, M.S.	35.400 for survey instrument calibrations only

13. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material so that at no time is a quantity of radioactive material possessed in excess of a quantity which requires decommissioning funding in accordance with 10 CFR 30.35(d), 10 CFR 40.36(b) or 10 CFR 70.25(d).

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number
37-10363-01

Docket or Reference number
030-03126

Amendment No. 31

(Continued) CONDITIONS

14. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.

A. Letter dated November 17, 1989
B. Letter dated August 7, 1990
C. Letter dated September 4, 1990
D. Letter dated October 25, 1990
E. Letter dated February 19, 1991
F. Letter dated April 21, 1992

For the U.S. Nuclear Regulatory Commission

Date DEC 07 1992

By _____
Nuclear Materials Safety Branch
Region I
King of Prussia, Pennsylvania 19406

CURRICULUM VITAE

James Michael Hughes, M.D.

Home Address: [redacted]

Work Address: Triangle Radiation Oncology Assoc., Inc.
701 Fifth Street
Beaver, PA 15009
(412) 728-2225

Date of Birth: [redacted]

Social Security No. [redacted]

Marital Status: Married - Dr. Elizabeth Hughes
Children - Paul and Richard

Citizenship: British with Permanent Resident Visa
U.S. Citizenship Application Pending

Qualifications: (Degrees)

M.B.B.S. London University, UK	1967
L.R.C.P., M.R.C.S. Royal College of Physicians and Surgeons London	1967
FLEX	1977
Pennsylvania Medical License	1977

Postgraduate Degrees:

D.M.R.T. Diploma in Medical Radiation Therapy - Royal College of Physicians and Surgeons - London (Radiation Oncology)	1971
M.R.C.P. Membership of the Royal College of Physicians of United Kingdom	1972
F.R.C.R. Fellowship of Royal College of Radiologists - London	1973
American Boards in Radiology	1978

Education:

Christian Brothers College Johannesburg, South Africa	
Kings College, London University Preclinical Medicine	1961
Westminster Medical School London University Clinical Medicine	1963

Postgraduate Training:

House Physician to the Professional Medical Unit, Westminster Hosp	1967
House Surgeon at St. Stephen's Hospital, Chelsea, London	1968
Senior House Officer in Pathology, Westminster Hosp., London	1968
Senior House Officer in Radiation and Medical Oncology Westminster Hospital, London	1969
Registrar in Radiation and Medical Oncology Westminster Hospital, London	1970-1971
Senior Registrar in Radiation and Medical Oncology Westminster Hospital, London	1971-1974

Staff Appointments:

Consultant Radiotherapist and Oncologist to East Anglian Regional Health Authority	1974-1976
Consultant Radiotherapist and Oncologist to Norfolk and Norwich Hospital, Norwich, UK	1974-1976
Consultant Radiotherapist and Oncologist to Addenbrookes Hospital, Cambridge, UK	1974-1976
Attending Staff, Director of Radiation Oncology, Jameson Memorial Hospital, New Castle, PA	1977-Pres
Associate Attending Physician, Division of Radiation Oncology, Allegheny General Hospital	1976
Senior Attending Physician and Associate Director, Division of Radiation Oncology, Allegheny General Hospital	1978-March 198

Staff Appointments, cont.:

Acting Director, Division of Radiation Oncology, March 198
Allegheny General Hospital

Attending Staff, Radiation Oncology, 1981-Pres
Medical Center of Beaver County
Director of Radiation Oncology

Secretary/Treasurer, Triangle Radiation Oncology Assoc., Inc. 1983
Beaver, PA

President/Treasurer, Triangle Radiation Oncology Assoc., Inc. 1988-Pres
Beaver. PA

Professional Memberships:

British Medical Association
American Society of Therapeutic Radiologists
American College of Radiology
Medical Oncological Society
South West Oncology Group

Committee Appointments:

Chairman of Medical Advisory Committee on
Technician Training Program
Community College of Allegheny County

Radiation Protection Committee
Allegheny General Hospital

Subcommittee on Post Graduate Medical Educatio
Allegheny General Hospital

Commission on Physician's Compensation
Allegheny General Hospital

Other Appointments:

Advisor on Radiaton Oncology to 1980-Presen
Blue Shield of Pennsylvania

Director of Residency Program
Radiation Oncology
Allegheny General Hospital

Research:

Co-Principal Investigator: NCIC Protocol
Specific Active Immunotherapy of Early
Stage Ongoing.

Research, cont.:

Co-Principal Investigator: Phase I Study of Toxicity of Interferon on Cancer Patients Ongoin

Active Member of South West Oncology Group

Preclinical hyperthermia research with Allegheny General Hospital Physics Section grant application has been submitted with Dr. Shrivastav as Principal Investigator

Serum Xanthine Oxidase Radio-Hepato-Toxicity with Dr. Larry Schenken. Grant application submitted.

Publications:

The Treatment of Jaundice due to Liver Metastase by Quadruple Chemotherapy. The Postgraduate Medical Journal, April 1973

Metastatic Basal Cell Carcinoma
Clinical Radiology, July 1973

Hodgkin's Disease Stage IV
B.M.J. July 1975

Value of Laporotomy and Splenomegaly in the Management of Early Hodgkin's Disease.
Clinical Radiology, April 1975

CURRICULUM VITAE

Gerald Richard Medwick, D.O.

