NRC FORM 374
(6-94)

U.S. NUCLEAR REGULATORY COMMISSION

MATERIALS LICENSE

Amendment No. 17

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.

301233

Licensee	
1. Trinity Health System Trinity West D/B/A Trinity Medical Center West 2. 4000 Johnson Road Steubenville, OH 43952	In accordance with letter dated May 23, 1996 3. License Number 34-06578-02 is amended in its entirety to read as follows:
	4. Expiration Date July 31, 2000
	5. Docket or Reference No. 030-02760

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

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.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
34-06578-02

Docket or Reference Number
030-02760

Amendment No. 17

CONDITIONS

10. Location of Use: St. John's Medical Center, 4000 Johnson Road, Steubenville, Ohio.

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

12. Authorized Users:

A. William Hunter Vaughan, M.D., for material in 10 CFR 35.100 and 35.200 (excluding xenon-133).

B. Ronald I. Veatch, M.D., for material in 10 CFR 35.100, 35.200 (excluding xenon-133) and 35.300.

C. Conrad S. Revak, M.D., for material in 10 CFR 35.100, 35.200 (excluding xenon-133) and 35.300.

D. Marshall S. Carlin, D.O., for material in 10 CFR 35.100, 35.200 (excluding xenon-133) and 35.300.

E. Heung Joon Yoo, M.D., for material in 10 CFR 35.100 and 35.200.

F. Mark G. Trombetta, M.D., for material in 10 CFR 35.400.

G. Gerald R. Medwick, D.O., for material in 10 CFR 35.400.

H. John A. Hyland, M.D, for material in 10 CFR 35.400.

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

J. Tarit K. Dutta, M.D., for material in 10 CFR 35.400.

K. Marcel M. Szal, M.S., for material in 10 CFR 35.400, for survey instrument calibration only.

L. Frank P. Ottino, M.S., for material in 10 CFR 35.400, for survey instrument calibration only.

13. Pursuant to Title 10, Chapter 1, Code of Federal Regulations, Part 40, "Domestic Licensing of Source Material," the licensee is authorized to possess, use, transfer, and import up to 999 kilograms of depleted uranium contained as shielding material in the molybdenum-99/technetium-99m generators authorized by this license.

14. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material to quantities below the minimum limit specified in 10 CFR 30.35(d) for establishing decommissioning financial assurance.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
34-06578-02

Docket or Reference Number
030-02760

Amendment No. 17

15. The licensee shall maintain records of information important to safe and effective decommissioning at 4000 Johnson Road, Steubenville, Ohio per the provisions of 10 CFR 30.35(g) until this license is terminated by the Commission.

16. This license is based on the licensee's statements and representations listed below:

A. Application dated April 11, 1990; and

B. Letters dated April 16, 1991, June 18, 1991, and May 23, 1996.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date September 20, 1996

By Charles A. Gill
Nuclear Materials Licensing Branch, Region III

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

(FOR LFMS USE)
INFORMATION FROM LTS

PROGRAM CODE: 02120
STATUS CODE: 2
FEE CATEGORY: 7C
EXP. DATE: 19950731
FEE COMMENTS:
DECOM FIN ASSUR REQD: N

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED
APPLICANT/LICENSEE: TRINITY WEST
RECEIVED DATE: 960419
DOCKET NO: 3002760
CONTROL NO.: 301233
LICENSE NO.: 34-06578-02
ACTION TYPE: AMENDMENT

2. FEE ATTACHED
AMOUNT: X
CHECK NO.: X

X addl info
39782-58

3. COMMENTS

SIGNED D. Hersey
DATE 4-26-96

1996 MAY -2 PM 4:41

B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE 03 IS ENTERED /✓/)

1. FEE CATEGORY AND AMOUNT: 7C FEE NOT REQUIRED

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

3. OTHER

SIGNED SC
DATE 5/2/95

RECEIVED
MAY 13 1996
REGION III

RECEIVED BY LFDCB
Date May 2 1996
Log May 2 11
By SC
Date Completed 5/2/96

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 - 399682
FEE NOT REQUIRED

BE1-198147-1

31/233

SEP 2 4 1996

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

Dea[r] Mr. Calbone:

Enclosed is Amendment No. 17 to your NRC Material License No. 34-06578-02 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 23, 1996. Based on the information provided, the NRC consents to the transaction with no further questions. Also, please note that the expiration date on your license has been extended five years.

Please be advised that the attached amendment only added some of the authorized users you requested. Additional information is required before your application can be further reviewed. Dr. Shingal's authorized use could not be approved because his preceptor statement was not signed. Messrs. Combine's and Wonderly's authorized uses could not be approved because their board certification was more than seven years ago. You, therefore, need to address the recentness of training requirements pursuant to 10 CFR Part 35.972. The other parts of your amendment request can not be reviewed further until you resubmit your application per the guidance of Regulatory Guide 10.8, Revision 2 (**enclosed**), specifically for an amendment requesting authorization for multiple sites of use under one license (see Items No. 1 through 10 below). In addition to addressing the specific items below, it is requested that you resubmit your application in a manner that addresses all the items in the regulatory guide. Also, you need to specify the authorized uses requested at each facility, along with the appropriate documentation. Please submit the requested information as additional information, within 30 days, to Control No. 301233 to preclude an additional fee.

301233

1. Amendment Format

To combine your two medical byproduct material licenses under License No. 34-06578-02, you need to concurrently request termination of License No. 34-13317-02 and the amendment of License No. 34-06578-02. The amendment will need to include adding the Trinity Medical Center East facility at 380 Summit Avenue, Steubenville, Ohio as an additional place of use for specifically stated byproduct material uses.

2. Multi-Site Management Oversight

Before applications requesting authorization for multiple sites of use under one license (including amendment requests that expand a licensed program to multi-site) can be granted, the applicant needs to demonstrate that the radiation safety programs are adequate, both in scope and depth, to oversee safe use of licensed material at each facility. This includes adequacy of management oversight; delegation of responsibility; and established, reciprocal lines of communication between users and management to ensure safe operations at each site. Therefore, in your resubmittal, please provide the following information.

a. Document an administrative structure, organization, and procedures adequate to ensure safe operation by users at both facilities.

b. Include an organizational chart depicting the licensee's management structure, reporting paths, and flow of authority.

c. In your case, where licensees unite their programs to form an affiliation of association or joint operating agreement, the application must provide a clear enunciation of the management structure and related authority for implementation and conduct of the radiation safety program at each individual facility. Please confirm that no voids will be created as the result of the elimination of radiation safety program management at facilities which previously operated under their own NRC licenses (e.g., the authority to stop unsafe practices and implement safety procedures).

d. Please discuss senior management oversight and mechanisms used to ensure adequate control over day-to-day licensed activities at each site, including the assignment of duties and allocation of necessary resources.

e. Statement of delegation of authority from senior management to the RSO (and radiation safety committee (RSC), when established) signed by senior management. This statement must include provisions for the RSO to carry out his/her authority over each site's program without redirection or hindrance by site management.

f. Assurance from senior management that the RSO has sufficient time to perform duties, appropriate staff support, and provisions for RSO absence.

g. Confirm that senior management will conduct periodic site tours and meetings with site management, the RSO (and the RSC, when established).

h. Describe your mechanism for reporting to and informing management of unsafe practices and incidents, and the management role in responding to such circumstances.

i. Describe the methods and checks established to ensure that the RSO possesses and reviews current regulations.

j. Describe the chain of authority for ensuring compliance with regulatory requirements.

k. Assurance that senior management has an active role in sharing program responsibilities with the RSO when an RSC is not established.

l. Describe senior management review of and involvement with program audits and evaluations, through membership on the RSC or otherwise.

m. Provide a written explanation of the role of site management to assist with the tasks of program management as outlined above (2.d-l) for senior management.