Home Address: [redacted]

Work Address: Triangle Radiation Oncology Assoc., Inc.
701 Fifth Street
Beaver, PA 15009
(412) 728-2[illegible]5

Date of Birth: [redacted]

Social Security No. [redacted]

Citizenship: United States of America

Education and Training:

Undergraduate:

1968 - 1972	Pennsylvania State University University Park, PA Major: Nuclear Engineering	B.S. 1972

Graduate:

1973 - 1974	University of Pittsburgh Graduate School of Public Health Radiation Health	M.Sc. 1974
1976 - 1980	Philadelphia College of Osteopathic Medicine Philadelphia, PA	D.O. 1980

Post Graduate:

1980 - 1981	Allegheny General Hospital Pittsburgh, PA	Intern Therapeutic Radiology
1981 - 1983	Allegheny General Hospital Pittsburgh, PA	Resident Therapeutic Radiology
1983 - 1984	Joint Radiation Oncology Center University Health Center of Pittsburgh Pittsburgh, PA	Chief Resident

1984 - Present	Triangle Radiation Oncology Assoc., Inc. Beaver, PA	
1988	Secretary of Triangle Radiation Oncology Assoc., Inc. Beaver, PA	
1989 - Present	Clinical Director of Washington Hospital Radiation Therapy Department Washington, PA	

Appointments and Positions:

Non-Academic:

1972 - 1973	United States Naval Reserve	Communications Offic
1973	Westinghouse Electric Corp. Nuclear Energy Systems Division Pittsburgh, PA	Nuclear Engineer
1974 - 1976	Duquesne Light Company Pittsburgh, PA	Nuclear Engineer/ Health Physicist
1984	Medical Center of Beaver County Beaver, PA	Associate Staff
	Jameson Memorial Hospital New Castle, PA	Courtesy Staff
	Ohio Valley Hospital Steubenville, OH	Courtesy Staff
	North Hills Passavant Hospital Pittsburgh, PA	Courtesy Staff

Academic:

1983	Community College, Allegheny Co. Pittsburgh, PA	Clinical Professor Radiation Therapy Technician

Specialty Certification:

1984	American Board of Radiology	Therapeutic Radiolo

Medical Licensure:

1981	Commonwealth of Pennsylvania	Lic. No. OS-004695-
1983	State of Ohio	Lic. No. 3650

Memberships in Professional and Scientific Societies

1984	American Society of Therapeutic Radiology and Oncology
1980	American Medical Association Pennsylvania Medical Society Allegheny County Medical Society
1976 - 1980	American Osteopathic Association Pennsylvania Osteopathic Association
1973	Health Physics Society

Honors

1972	B.S. With Distinction
1973 - 1974	Fellow, National Institute of Health, Bureau of Radiological Health

CURRICULUM VITAE

Tarit Kanti Dutta, M.D.

Home Address: [redacted]

Work Address: Triangle Radiation Oncology Associates, Inc.
[redacted]

Date of Birth: February 14, 1941

Marital Status: Single

Nationality: Immigrant - #A 26 237 717 Permanent Visa

Social Security: [redacted]

Training:

Christian Medical College
Vellore, India

Residency (Radiation Therapy) 1968-71
All India Institute
Medical Sciences, New Delhi, India

Senior Fellowship 1975-76
Radiation Oncology
The Middlesex Hospital and Royal
Marsden Hospital
London, England

Visiting Physician 1978-79
Radiation Oncology
Allegheny General Hospital
Pittsburgh, PA

Academic Qualifications:

M.D. (Medicine) May 1971
Specialty Board Equivalent

M.D. (Radiotherapy) May 1973
Specialty Board Equivalent

F.A.M.S. Jan 1975

American Board of Jan 1975

Active Licensures:

ECFMG Certificate	#256-517-4
Georgia State Medical Board and Licensure	#74578
Ohio State Licensure	#52362
Pennsylvania State Medical Board and Licensure	MD030607E
Nuclear Regulatory Commission Licensure	#370131701

Honours Received:

High Proficiency Order Medal Postgraduation in Radiation Therapy	1971
Fellow, Indian Academy Medical Sciences	1973

Staff Positions:

Assistant Professor in Radiotherapy, Postgraduate Institute of Medical Education and Research Chandigarh, India	1970/73
Associate Professor in Radiotherapy Postgraduate Institute of Medical Education and Research Chandigarh, India	1973/79
Visiting Professor Allegheny General Hospital Pittsburgh, PA	1979/80
Attending Physician Radiation Oncology Allegheny General Hospital Pittsburgh, PA	1980-07/85
Senior Attending Physician Radiation Oncology Mercy Hospital Pittsburgh, PA	09/85-06/88
Physician, Radiation Oncology Triangle Radiation Oncology 701 Fifth Street Beaver, PA	06/88-Present

Staff Positions:

Director of Radiation Oncology
Forbes Health
Monroeville, PA 1990

Scientific Contributions:

1. Presented more than eighty scientific papers in different national and international conferences.

2. Over one hundred publications in National and International Journals.

Text book contributions:

1. Gynecological Cancer in Postgraduate Obstetrics and Gynecology, ed by M.K. Krishna Menon, P.K. Devi, and K. B. Rao, Orient Longman Publisher, ed 1, p 305 - 324, 1980.