3. Multi-Site Radiation Safety Officer

Provide a written description of the RSO's role and duties to ensure compliance with regulations, license conditions, and good radiation safety practices. Although the tasks of the RSO may be delegated to other personnel, the responsibility and authority over the tasks remain with the RSO. Provide a written description of the office location, phone number, and telefacsimile number (if applicable) of the location where the RSO will be situated. Confirm that the duties and responsibilities of the RSO include:

a. Frequency of reporting to, and meetings with, executive and site management (and the RSC, when established).

b. Regular site visits, monitoring (e.g., facility/site surveys and review of reports and records for each site), and feedback to site personnel, as well as support staff, to ensure that daily operations at each site include radiation safety activities, approved procedures, safe practices, and compliance with regulations and licensing conditions.

c. Periodic, interactive (i.e., with feedback) program audits at each site, indicating audit frequency and reporting commensurate with site operations.

d. Mechanisms for being alerted and responding to unsafe practices and urgent situations that may occur at any site.

e. Authority to make decisions and terminate unsafe practices and activities jeopardizing the safety of workers, the public, or environment.

4. Multi-Site Radiation Safety Support Staff

The RSO may be supported by a staff who assist in the maintenance and control of the licensed program at each site or a number of sites. Site personnel may also be enlisted to assist the RSO. As previously noted, the RSO may delegate some of his/her radiation safety tasks to these individuals; however, the authority and responsibility remain with the RSO. Please confirm that support staff duties, including provisions for reporting to the RSO, are or will be clearly specified, in writing, with sufficient time allotted for completion. Describe provisions for regular interaction and feedback from the RSO, management, and RSC (when an RSC is established).

5. Multi-Site Radiation Safety Committee

In your application, please include addressing the following RSC functions:

a. Appointment of representatives from each site, as well as the RSO and senior management.

b. Establishment of routine meeting schedule.

c. Review of program audits and evaluations.

d. Statement of duties, emphasizing program development, implementation, and oversight.

e. Quorum requirements.

6. Multi-Site Communication

Because there are multiple oversight levels, please clearly address communication and accountability systems including:

a. Delegation of clear and appropriate levels of authority, indicating sufficient organizational freedom and management prerogative to communicate with and direct personnel regarding NRC regulations and/or license provisions.

b. Descriptions of program review and reporting on a regular basis.

c. Mechanisms for addressing urgent situations.

d. Mechanisms for informing all personnel of program changes.

e. Provisions to make personnel aware of the appropriate representatives to contact at each level of authority.

f. Assurance that each level of oversight is available to interact with other levels, authorized users, and supervised workers, both as needed and on a regular basis.

g. Attention to contracted services in each of the six above areas.

7. Additional Multi-Site Program Areas

Please provide specific information, including the following areas:

a. Transportation of license material (including radioactive waste) between sites.

b. Applicability of decommissioning requirements.

c. Sharing of safety equipment.

d. Coordination among sites for inventory control of licensed material with the intended focus of continually monitoring types and quantities of material, thereby ensuring that regulatory possession limits are not exceeded.

8. Co-Radiation Safety Officers

In Item No. b of your May 23, 1996 letter, you stated that the RSO for the Multi-Site license would remain Dr. Vaughan. However, you wish to name Ronald I. Veatch, M.D. as Associate RSO located at the Trinity Medical Center East site. Dr. Veatch would be responsible to Dr. Vaughan for the management of the East site's program. Please be advised that we cannot authorize a Co-RSO arrangement as we want one individual to have overall responsibility for the radiation safety program. However, if requested, we will designate a qualified individual(s) to be named as an

"Assistant RSO" who is responsible to and reports to the RSO. The assistant(s) may act for the RSO in limited or all capacities in the absence of the RSO. If you wish to pursue such a request, you need to clearly state who you are requesting to be RSO and Assistant RSO(s). Further, you need to clearly state the duties, responsibilities and limitations placed on the Assistant RSO(s) and in what situations he/she will act for the RSO; i.e., only in RSO's absence, etc. It needs to be made clear that the Assistant RSO(s) will be responsible to and report to the RSO for all duties assigned or delegated to the Assistant RSO(s).

9. Proposed Changes in Authorized Use of License Material

In Item e. of your May 23, 1996 letter, you indicated that you plan to combine uses of 35.100, 35.200, 35.300, 35.400 and 31.11 byproduct material and deleted uranium. You also state that the Brachytherapy Program will be conducted at the East site. Please be advised, as discussed in Item No. 1, you must concurrently request a termination of License No. 34-13317-02 and an amendment to License No. 34-06578-02. Your letter dated May 23, 1996 does not do this, nor does it take into account that currently the two licenses are authorized for different byproduct materials and different authorized uses of that material. For example, the authorized bracytheraphy program at the two facilities is significantly different. You must resolve this difference in your application in a manner that results in terminating the Trinity East license and amends the Trinity West license with appropriate documentation (see Regulatory Guide 10.8, Revision 2 **(enclosed)** for application guidance).

10. Multi-Site Authorized Users

Your letters dated May 15, 1996 and May 23, 1996 are mute on the Authorized Users proposed for Trinity East while still operating under license No. 34-13318-02. However, all previous correspondence (letters dated April 12, 1996, May 15, 1996, and May 23, 1996) from Lawrence E. Pliskin of Bricker & Eckler Law Offices stated that there would be no changes regarding persons named in the license. Therefore, the NRC did not change any of the persons named in the license. If this is incorrect, please submit a request for the appropriate Authorized Users (with the supporting qualification documentation) as additional information, as soon as possible, to Control No. 301234 to preclude an additional fee.

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 or Radiation Safety Officer 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).

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;

   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, prompt 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.: 34-06578-02
Docket No.: 030-02760

Enclosures: 1. Amendment No. 17
2. Regulatory Guide 10.8, Revision 2

DOCUMENT NAME: M:\03002760.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								
DATE	09/20/96								

OFFICIAL RECORD COPY

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.

MAY 2 8 1996

RECEIVED
MAY 2 8 1996
REGION III

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 transferred as a material or part into tangible personal property for sale by manufacturing, assembling, processing, or refining.

_____ To use or consume the item transferred directly in the production of tangible personal property for sale by manufacturing, processing, refining, mining, production of crude oil and 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 towel 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 - named 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 to 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. 96

TRINITY
HEALTH SYSTEM

380 Summit Avenue
Steubenville, Ohio 43952

MAY 23, 1996

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

RE: License Numbers:
34-06578-02 (Control #301233)
34-13317-02 (control #301234)

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 earlier correspondence of December 20, 1995 and January 10, 1996, relative to the above licenses.

Effective June 1, 1996, St. John Medical and Ohio Valley Hospital will affiliate forming Trinity Health System. At that time, we wish to combine our Byproduct Material Licenses under license number 34-06578-02.

Additional changes are requested to procedurally align our programs and meet new NRC regulations which have gone into effect since the submission of our original license application. Please reference the enclosed information for the additional changes.

To further clarify these changes, please also accept the following revision to the questions answered in the separate documents submitted earlier.

a. The name of the organization, if changed.

Trinity Health System
380 Summit Avenue
Steubenville, Ohio 43952

MAY 31 1996

VHA

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

Please add the following (see attachment) Authorized Users.

The R.S.O. remains the same, however we wish to name Ronald I. Veatch, M.D. as Associate R.S.O. located at the Trinity Medical Center East site. Dr. Veatch will be responsible to Dr. Vaughan for the management of the East site's program.

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,** while Ohio Valley Hospital will remain in business as Trinity East, d/b/a/ **Trinity Medical Center East**.

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 combining the Authorized Users for 35.100, 35.200, 35.300, and 31.11 materials, and adding Authorized users for 35.400 and Depleted Uranium.

The Brachytherapy Program will be conducted at the East site. We have included our Q.M.P. for this service as an attachment.

While the facility locations will not change, the street addresses for both sites will be, they are:

Trinity Medical Center West
4000 Johnson Road
Steubenville, Ohio 43952

Trinity Medical Center East
380 Summit Avenue
Steubenville, Ohio 43952

During the transition, because of contractual issues with physician groups, the facilities will function under separate existing procedures. With Dr. Vaughan, the corporate R.S.O., managing the Operations at the West site and overseeing Dr. Veatch who will manage the East site. A single set of operating procedures will be developed which will incorporate the processes of both sites over the next several months.

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

The brachytherapy program will be instituted at the East site. See attachment.

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 transferors, St. John Medical Center and Ohio Valley Hospital, 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.

If there are any questions regarding this matter please do not hesitate to contact Mr. David Arnold, at 614-264-8158.

Sincerely,

For St. John Medical Center:

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

For Ohio Valley Hospital:

Transferee:
Trinity Health System

By _____
Fred B. Brower,
President and C.E.O

Transferor:
Ohio Valley Hospital

By _____
Fred B. Brower,
President

NRC FORM 313 (6-93)
10 CFR 30, 32, 33
34, 35, 36, 39 and 40

U. S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR MATERIAL LICENSE

APPROVED BY OMB: NO. 3150-0120
EXPIRES 6-30-96
ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 9 HOURS. SUBMITTAL OF THE APPLICATION IS NECESSARY TO DETERMINE THAT THE APPLICANT IS QUALIFIED AND THAT ADEQUATE PROCEDURES EXIST TO PROTECT THE PUBLIC HEALTH AND SAFETY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0120), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE WITH:

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

LICENSING ASSISTANT SECTION
NUCLEAR MATERIALS SAFETY BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION II
101 MARIETTA STREET, NW, SUITE 2900
ATLANTA, GA 30323-0199

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSON, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION
REGION III
801 WARRENVILLE ROAD
LISLE, IL 60532-4351

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, OR WYOMING, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TX 76011-8064

ALASKA, ARIZONA, CALIFONIA, HAWAII, NEVADA, OREGON, WASHINGTON, AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS TO:

RADIOACTIVE MATERIALS SAFETY BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION V
1450 MARIA LANE
WALNUT CREEK, CA 94596-5368

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATOY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTIONS.

1. THIS IS AN APPLICATION FOR *(Check appropriate item)*

____ A. NEW LICENSE
X B. AMENDMENT TO LICENSE NUMBER 34-06578-02
____ C. RENEWAL OF LICENSE NUMBER _____

2. NAME AND MAILING ADDRESS OF APPLICANT *(Include ZIP code)*

Trinity Health System
380 Summit Avenue
Steubenville, Onio 43952

3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

Trinity Medical Center East
380 Summit Avenue
Steubenville, Ohio 43952

Trinity Medical Center West
4000 Johnson Road
Steubenville, Ohio 43952

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

David Arnold

TELEPHONE NUMBER
(614) 264-8158

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2" X 11" PAPER. THE TYPE AND SCOPE OF INFOMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5.	RADIOACTIVE MATERIAL a. Element and mass number, b. chemical and/or physical form, and c. maximum	6.	PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.	
7.	INDIVIDUALS RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE	8.	TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.	
9.	FACILITIES AND EQUIPMENT.	10.	RADIATION SAFETY PROGRAM.	
11.	WASTE MANAGEMENT.	12.	LICENSE FEES *(See 10 CFR 170 and Sects. 170.31)* FEE CATAGORY 7C	AMOUNT ENCLOSED $

13. CERTIFICATION. *(Must be completed by applicant)* THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2,CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39 AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION

CERTIFYING OFFICER - TYPED/PRINTED NAME AND TITLE	SIGNATURE	DATE
Angelo G. Calbone, Executive Vice-President / COO		May 31, 1996

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED $	CHECK NUMBER	COMMENTS
					MAY 31 1996
APPROVED BY				DATE	

AUTHORIZED USERS FOR TRINITY HEALTH SYSTEM

USER	GROUPS	TRAINING/LICENSE
1. William Hunter Vaughan, M.D., R.S.O.	10 CFR 35.100, 35.200 (Excluding Xenon)	34-06578-02
2. Ronald I. Veatch, M.D., Assoc. R.S.O.	10 CFR 35.100, 35.200 (Excluding Xenon), 35.300	34-13317-02
3. Conrad S. Revak, M.D.	10 CFR 35.100, 35.200, 35.300 (Excluding Xenon) Attached Preceptors	34-13317-02
4. Marshall S. Carlin, D.O.	10 CFR 35.100, 35.200 (Excluding Xenon), 35.300	34-13317-02
5. Mark Trombetta, M.D.	10 CFR 35.400	37-10363-01 (Enclosed)
6. Gerald R. Medwick, D.O.	10 CFR 35.400	37-10363-01 (Enclosed)
7. John Hyland, M.D.	10 CFR 35.400	37-10363-01 (Pending)
8. Marcel Szal, M.S.	10 CFR 35.400 Calibration	37-10363-01 (Enclosed)
9. Rajiv Shingal, Ph.D.	10 CFR 35.400 (Calibration)	(Enclosed)
10. James M. Hughes, M.D.	10 CFR 35.400	37-10363-01
11. Tarit K. Dutta, M.D.	10 CFR 35.400	37-10363-01
12. Frank P. Ottino, M.S.	10 CFR 35.400 Calibration	(Enclosed)
13. Tony G. Combine, M.S.	10 CFR 35.400 Calibration	(Enclosed)
14. David Wonderly, M.S.	10 CFR 35.400 Calibration	(Enclosed)
15. H. Joon Yoo, M.D.	10 CFR 35.100, 35.200	34-13317-02