2. One Hundred Lessons in Radiotherapy - Postgraduate Lectures with Annotated References (in Press).

Research interest:

1. Development of a series of Brachytherapy applicators for cancer of th uterine cervix. (India)*

2. A national project supported by the Department of Science and Technology (Government of India). "Upgrade the Mold Room Technology in India."

3. HCG in non-endocrine malignancies - a potential for tumor marker bef and after therapy.

4. Late bowel reactions after radical pelvic and extended field irradiat

5. Chronoradiotherapy of cancer. (head and neck, uterine cervical canc

6. Tissue tolerance in head and neck cancers.*

7. Pelvic versus pelvic and para-aortic radiation therapy for Stage III cancer of the uterine cervix.**

* Abstracted in World Health Organization (WHO) Cancerogram Research Project. Data 1,3,7. A collaborative project granted by the National Cancer Inst. Bethesda, Maryland - Awarded to Allegheny General Hospital, Pittsburgh, PA and Postgraduate Institute, Chandigarh, India

Scientific Organization Memberships 7 Committees:

1. Indian Cancer Society. (Life Member)
2. Association of Radiation Oncologists of India. (Life Member)
3. Indian Academy of Medical Sciences.
4. International Society of Chronobiology.
5. New York Academy of Sciences.
6. American Medical Association.
7. Pennsylvania Medical Association.
8. Allegheny County Medical Society.
9. American Society of Therapeutic Radiology and Oncology.
10. Community Clinical Oncology Program.
11. Radiation Therapy Oncology Group.
12. Southwest Oncology Group.
13. Cancer Committee, Allegheny General Hospital.
14. Institutional Review Board, Allegheny General Hospital.
15. Member Multidisciplinary Cancer Committee, Mercy Hospital.
16. Member European Organization of Research on Treatment of Cancer (EO

Editorial Membership of Scientific Journals:

1. Bulletin, Postgraduate Institute of Medical Education and Research, PGI, India.
2. Journal of Radiation Oncology, India.
3. Natural Sciences, Karachi, Pakistan.

List of Publications

1. T.K. Dutta, T.K. Bhattacharjee, B.D. Gupta, and S.P. Pople. Paroti Sialometry - A Functional Study of the Parotid Gland in Pre and Pos Radiation Periods in Head and Neck Cancer. Indian Journal of Medic Sciences, 27:451 - 454, 1973.

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17. T.K. Dutta, B.D. Gupta, and V.G. Sudhakaran: Extended Field Radiatic in Cancer of the Cervix. Proceedings of the Second Asian Cancer Conference, Singapore. Liver Cancer, P. 382-387.

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105. T.K. Dutta. Head nd Neck Cancer Panelist EORTC Compendium. Paris, 1986.

106. T.K. Dutta, Tumor Markers - Present Status and Future Potential. Keynote speaker, Oceania Oncology Meeting, Bombay, October, 1987.

107. T.K. Dutta, M.H. Dalbow, J.P. Concannon, G.A. Liebler and R.P. Pugl Clinical Prospects of Serum Tumor markers in the Patients with Malignant Diseases. International Journal of Cancer (accepted 198:

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Duties Included:	NRC License verification for Radiopharmaceutical sales, internal dosimetry calculations, routine radiation safety surveys and radiological waste management.
6/80 to 1/84:	Radiological Physicist Allegheny General Hospital Mideast Center for Radiological physics 320 East North Avenue Pittsburgh, PA. 15212
Duties Included:	On-site clinical reviews of the NCI, Division of Cancer Control and Rehabilitation Network Hospitals in the Mideast Region of the United States, monthly TLD mail monitoring of network teletherapy units within the Mideast region, providing radiotherapy and diagnostic physics support for local institutions participating in Allegheny General Hospital's Physics Outreach Program and editor of the semi-annual MECRP NEWSLETTER.

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6/80 to 1/84:	Assistant Radiation Safety Physicist Allegheny General Hospital 320 East North Avenue Pittsburgh, PA> 15212
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1/83 to 7/83:	Clinical Physicist Allegheny General Hospital 320 East North Avenue Pittsburgh, PA 15212
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5/83 to 10/86	Clinical Physicist Allegheny General Hospital 320 East North Avenue Pittsburgh, PA. 15212
Duties Included:	Machine calibrations of Picker C9 Co-60 Unit, Varian Clinac 4 Linear Accelerator, Siemens Mevatron 20 Linear Accelerator and GE Maximar 100 superficial unit. Provide physics support for picker diagnostic quality simulator. External and intracavitary treatment planning utilizing a digital PDP 8 and VAX 11-750 computers, prescription verification and review of treatment charts.

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320 East North Avenue
Pittsburgh, PA. 15212

Duties Include:

Direct supervision of two physicists and dosimetrist. Provide technical supervision of radiation therapy technologists. Provide consulting services to staff radiotherapists when required for radiation therapy treatment planning. Provide scheduling of the physics staff to insure proper physics coverage of the radiation therapy clinic and to insure compliance of NRC, Pennsylvania and J.C.A.H. rules and regulations.