Trinity Health System
380 Summit Avenue
Steubenville, Ohio 43952

AMEND NRC LICENSE # 34-06578-02 TO ADD:

	Byproduct/Source	Chemical Form	Maximum Amount
1.	Uranium Depleted In Uranium-235	Cadmium Plated Metal	As Needed

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 IN 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 Semesters
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

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.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number: 37-10363-01
Docket or Reference number: 030-03126
Amendment No. 31

(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 1
King of Prussia, Pennsylvania 19406

NRC Form 374
(5-84)

U.S. NUCLEAR REGULATORY COMMISSION

MATERIALS LICENSE

Amendment No. 14

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. Ohio Valley Hospital	In accordance with application dated August 11, 1986 3. License number 34-13317-02 is amended in its entirety to read as follows:
2. 380 Summit Avenue Steubenville, OH 43952	4. Expiration date: March 31, 1992
	5. Docket or Reference No.: 030-07576

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. 2.0 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.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number: 34-13317-02

Docket or Reference number: 030-07576

Amendment No. 14

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
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. 1.0 curies total for all sources authorized in Subitem 6.E.
F. Xenon-133	F. 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	F. 200 millicuries
G. Americium 241	G. Sealed source Amersham/ Searle Model No. AMC.24	G. 14 millicuries
H. Any byproduct material listed in Section 31.11(a) of 10 CFR 31	H. Prepackaged kits	H. 3.0 millicuries of each byproduct material authorized in Subitem 6.H.
I. Carbon-14		I. 3.0 millicuries

9. Authorized Use

A. Any diagnostic procedure listed in Groups I and II of Schedule A, Section 35.100 of 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.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number 34-13317-02

Docket or Reference number 030-07576

Amendment No. 14

9. Authorized Use (Continued)

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. Blood flow studies. Pulmonary function studies.

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

H. and I. To be used for in-vitro studies.

CONDITIONS

10. Licensed material shall be used only at the licensee's facilities located at 380 Summit Avenue, Steubenville, Ohio.

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:

Heung J. Yoo, M.D.	Groups I, II and III Xenon-133 Americium-241
Thomas Havrilla, M.D.	Groups I, II and III Xenon-133 Iodine-131 for therapy Americium-241
Noel G. Dias, M.D.	Groups I, II, III, IV and VI Xenon-133 In vitro studies Carbon-13 Americium-241
Robert M. Levin, M.D.	Groups II and III Iodine-131 for diagnosis of thyroid function Xenon-133
James M. Hughes, M.D.	Group VI
Gerald R. Medwick, D.O.	Group VI

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number 34-13317-02

Docket or Reference number 030-07576

Amendment No. 14

Phillip Wadyko, M.D.	Groups I, II and III Xenon-133 Americium-241 In vitro studies
Joseph P. Concannon, M.D.	Groups I, II, III, IV, V and VI Xenon-133 Americium-241 Carbon-14 In vitro studies
Carlos Borzutsky, M.D.	Groups I, II and III Xenon-133 In vitro studies Americium-241 Iodine-131 as iodide for treatment of hyperthyroidism and cardiac dysfunction
Louis James Jacques, M.D.	Groups I, II and III Xenon-133 In vitro studies Americium-241 Iodine-131 as iodide for treatment of hyperthyroidism, cardiac dysfunction and thyroid carcinoma

12. 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.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number
34-13317-02

Docket or Reference number
030-07576

Amendment No. 14

13 A. (1) The source(s) specified in Item(s) 7.G. shall be tested for leakage and/or contamination at intervals not to exceed 6 months. 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.

(2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.

B. Any source in storage and not being used need not be tested. When the source is removed from storage for use or transfer to another persons, 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 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 III, 799 Roosevelt Road, Glen Ellyn, Illinois 60137, ATTN: Chief, Nuclear Materials Safety and Safeguards Branch. 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. The licensee is authorized to collect leak test samples for analysis by Health Physics Services, Inc. or tests for leakage and/or contamination shall be performed by persons specifically licensed by the Commission or an Agreement State to perform such services.

14. 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.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number 34-13317-02

Docket or Reference number 030-07576

Amendment No. 14

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; and

B. ALARA Program dated August 11, 1986.

For the U.S. Nuclear Regulatory Commission

Date March 27, 1987

By Patricia J. Priston
Materials Licensing Section, Region III

PATIENT_____

RADIATION THERAPY INSERVICE EDUCATION

A BRACHYTHERAPY RADIATION SAFETY INSERVICE WAS HELD. THE FOLLOWING OUTLINE WAS UTILIZED AS A GUIDE FOR THE DISCUSSION. IT IS UNDERSTOOD THAT THE TRANSFERENCE OF THIS INFORMATION SHALL BE COMPLETED DURING THE NURSING SHIFT CHANGE REPORT.

1. SIMULATED APPLICATOR DEMONSTRATION
2. NURSING CS-137 PROCEDURES
3. FORMS A THROUGH D
4. RADIATION SAFETY PRINCIPLES OF TIME, DISTANCE AND SHIELDING
5. UNITS OF RADIATION (REM, RAD, ROENTGEN, CURIE)
6. RADIATION WARNING SIGNS
7. TIME AND VISITATION RESTRICTIONS
8. EMERGENCY PROCEDURES AND CONTACTS
9. RESPONSIBILITY OF NURSING STAFF TO REPORT UNSAFE PRACTICES
10. TYPICAL EXPOSURES ASSOCIATED WITH A TYPICAL BRACHYTHERAPY
11. QUESTIONS AND ANSWERS

NAME	DATE
----------	----------
----------	----------
----------	----------
----------	----------

OHIO VALLEY HOSPITAL
RADIATION ONCOLOGY
PACKAGE OPENING
RADIOACTIVE MATERIALS

1. VISUALLY INSPECT THE PACKAGES FOR ANY OBVIOUS DAMAGE.

2. OBTAIN CALIBRATED SURVEY METER AND CHECK THE SURFACE READINGS AND THE EXPOSURE READINGS AT ONE METER TO SEE IF THEY AGREE WITH THE EXPECTED FROM THE T.I.

3. OPEN THE BOX TO DETERMINE IF THE CONTENTS AGREE WITH THE INVENTORY LIST.

4. SINCE IR-192 SEEDS IS A SPECIAL FORM A LEAK TEST IS NOT NECESSARY.

5. LOG THE RESULTS IN THE LOG BOOK

6. IF ANY DEVIATIONS OCCUR FROM THE EXPECTED NOTIFY THE RADIATION SAFETY OFFICER

7. WHEN RETURNING THE RADIOACTIVE PACKAGES FOLLOW THE MANUFACTURES PROTOCOL.

OHIO VALLEY HOSPITAL
RADIATION ONCOLOGY
ORDERING, RECEIPT AND SHIPMENT OF
RADIOACTIVE MATERIALS

1. WHEN THE NEED FOR RADIOACTIVE MATERIALS ARISE THE PHYSICIAN AND THE PHYSICIST WILL DETERMINE WHAT IS TO BE ORDERED.

2. THE PHYSICIST WILL ORDER THE RADIOACTIVE MATERIAL FROM THE APPROPRIATE VENDER (ALPHA OMEGA OR BEST IND.)

3. DURING NORMAL WORKING HOURS THE RADIOACTIVE MATERIALS WILL BE DELIVERED TO THE LOADING DOCK WHERE IT WILL BE PLACED IN THE LOCKED CYLINDER ROOM.

4. UPON THE RECEIPT OF THE RADIOACTIVE MATERIALS THE STAFF OF THE LOADING DOCK WILL CALL THE RADIATION THERAPY DEPARTMENT.

5. UPON NOTIFICATION, THE PHYSICS STAFF WILL RETRIEVE AND SURVEY THE PACKAGE.

6. THE SURVEY WILL INCLUDE A PACKAGE SURVEY OF THE EXTERNAL SURFACE AND ONE METER DISTANCE AND A DETERMINATION OF THE CONTENTS TO DETERMINE IF IT AGREES WITH THE INTENDED CONTENTS THE RESULTS WILL BE RECORDED IN THE LOG BOOK.

7. IN THE UNLIKELY EVENT THAT THE RADIOACTIVE MATERIALS ARE NOT RECEIVED DURING NORMAL WORKING HOURS, THE SECURITY STAFF IS INSTRUCTED PER HOSPITAL POLICY TO PLACE THE PACKAGE IN THE LOCKED NUCLEAR MEDICINE HOT LAB.

8. UPON THE TERMINATION OF THE BRACHYTHERAPY PROCEDURE THE SOURCES WILL BE COUNTED AND PLACED IN THE SHIPPING CONTAINER AND MADE READY FOR SHIPMENT BY FOLLOWING THE INSTRUCTIONS OF THE VENDER.

OVH
Ohio Valley Hospital

RADIATION ONCOLOGY
RADIOACTIVE MATERIALS
ORDERING, RECEIPT AND SHIPPING LOG

PATIENT_____ _____

==========

ORDER DATE_____ PO#_____

ISOTOPE_____ RIBBONS_____ SEEDS/RIBBON_____ ACTIVITY/SEED_____

DATE TO BE DELIVERED_____

SIGNATURE_____DATE_____

==========

DATE RECEIVED_____ TOTAL ACTIVITY_____

RIBBONS_____ SEEDS/RIBBON_____ ACTIVITY/SEED MEASURED_____

RATIO_____

TI_____ SURFACE MAX_____ ACTIVITY/SEED STATED_____

CONTAINER NUMBER_____ SIGNATURE_____DATE_____

SURVEY METER_____ CAL DATE_____ BKG_____ CHK SOURCE_____INI____

==========

DATE SHIPPED_____

RIBBONS_____ SEEDS/RIBBON_____ TOTAL ACTIVITY_____

TI_____ SURFACE MAX_____ WI__ YII__ YIII__

CONTAINER NUMBER_____ SIGNATURE_____DATE_____

SURVEY METER_____ CAL DATE_____ BKG_____ CHK SOURCE_____INI____

==========
==========

NOTES:

BRACHYTHERAPY DOSIMETRY

INSERTED BY_____ REMOVED BY_____

DATE_____ TIME_____ DATE_____ TIME_____

TOTAL MG RA EQ_____ TOTAL HOURS_____

RADS/HR_____	RADS/HR_____	RADS/HR_____	RADS/HR_____
AT_____	AT_____	AT_____	AT_____
TOTAL DOSE	TOTAL DOSE	TOTAL DOSE	TOTAL DOSE
_____	_____	_____	_____

BRACHYTHERAPY PLAN RUN BY_____

BRACHYTHERAPY PLAN CHECKED BY_____

BRACHYTHERAPY PLAN APPROVED BY_____

THE WASHINGTON HOSPITAL CANCER CENTER

Form B

Receipt/shipment record

Radiation source therapy application

Important

This record must be permanently maintained !

Patient : _____ Room # _____

PRETREATMENT INVENTORY

Drawer	#1	#2	#3	#4	
Number of sources					
Color code of sources					
Ra-226 eq. mg					Total activity in Cs-137 safe.
Total activity per drawer					

Sources removed from the safe

#	activity / serial number
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____

Time _____ Cesium Curator

Date _____ _____

POST TREATMENT INVENTORY

Time _____ Cesium Curator

Date _____ _____

Sources returned to the safe

#	activity / serial number
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____

Drawer	#1	#2	#3	#4	
Number of sources					
Color code of sources					
Ra-226 eq. mg					Total activity
Total activity per drawer					

in Cs-137 safe.

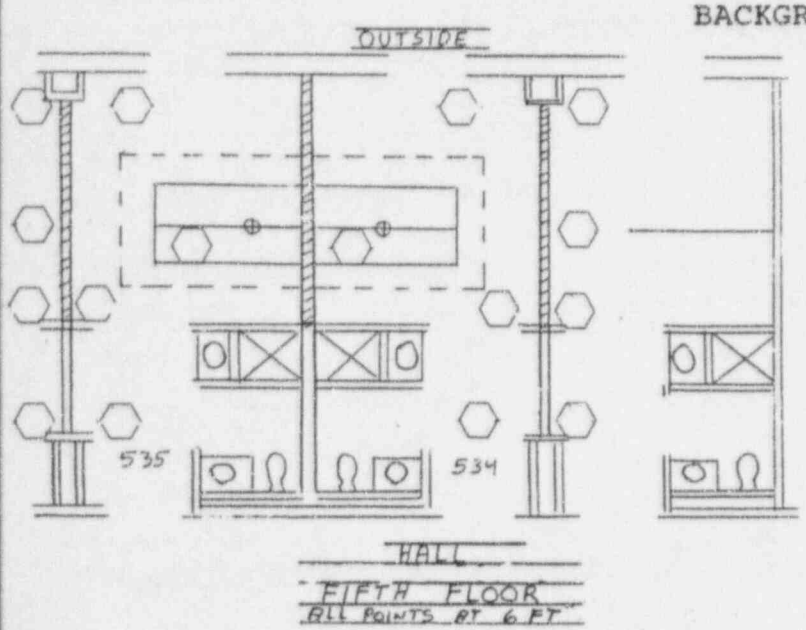
Comments :

1. All sources are accounted for _____ (Yes / No)
2. Final survey results on patients _____ (mR / hr)
3. Background radiation level _____ (mR / hr)
4. Final survey of patient's room _____ (mR / hr)
5. Charge nurse contacted _____ (Name)
6. Have room/nursing restrictions been lifted ? _____ (Yes / No)