The radiation therapy physics staff provides the following support to the Division of Radiation Oncology:

1. External Beam Dosimetry.
2. Interstitial and intracavitary dosimetry.
3. Radiation safety analysis.
4. Brachytherapy support services.
5. Radiotherapist consultation.
6. Technical consultation during the renovation of the radiation therapy department.
7. Provide technical expertise during the installation and acceptance of the Varian Clinac 4/100 Linear Accelerator Ximitron CX Simulator.
8. Resident educational activities.
9. Technologist and student educational activity.
10. Provide support in the various radiation therapy treatment protocols which Allegheny General Hospital participates in.
11. Provide research and developmental activities within the department.
12. Provide regional continuing educational activities for physicians, physicists and technologists by hosting various speakers and providing workshops.

Marcel M. Szal

10/86 to 7/88

Clinical Physicist
Westmoreland Hospital
532 West Pittsburgh Street
Greensburg, PA. 15601

Duties Include:

Machine calibrations of Varian Clinac 4 Linear Accelerator, G.E. Maxitron 300 Orthovoltage Treatment Machines. External and intracavitary treatment planning utilizing a EMI Rad 8 Treatment Planning System. Provide physics consultations to radiotherapist. Assist in radiation safety analysis and provide prescription verification with treatment chart reviews.
Provide technical expertise in the acceptance of the CMS Modulex Treatment Planning System, Ximitron CX Simulator and the Varian Clinac 1800.
Provide continuing QA and radiation safety services to the diagnostic radiology department.

7/88 to present

Clinical Physicist
Triangle Radiation Oncology Associates
701 Fifth Street
P.O. Box 570
Beaver, Pa. 15009

Duties Include:

Provide clinical physics support for two of triangle radiation oncology sites and backup support for their other sites. Provide acceptance testing and continued support for 2 Varian Clinac 6/100 accelerators, C.G.R. saturn IIF accelerator, C.G.R. therapy simulator and G.E. Target I treatment planning system. Provide support in the acceptance of an Oldelft diagnostic quality simulator.
Provide continued day to day physics support for external beam, brachytherapy and radiation safety at two sites.

Marcel M. Szal

PROFESSIONAL AFFILIATIONS

Health Physics Society

Western Pennsylvania Health Physics Society

American Association of Physicists in Medicine

AAPM Penn-Ohio Chapter

EDUCATION

1980:	University of Pittsburgh Radiological Health Master of Science in Hygiene
1978:	California State College California, Pennsylvania Biology, Bachelors of science
1979-1980:	Community College of Allegheny County Nuclear Medicine Technology

CERTIFICATIONS

1986:	American Board of Radiology Therapeutic Radiological Physics

OFFICES HELD

1986-1987:	Secretary of Penn-Ohio Chapter AAPM
1988:	President elect of Penn-Ohio Chapter of AAPM
1989:	President Penn-Ohio Chapter of AAPM

Marcel M. Szal

N.R.C. LICENCES

Ohio Valley Hospital	34-13317-01	Teletherapy
The Washington Hospital	37-10363-01	Non human use, Brachytherapy
Allegheny Health, Education & Research	37-01317-01	Research, Non human use Brachytherapy
	37-01317-02	Teletherapy
The Medical Center	37-11562-01	Brachytherapy H.D.R.
Shadyside Hospital		Teletherapy

Marcel M. Szal

RESEARCH PUBLICATIONS AND WORKSHOPS

Szal, M.M., Comparison of information density and integral count imaging techniques in nuclear medicine, University of Pittsburgh, , PA. June 1980

Szal, M.M., Baird, L.C. Timer Manipulation Bias MECRP NEWSLETTER 1982

Szal, M.M., Summers, R.E., Baird, I C., Shrivastava, P.N., Quality Assurance of Radiotherapy Accelerators Workshops TATA Memorial Hospital, Bombay India, December, 1982

Szal, M.M. Radiation Therapy Ion Chamber Intercomparison Mid-Atlantic AAPM Meeting Roanoke, VA. March, 1982

Szal, M.M. Radiation Therapy Ion Chamber Intercomparison Radiation Therapy Technology Conference Cincinnati, OH. October, 1982

Szal, M.M., Smarra, N., Bhatnagar, J.P., Shrivastava, P.N., Agarwal, B.K. AAPM presentation on Professionalism In Medical Physics University Of Pittsburgh, , PA. March 1987

Szal, M.M., Smarra, N., Bhatnagar, J.P., Shrivastava, P.N., Agarwal, B.K. AAPM presentation on the Design and Survey of a High Energy Linear Accelerator Facility with emphasis on neutrons Howard Johnsons Motor Lodge, Monroeville Pa. August 1987

Szal, M.M. et Al
Diagnostic Radiology Workshop
Westmoreland Hospital, Greensburg Pa. 1989

REFERENCES RECEIVED UPON REQUEST

The American Board of Radiology

Organized through the cooperation of the
American College of Radiology, the American Roentgen Ray Society,
the American Radium Society, the Radiological Society of North America,
the Section on Radiology of the American Medical Association
and the American Society of Therapeutic Radiologists
Hereby certifies that

Marcel Michael Szal, M.S.

Has pursued an accepted course of graduate study
and clinical work, has met certain standards and qualifications and
has passed the examinations conducted under the authority of
The American Board of Radiology
On this sixth day of June, 1986
Thereby demonstrating to the satisfaction of the Board
that he is qualified to practice the specialty of

Therapeutic Radiological Physics

THE AMERICAN BOARD OF RADIOLOGY
INCORPORATED IN THE DISTRICT OF COLUMBIA
1934

AMERICAN BOARD OF MEDICAL SPECIALTIES

Luther W. Brady, M.D.
President

Secretary

RAJIV SHINGAL, Ph.D.
[redacted]

CLINICAL PHYSICIST

- Two years of professional experience in Clinical Radiation Oncology Physics.
- Two and a Half year of professional experience in Diagnostic Radiology Physics.
- Strong background in therapeutic radiology and Diagnostic Radiology.
- Capable of conducting complete dosimetric calibration of high energy (Single and Dual Energy) X-ray and electron (Multi Energy) Linear accelerators.
- Provided clinical services at Two Free Standing Cancer Treatment Centers.
- Experience teaching radiological physics and routine clinical work.
- Experience teaching graduate and undergraduate courses in Physics.
- Extensive experience of solving scientific problems and software development.
- Designed, developed and implemented application programs using massively parallel and serial computers, and workstation using Unix platform.

OBJECTIVES

- To incorporate modern trends of radiation dosimetry in everyday practice and automated treatment planning.
- To provide high-quality teaching to residents, physicists, and paramedical personnel.

PROFESSIONAL EXPERIENCE

RADIOLOGICAL PHYSICIST - Triangle Radiation Oncology Associates, Inc., Mercy Radiation Oncology Center, Mercy Hospital, 1400 Locust Street, Pittsburgh, PA 15219-5188 (May 1995 - Present).

RADIOLOGICAL PHYSICIST - Radiological Sciences Associates, Inc., Mercy Radiation Oncology Center, Mercy Hospital, 1400 Locust Street, Pittsburgh, PA 15219-5188 (1993 - April 1995).

RESEARCH FELLOW - Department of Radiology, Stemmler Hall, University of Pennsylvania, Philadelphia (1992 - 1993).

Responsibilities and Accomplishments Include:

- Acceptance testing and commissioning of Siemens KDS2 linear Accelerator - Dual Photon Energy and Six electron Energies.
- Calibrating Siemens KDS2, Mevatron-12, Mevatron-74, Saturn 18 X and Varian Clinac 6/100 Linear Accelerators - Daily, weekly, monthly and annual calibration.
- Calibrating Siemens Simulator.
- External Beam and Irregular Field Treatment planning on Theraplan and GE Target I treatment planning computer.
- Calculations of Monitor Units and treatment times for treatment purposes as well as doses to different organs in a treatment field.
- Measurements of in-vivo doses in patients using TLD's and Diodes.
- Simulating patients for treatment planning.
- Developed Dosimetry and Treatment Planning for Total Skin Electron Beam (TSEB) Therapy on Siemens KDS2 Accelerator.
- Brachytherapy with Cs-137 Sources.
- Preparing exact block of shielding materials for shaping irregular fields using high density styrofoam and cerroband.
- Weekly review of Patient charts.
- Calibration and quality assurance of Diagnostic X-ray equipment - CT Scanners, Fluoroscopic, Radiographic, Dental and Mammographic Units.
- Weekly Surveys and contamination checks in Nuclear Medicine.
- Linearity checks of Dose calibrators.
- Radiation Safety aspects and administration of I-131 Therapy.

COMPUTER EXPERIENCE

- Analyzed, Designed, and implemented Application program for local and non local image processing and display of digitized images.
- Several projects (more than 40) to study collisions of electrons and multiply charged ions with atoms and molecules with a view to understand collision mechanism and interpret experimental results.
- Extensive experience in C, Fortran and Cray Fortran Programming language.

HARDWARE

- Experience with MAINFRAME- IBM, Amdahl, VAX, SUN workstation (UNIX platform) and personal computers.

OTHER PROFESSIONAL EXPERIENCE

- Taught several undergraduate and graduate level courses.
- Developed a course for graduate students.
- Presented several seminars. Two Invited Talks in International conferences.
- Three independent Research Proposals in a joint grant at Kansas State University funded by DOE.
- Published more than 40 papers in Refereed Journals.

EMPLOYMENT

Visiting Assistant Professor, (1991 - 1992) J R MacDonald Laboratory, Kansas State University.

Assistant Research Professor, (1988 - 1991) J R MacDonald Laboratory, Kansas State University.

Senior Research Assistant, (1980 - 1988) Department of Physics, University of Durham, Durham DH1 3LE, England.

FORM NRC-313M-SUPPLEMENT A
(8-78)

U.S. NUCLEAR REGULATORY COMMISSION

TRAINING AND EXPERIENCE
AUTHORIZED USER OR RADIATION SAFETY OFFICER

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER	2. STATE OR TERRITORY WHICH LICENSED TO PRACTICE MEDICINE
RAJIV SHINGAL, Ph. D.	