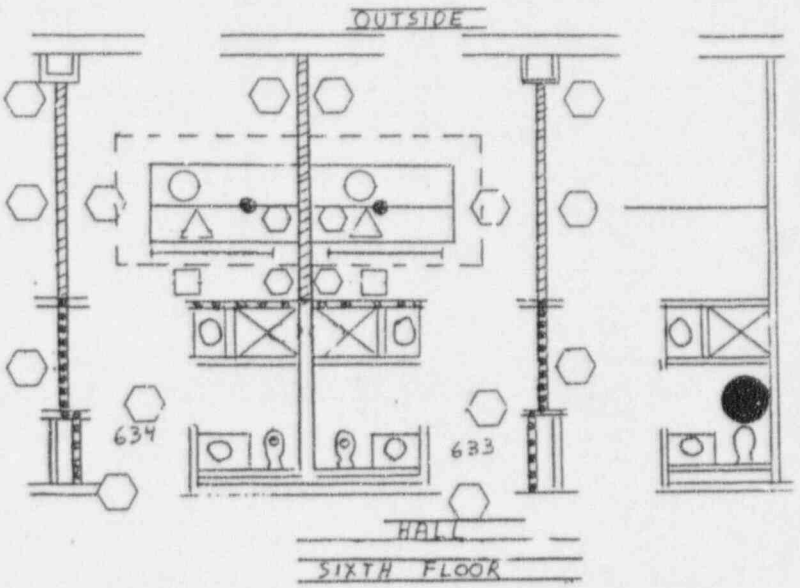
FORM B
AREA SURVEY

DATE_____
ROOM_____
PATIENT_____
ISOTOPE_____
APPLICATOR_____
ACTIVITY_____
SURVEYOR_____

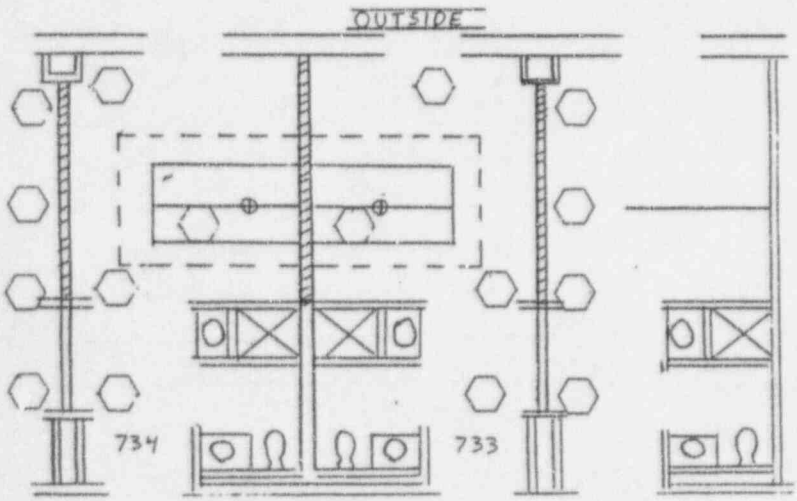
METER_____
CALIBRATION/DATE_____
CHECK/SOURCE_____
BACKGROUND_____



FIFTH FLOOR
ALL POINTS AT 6 FT



SIXTH FLOOR



SEVENTH FLOOR
ALL POINTS ON FLOOR

AREA MAG RDG = ⬡ ALL READINGS IN MR/HR

READING AT 1 M = ◯ BEDSIDE UNSHIELDED = △ BEDSIDE SHIELDED = □

THE WASHINGTON HOSPITAL
CANCER CENTER

MEDICAL ONCOLOGY 223-3365
RADIATION THERAPY 223-3788

Section 13.1

Policy 58

SUBJECT: Brachytherapy Quality Management Program

1) Prior to the administration of any brachytherapy device, a written directive will be issued by the ordering authorized user and placed in the nursing chart, as well as the brachytherapy physics book.

2) Prior to the administration of any brachytherapy device, two independent methods shall be used to determine the identity of the patient.

   A. A photo identification shall be obtained at the time of examination prior to the day of administration.

   B. On the day of administration the patient will be asked their identity and the patient's identity will be compared to the previous identity photo.

3) Following the administration of the brachytherapy device, radiographs which are required to verify position and to perform computations shall be obtained.

4) Following the dose computations, the brachytherapy plan shall be checked by a second person for correctness. If due to the emergent nature of the brachytherapy procedure it is not possible to second check the plan, the second check shall be completed within two working days.

5) Following the second physics check of the brachytherapy plan, the plan shall be reviewed by the physician and be approved prior to the completion of the brachytherapy procedure.

6) Following the administration of the active sources and following their removal, the physician shall indicate such in the Hospital chart.

7) Before implementing the brachytherapy computer plan for clinical use, acceptance testing of the computer is performed by the physics staff. The computer generated dosimetry is checked against several manually calculated plans. Each computer program is assessed for its applicability and validity.

8) On a yearly basis the Brachytherapy Quality Management Program shall be reviewed for its validity.

THE WASHINGTON HOSPITAL 155 WILSON AVENUE WASHINGTON, PA 15301

9) Nursing procedures shall be established which include, but are not limited to:

   A. Loading Procedures
   B. Room Surveying Procedures
   C. Personal Monitoring
   D. Safety Procedures

10) The Nursing Guidelines shall indicate where questions can be answered and advice obtained.

Reviewed: 10/1991

Revised:

THE WASHINGTON HOSPITAL
QUALITY MANAGEMENT FORM
RADIATION ONCOLOGY

PATIENT NAME:_____ DATE OF IMPLANT:_____

MEDICAL RECORD NUMBER:_____

IMPLANT DEVICE (PROPOSED)

RTD NUMBER:_____

CYL	FLETCHER SUITE	FREE HAND
SIZE_____		
	TANDEM	RIBBONS_____
	SOURCES_____	
SOURCES_____		SEEDS_____
	OVOID	PLANES_____
	SOURCES_____	

DOSE REQUIRED_____ ISOTOPE_____

DOSE RATE DESIRED_____

PHYSICIAN_____

BRACHYTHERAPY SOURCE LOADING

CYL	FLETCHER SUITE		FREE HAND
	R	L	
SOURCE 1_____	_____		RIBBONS_____
SOURCE 2_____	_____	_____	SEEDS_____
SOURCE 3_____	_____		PLANES_____
SOURCE 4_____	_____		

LOADED BY_____ VERIFIED BY_____

INSERTED BY_____ VERIFIED BY_____

BRACHYTHERAPY DOSIMETERY

INSERTED BY_____ REMOVED BY_____

DATE_____ TIME_____ DATE_____ TIME_____

TOTAL MG RA EQ_____ TOTAL HOURS_____

RADS/HR_____ RADS/HR_____ RADS/HR_____ RADS/HR_____

AT_____ AT_____ AT_____ AT_____

TOTAL DOSE TOTAL DOSE TOTAL DOSE TOTAL DOSE

_____ _____ _____ _____

BRACHYTHERAPY PLAN RUN BY_____

BRACHYTHERAPY PLAN CHECKED BY_____

BRACHYTHERAPY PLAN APPROVED BY_____AND COMPLETE_____

ID#1_____

ID#2_____

FILM DATE_____

3M QA_____

EXHIBIT 3

SUPPLEMENT B

SUPPLEMENT — U. S. NUCLEAR REGULATORY COMMISSION

PRECEPTOR STATEMENT

Supplement B must be completed by the applicant physician's preceptor. If more than one preceptor is necessary to document experience, obtain a separate statement from each.