3. CERTIFICATION

SPECIALTY BOARD (A)	CATEGORY (B)	MONTH AND YEAR CERTIFIED (C)

4. TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES

FIELD OF TRAINING (A)	LOCATION AND DATE(S) OF TRAINING (B)	TYPE AND LENGTH OF TRAINING	
		LECTURE/ LABORATORY COURSES (Hours) (C)	SUPERVISED LABORATORY EXPERIENCE (Hours) (D)
a. RADIATION PHYSICS AND INSTRUMENTATION	MEERUT UNIVERSITY INDIA: M. Sc., M. Phil	Two Semesters	Two Semester
b. RADIATION PROTECTION	Mercy Hospital, Pittsburgh Washington Hospital, Washington, PA		Two Years One Year
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY	Meerut University, Meerut, India: M.Sc.	One Semester	
d. RADIATION BIOLOGY			
e. RADIOPHARMACEUTICAL CHEMISTRY			

5. EXPERIENCE WITH RADIATION. *(Actual use of Radioisotopes or Equivalent Experience)*

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
Cs-137		Mercy Hospital	Two Years	Brachytherapy
Ir-192		Washington Hospital	Nine Months	Brachytherapy
I-125		Washington Hospital	Nine Months	Brachytherapy
		Washington Hospital	Nine Months	Brachytherapy

Curriculum Vitae

Name:
Address: [redacted]

Phone: [redacted]

Work: Triangle Radiation Oncology Associates
701 5th St.
PO Box 570
Beaver, Pa. 15009

Phone: [redacted]

Birthdate: [redacted]
Marital:

Education: Univ. of Pittsburgh BA Physics 1970
Univ. of Pittsburgh Msc(Hyg) Rad Health 1974

Certifications:

American Board of Radiology, Therapeutic Radiological Physics 1982

Professional Experience:

1974-1976 Mideast Center for Radiological Physics
Allegheny General Hospital
Pittsburgh, Pa.
Director: Prakash Shrivastava PhD
Postion: Radiation Physicist

Duties: Review of manual and computerized dosimetry, treatment unit performance, and computer applications at participating National Cancer Institute projects throughout the Eastern United States. Also worked on physics protocols and procedures through various Physics Centers Task Groups.

1976-1980 St. Joseph's Hospital
Department of Radiation Oncology
Milwaukee, Wisconsin
Clinical Director: Stan Marks MD
Head Physicist: John Whitten Bsc
Position: Assistant Physicist

Duties: Calibrations, quality assurance, and manual and computerized calculations utilizing various therapy units including Varian Clinac 18 (10 mv xrays and 6 - 18 mev electrons), 60 Cobalt and ortho-voltage units at St. Joseph's Hospital as well as three outlying satellite institutions. In addition, duties included brachytherapy calculations for 137-CS used in gynecological applications and 192-IR ribbons and 198-AU seeds in various applications. Remaining duties included quality assurance in diagnostic radiology and nuclear medicine, radiation safety responsibilities throughout the hospital and teaching of physics, mathematics, and radiobiology in the School of Xray Technology, School of Radiation Therapy Technology and Radiology Resident's program.

1980-1981 Henry Ford Hospital
Department of Radiation Therapy
Detroit, Mich.
Clinical Director: Murray Boles MD
Director of Physics: Farideh Bagne PhD
Position: Clinical Radiological Physicist

Duties: Calibrations, manual and computerized calculations, on various therapy units including Varian Clinac 12 (6 mv xrays and 5-14 mev electrons), 60-Cobalt, and orthovoltage. Supervision of three junior physicists and two dosimetrists as well as overseeing machine quality assurance program as well as dosimetry program. Performed measurement and entry of various beam data into computerized dosimetry system. Calculations were done using AECL Therplan computer system. Also responsible for calculation and planning of 137-CS gynecological applications, 192-IR ribbons and 125-I used in various applications. Responsible for Radiation Safety in the department of Radiation Therapy and teaching mathematics and physics in the School of Radiation Therapy Technology.

1981-1982 Erlanger Medical Center
Chattanooga, Tn.
Clinical Director: C. W. Kimsey MD
Position: Clinical Physicist

Duties: Acceptance of new department at Erlanger including acceptance of Varian Clinac 18 (10 mv x-rays and 6 - 18 mev electrons) 60 - Cobalt unit, Picker Simulator, and GE RTplan computer. Development and implementation of department dosimetry program including supervision and training of one dosimetrist as well as calibration and quality assurance program on the various treatment units. Calculation and planning of brachytherapy dosimetry, including 137-CS, 226-RA, 192-IR, and 125-I used in various applications.

1982-1983 Allegheny General Hospital
Pittsburgh, Pa

Clinical Directors: Joseph Concannon MD
James Hughes MD
Director of Physics: Roy Summers MS
Prakash Shrivastava PHD
Position: Clinical Radiation Physicist

Duties: Calibrations and supervision of dosimetry for various therapy units at Allegheny Gen'l Hospital including Siemen's Mevatron (22 mv x-rays and electrons from 4 - 22 mev), Varian Clinac IV, and 60 - Cobalt as well as two remaining Clinac IVs and one 60-Cobalt unit at three satellite institutions. Computerized calculations were done using RAD8 computer system. Also responsible for quality assurance of the above listed units.

1983-present Triangle Radiation Oncology Associates
Beaver, Pa.
Directors: James Hughes MD
Joseph Concannon MD (retired)
Position: Chief Physicist

Duties: Supervision of clinical physics program for a private radiation oncology group that includes six institutions with a total of four dual energy accelerators (Philips SL-20, Siemens MD 6/15, Varian 1800, and CGR Saturne II), four single energy accelerators (two Varian 6mv and two Varian 4mv machines), and two cobalt units, as well as four simulators.
Total physics and dosimetry staff includes four physicists and four dosimetrists. Responsible for development of and overseeing group wise dosimetry program, as well as dosimetry and machine quality assurance program. Computer systems at the various institutions include AECL Therplan, GE RTplan and CMS planning system. Beam scanning systems include one Wellhofer WP600 and two Multidata RTP systems. Brachytherapy planning and calculations are done for 137-CS and 192-IR. Duties also include calibration, quality assurance, machine acceptance, and measurement of beam treatment data and computer entry. In addition, responsible for providing technical advice on the purchase of the large majority of the above equipment, as well as advising on shielding design and specification for the above units as well as design for associated physics and computer space. Responsible for Radiation Safety aspects of Radiation Therapy programs at the various institutions.

Publications:

Masters Thesis : Measurement of Gonadal and Fetal Dose During Treatment for Hodgkins Disease using Inverted Y and Mantle Techinques and a Discussion of Its Somatic and Genetic Significance. Univ of Pgh 1974.

Presentations

Genetic Significance of Gonadal Dose during Treatment for Hodgkin's Disease. TG Combine and AG Bukovitz. Presented at 1974 Symposium on Population Exposures, Knoxville, Tn. 1974. (Published in Conference Proceedings)

A Technique for Separating High and Low Energy Beam Components in a Varian Clinac IV Beam using In Air Measurements with Variable Build Caps. TG Combine, PN Shrivastava, JY Ting, RE Summers. Presented at AAPM National Meeting 1975.

Professional Organization Membership

American Association of Physicists in Medicine

Health Physics Society

Military Service

1970-1972 United States Navy
Communications Technician
Honorable Discharge

Other Work Experience

1972-1973 Assistant Manager
Signal Finance Corp
Sharon, Pa.

The American Board of Radiology

Organized through the cooperation of the
American College of Radiology, the American Roentgen Ray Society,
the American Radium Society, the Radiological Society of North America,
the Section on Radiology of the American Medical Association,
the American Society for Therapeutic Radiology and Oncology,
and the Association of University Radiologists
Hereby certifies that

David L. Wondergy, M.S.

Has pursued an accepted course of graduate study
and clinical work, has met certain standards and qualifications and
has passed the examinations conducted under the authority of
The American Board of Radiology

On this eleventh day of June, 1987

Thereby demonstrating to the satisfaction of the Board
that he is qualified to practice the specialty of

Therapeutic Radiological Physics

THE AMERICAN BOARD OF RADIOLOGY
INCORPORATED IN THE DISTRICT OF COLUMBIA
1934

M. Paul Capp, M.D.
President

Secretary

AMERICAN BOARD OF MEDICAL SPECIALTIES

The American Board of Radiology

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American College of Radiology, the American Roentgen Ray Society,
the American Radium Society, the Radiological Society of North America,
the Section on Radiology of the American Medical Association
and the American Society of Therapeutic Radiologists
Hereby certifies that

Marcel Michael Szal, M.S.

Has pursued an accepted course of graduate study
and clinical work, has met certain standards and qualifications and
has passed the examinations conducted under the authority of
The American Board of Radiology
On this sixth day of June, 1986
Thereby demonstrating to the satisfaction of the Board
that he is qualified to practice the specialty of

Therapeutic Radiological Physics

THE AMERICAN BOARD OF RADIOLOGY
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1934

AMERICAN BOARD
MEDICAL SPECIALTIES

Lauren W. Brady, M.D.
President

Edward P. Hubbard, M.D.
Secretary

The American Board of Radiology

Organized through the cooperation of the
American College of Radiology, the American Roentgen Ray Society,
the American Radium Society, the Radiological Society of North America,
the Section on Radiology of the American Medical Association
and the American Society of Therapeutic Radiologists
Hereby certifies that

Tony G. Combine, M.S.

Has pursued an accepted course of graduate study
and clinical work, has met certain standards and qualifications and
has passed the examinations conducted under the authority of
The American Board of Radiology
On this fourth day of June, 1982
Thereby demonstrating to the satisfaction of the Board
that he is qualified to practice the specialty of

Therapeutic Radiological Physics

THE AMERICAN BOARD OF RADIOLOGY
INCORPORATED IN THE DISTRICT OF COLUMBIA

AMERICAN BOARD OF MEDICAL SPECIALTIES

Harold L. Jacobson, M.D.
President

Secretary

The American Board of Radiology

Organized through the cooperation of the
American College of Radiology, the American Roentgen Ray Society,
the American Radium Society, the Radiological Society of North America,
the Section on Radiology of the American Medical Association
and the American Society of Therapeutic Radiologists
Hereby certifies that

Gerald Richard Medwick, D.O.

Has pursued an accepted course of graduate study
and clinical work, has met certain standards and qualifications and
has passed the examinations conducted under the authority of
The American Board of Radiology
On this first day of June, 1984
Thereby demonstrating to the satisfaction of the Board
that he is qualified to practice the specialty of

Therapeutic Radiology

THE AMERICAN BOARD OF RADIOLOGY · INCORPORATED IN THE DISTRICT OF COLUMBIA · 1934

[illegible]
President

[illegible]
Secretary

AMERICAN BOARD

The American Board of Radiology

Organized through the cooperation of the
American College of Radiology, the American Roentgen Ray Society,
the American Radium Society, the Radiological Society of North America,
the Section on Radiology of the American Medical Association,
the American Society for Therapeutic Radiology and Oncology, the Association of
University Radiologists, and American Association of Physicists in Medicine

Hereby certifies that

John Arthur Hyland, M.D.