1. PROPOSED PHYSICIAN USER'S NAME AND ADDRESS

FULL NAME

CONRAD S. REVAK, M.D.

STREET ADDRESS

[redacted]

KEY TO COLUMN C

PERSONAL PARTICIPATION SHOULD CONSIST OF:

1. Supervised examination of patients to determine the suitability for radioisotope diagnosis and/or treatment and recommendation for prescribed dosage.
2. Collaboration in dose calibration and actual administration of dose to the patient including calculation of the radiation dose, related measurements and plotting of data.
3. Adequate period of training to enable physician to manage radioactive patients and follow patients through diagnosis and/or course of treatment.

CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
	Thyroid scan		
	Thyroid uptake		
	Lung perfusion scan		
	Xenon ventilation study		
	Aerosol ventilation scan		
	Renal flow scan		
	Brain scan		
	Liver/spleen scan		
	Bone scan		
	Gastroesophageal study		
	LeVeen shunt study		
	Cystogram		
	Decryocystogram		
	Cardiac perfusion scan.		
	Cardiac stress ventriculogram		
	Cardiac rest ventriculogram		
	Gallium scan		

EXHIBIT 3 (Continued)

PROPOSED PHYSICIAN USER
CONRAD S. REVAK, M.D.

PRECEPTOR STATEMENT (Continued)

2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN (Continued)

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheet.) D
P-32 (Sodium)	TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA, AND BONE METASTASES		
P-32 (Colloid)	INTRACAVITARY TREATMENT		
I-131	TREATMENT OF THYROID CARCINOMA	4	
	TREATMENT OF HYPERTHYROIDISM	32	
Au-198	INTRACAVITARY TREATMENT		
Co-60 or Cs-137	INTERSTITIAL TREATMENT		
	INTRACAVITARY TREATMENT		
I-125 or I-103	INTERSTITIAL TREATMENT		
Co-60 or Cs-137	TELETHERAPY TREATMENT		
Sr-90	TREATMENT OF EYE DISEASE		
	RADIOPHARMACEUTICAL PREPARATION		
Mo-99/ Tc-99m	GENERATOR		
Sn-113/ In-113m	GENERATOR		
Tc-99m	REAGENT KITS		
Other SR89		13	

3. DATES AND TOTAL NUMBER OF HOURS RECEIVED IN CLINICAL RADIOISOTOPE TRAINING

LOCATION	DATES	CLOCK HOURS OF EXPERIENCE
OHIO VALLEY HOSPITAL ONE ROSS PARK STEUBENVILLE, OHIO 43952	1/1/90 TO 5/26/95	1,600

4. THE TRAINING AND EXPERIENCE INDICATED ABOVE WAS OBTAINED UNDER THE SUPERVISION OF:

a. NAME OF SUPERVISOR
RONALD I. VEATCH, M.D.

b. NAME OF INSTITUTION
OHIO VALLEY HOSPITAL

c. MAILING ADDRESS
ONE ROSS PARK

d. CITY
STEUBENVILLE OH 43952

e. MATERIALS LICENSE NUMBER(S)
34-13317-02

f. PRECEPTOR'S SIGNATURE
R Veatch MD

g. PRECEPTOR'S NAME (Please type or print)
R. VEATCH M.D.

h. DATE
7-19-95

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. Wonderly, 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

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
MEDICAL SPECIALTIES

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

Harold B. 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,
the American Society for Therapeutic Radiology and Oncology,
and the Association of University Radiologists
Hereby certifies that

Frank Peter Ottino, 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 tenth day of December, 1990
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

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
MEDICAL SPECIALTIES

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, 1934
Thereby demonstrating to the satisfaction of the Board
that he is qualified to practice the specialty of

Therapeutic Radiology

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

AMERICAN BOARD

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,
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, M.D.
President

William Jennelle M.D.
Secretary-Treasurer

M. Paul Capp. M.D.
Executive Director

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
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, 1978
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

Sidney W. Niland

C. Allen Good

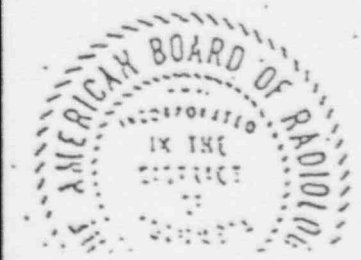
The American Board of Radiology

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

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

Therapeutic Radiology



NRC FORM 374
(10-89)

U.S. NUCLEAR REGULATORY COMMISSION

MATERIALS LICENSE

Amendment No. 22

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	In accordance with letter dated September 10, 1993 3. License number 34-13317-02 is amended in its entirety to read as follows:
2. One Ross Park Steubenville, OH 43952	4. Expiration date February 28, 1997
	5. Docket or Reference No. 030-07576

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 (excluding Xenon-133)	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 (f)	D. Any brachytherapy sources identified in 10 CFR 35.400 (f) limited to explanation and disposal	D. As needed
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. As needed
G. Carbon-14	G. Any	G. 3 millicuries

COPY

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number
34-13317-02

Docket or Reference number
030-07576

Amendment No. 22

9. Authorized Use:

A. Medical use described in 10 CFR 35.100.

B. Medical use described in 10 CFR 35.200 (excluding xenon-133).

C. Medical use described in 10 CFR 35.300.

D. Medical use described in 10 CFR 35.400 (f) limited to explanation and disposal.

E. In vitro studies.

F. Shielding in a linear accelerator.

G. In-vitro studies.

CONDITIONS

10. Location of Use: One Ross Park, Steubenville, Ohio.

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

12. Authorized Users:

A. Joseph P. Concannon, M.D., for material in 10 CFR 35.100, 35.200 (excluding xenon-133), 35.300, 31.11 and Subitem 6.G.

B. Ronald I. Veatch, M.D., for material in 10 CFR 35.100, 35.200 (excluding xenon-133), 35.300 and 31.11.

C. David Squincquero, M.D., for material in 10 CFR 35.100, 35.200 (excluding xenon-133) and 31.11.

D. Alan Easton, M.D., for material in 10 CFR 35.100, 35.200 (excluding xenon-133), 31.11 and iodine-131 for treatment of hyperthyroidism and cardiac dysfunction.