Has pursued an accepted course of graduate study
and clinical work, has met certain standards and qualifications and
has passed the examinations conducted under the authority of
The American Board of Radiology
On this seventh day of June, 1995
Thereby demonstrating to the satisfaction of the Board
that he is qualified to practice the specialty of

Radiation Oncology

THE AMERICAN BOARD OF RADIOLOGY
INCORPORATED IN THE DISTRICT OF COLUMBIA
1934

Douglas Maynard, MD
President

William Jeanneret, MD
Secretary-Treasurer

M. Paul Capp, M.D.
Executive Director

AMERICAN BOARD

The American Board of Radiology

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American College of Radiology, the American Roentgen Ray Society,
the American Radium Society, the Radiological Society of North America,
the Section on Radiology of the American Medical Association
and the American Society of Therapeutic Radiologists
Hereby certifies that

James Michael Hughes, M.D.

Has pursued an accepted course of graduate study
and clinical work, has met certain standards and qualifications and
has passed the examinations conducted under the authority of
The American Board of Radiology
On this ninth day of June, 1973
Thereby demonstrating to the satisfaction of the Board
that he is qualified to practice the specialty of

Therapeutic Radiology

Sidney W. Nelson

C. Allen Good

THE AMERICAN BOARD OF RADIOLOGY
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1934

The American Board of Radiology

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the Section on Radiology of the American Medical Association
and the American Society of Therapeutic Radiologists
Hereby certifies that

Tarit Kanti Dutta, M.D.

Has pursued an accepted course of graduate study
and clinical work, has met certain standards and qualifications and
has passed the examinations conducted under the authority of
The American Board of Radiology
On this sixth day of June, 1985
Hereby demonstrating to the satisfaction of the Board
that he is qualified to practice the specialty of

Therapeutic Radiology

AMERICAN BOARD OF RADIOLOGY
INCORPORATED
IN THE
DISTRICT
OF

The American Board of Radiology

Organized through the cooperation of the
American College of Radiology, the American Roentgen Ray Society,
the American Radium Society, the Radiological Society of North America,
the Section on Radiology of the American Medical Association,
the American Society for Therapeutic Radiology and Oncology,
and the Association of University Radiologists
Hereby certifies that

Mark G. Trombetta, M.D.

Has pursued an accepted course of graduate study
and clinical work, has met certain standards and qualifications and
has passed the examinations conducted under the authority of
The American Board of Radiology
On this seventh day of June, 1990
Thereby demonstrating to the satisfaction of the Board
that he is qualified to practice the specialty of

Radiation Oncology

AMERICAN BOARD OF RADIOLOGY
INCORPORATED
IN THE
DISTRICT
OF
COLUMBIA

Robert G Parker
President

Secretary

AMERICAN BOARD
OF
MEDICAL SPECIALTIES

Affiliation Announcement

Trinity Health System
380 Summit Avenue
Steubenville, OH 43952

Effective June 1, 1996, St. John Medical Center (EIN 34-0875691) and Ohio Valley Hospital (EIN 34-0714474), both located in Steubenville, Ohio, will enter into an affiliation. Both hospitals will combine their separate operations and become a single hospital with two campuses.

The terms of this affiliation are currently described as follows. Trinity Health System (Trinity), an Ohio non-profit corporation, will become the new "parent" organization for both St. John Medical Center and Ohio Valley Hospital. Trinity will assume the management and control of both hospitals. Upon this transaction, St. John Medical Center and Ohio Valley Hospital will be renamed Trinity Medical Center West and Trinity Medical Center East, respectively.

All general correspondence should be mailed to our existing campus addresses.

Trinity Medical Center West
4000 Johnson Road
Steubenville, OH 43952

Trinity Medical Center East
380 Summit Avenue
Steubenville, OH 43952

Should you have any questions, please contact the Purchasing Department of the respective campus.

TRINITY
HEALTH SYSTEM

Department of Taxation
Division of Sales and Excise Taxes

Blanket Certificate of Exemption

The undersigned certifies that all material, merchandise, or goods purchased from

_____ shall be purchased:

_____ For resale in the form of tangible personal property.

_____ To incorporate the item trar : 'erred as a material or part into tangible personal property fo sale by manufacturing, assembling, processing, or refining.

_____ To use or consume the item transferred directly in the production of tangible persona property for sale by manufacturing, processing, refining, mining, production of crude oil anc natural gas, farming, horticulture, or floriculture.

_____ To use or consume the item transferred directly in making retail sales, the rendition of a public utility service, industrial cleaning of tangible personal property, the rendition of towe and linen service or supply, or commercial fishing.

_____ In interstate commerce.

__X__ By Charitable organization.

_____ Other - specify in detail. _____

_____

This Certificate shall be considered a part of each other which should be given to the above - name vendor, unless the order otherwise specifies.

This Certificate to continue in force until revoked.

I/We agree that, should the tangible personal property purchased under this Certificate be determined t be taxable, I/we shall be subject to the levy provided by law.

Signed: **Trinity Health System**
380 Summit Ave.
Steubenville, OH 43952

Federal EIN Numbers:

Trinity Health System : 34-1818681 ☐
Trinity Medical Center West: 34-0875691 ☐
Trinity Medical Center East: 34-0714474 ☐

By : Fred Brewer
Title : President

Date : **06/01/96**

Vendor License No. : Trinity Medical Center West: 41-32525
Trinity Medical Center East: 41-32526

Code Classification No. 9