E. Conrad S. Revak, M.D., for material in 10 CFR 35.100, 35.200 (excluding xenon-133) and 31.11.

F. Marshall S. Carlin, D.O., for material in 10 CFR 35.100, 35.200 (excluding xenon-133), 35.300 and 31.11.

G. Beatriz L. Catral, M.D., for material in 10 CFR 35.100, 35.200 (excluding xenon-133), 35.300 and 31.11.

H. Gerald R. Medwick, D.O., for material in 10 CFR 35.400 (f) limited to explanation and disposal.

COPY

I. Mark Trombetta, M.D., for material in 10 CFR 35.400 (f) limited to explanation and disposal.

13. Pursuant to Title 10, Chapter 1, Code of Federal Regulations, Part 40, "Domestic Licensing of Source Material," the licensee is authorized to possess, use, transfer, and import up to 999 kilograms of depleted uranium contained as shielding material in the molybdenum-99/technetium-99m generators authorized by this license.

14. The licensee shall maintain records of information important to safe and effective decommissioning at the address in Condition 10. per the provisions of 10 CFR 30.35(g) until this license is terminated by the Commission.

15. The licensee is authorized to transport licensed material only in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

16. This license is based on the licensee's statements and representations listed below:

A. Application dated November 26, 1991; and

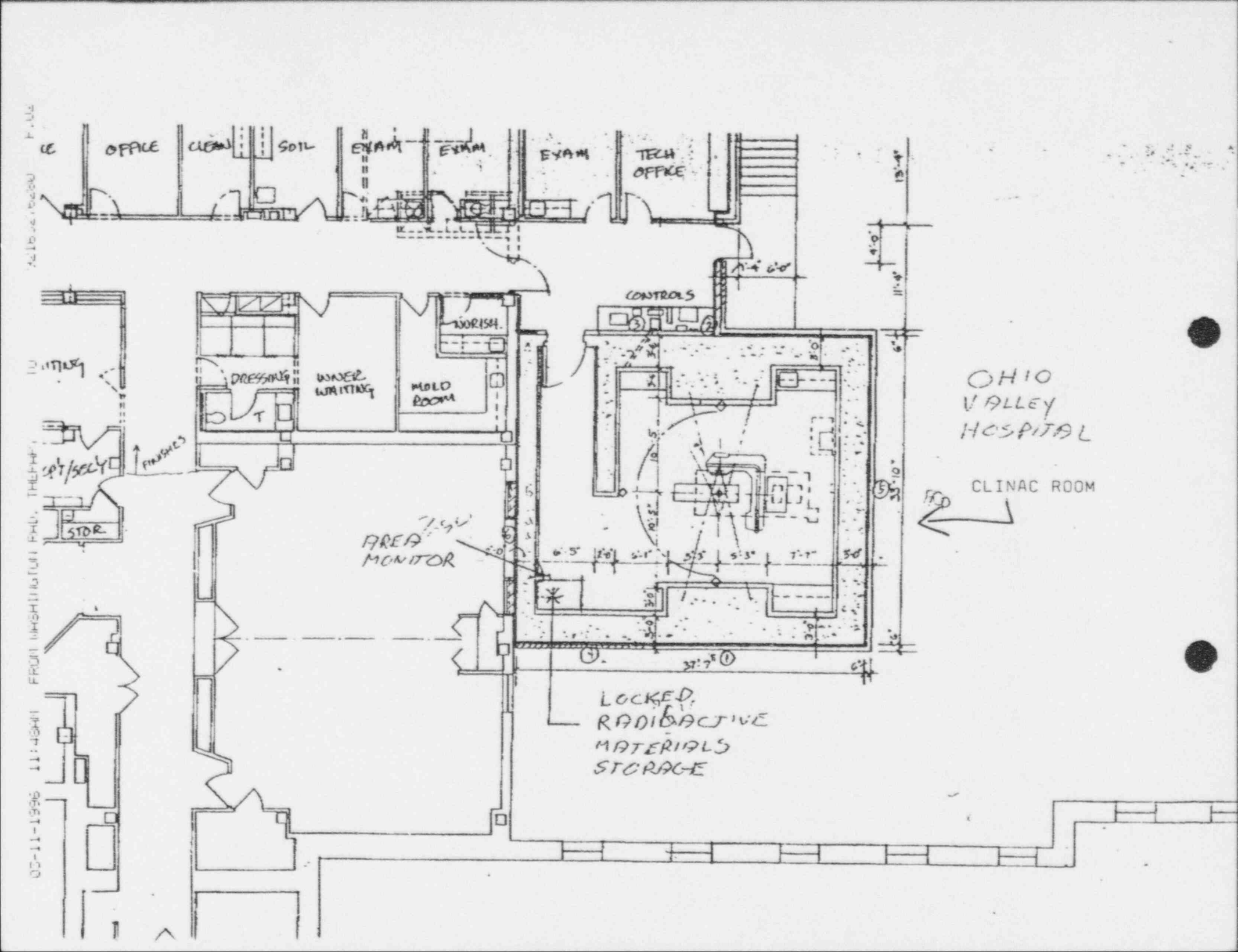
B. Letters dated January 31, 1992, September 9, 1993 and September 10, 1993.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date SEP 16 1993

By Robert D. Gattnella
Materials Licensing Section, Region III

COPY


OFFICE
CLEAN
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CONTROLS
DRESSING
WAITING
MOLD ROOM
STOR
FINISHES
AREA MONITOR
OHIO VALLEY HOSPITAL
CLINAC ROOM
LOCKED RADIOACTIVE MATERIALS STORAGE

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		Section
NURSING DEPARTMENT GUIDELINES		

NURSING GUIDELINES FOR PATIENTS RECEIVING RADIOACTIVE ISOTOPE BRACHYTHERAPY

SECTION I: GENERAL INFORMATION

INTRODUCTION: The use of radioactive isotopes, such as Cs-137 is highly regulated by the U.S. Nuclear Regulatory Commission (NRC). As part of the authorization granted to Ohio Valley Hospital by the NRC for the use of radioactive isotopes comes the responsibility to provide a safe environment for all of the institution's patients, visitors, and caregivers. The use of Cs-137 and other isotopes is wide-spread in the field of radiation therapy and as a result, radiation therapy practices have evolved to an extent that exposures to the aforementioned groups of individuals can be maintained at low levels. Through training of designated nursing personnel, and adherence to approved radiation safety procedure, Ohio Valley Hospital will keep the exposure from radiation as low as reasonably achievable (ALARA). Ohio Valley Hospital's ALARA commitment is an assurance that radiation exposures will be kept below the NRC radiation exposure limits.

RESPONSIBILITIES: While being knowledgeable and efficient in radiation safety and nursing procedures, the nursing staff is primarily responsible for the direct care needs of the patient. I addition, the nursing staff shall seek advice from the radiation oncologist, Medical Physics, and the Radiation Therapy staff shoul questions arise.

HEALTH CARE RESPONSIBILITIES: Since the patient with Cs-137 or other radioactive isotope is a source of radiation exposure, the patient is typically restricted to bed. The metal applicator whic is inserted into their body cavity, limits the movements that they are permitted to make. Also, the patient may feel isolated by virtue of their radiation treatment. Thus, the nursing staff must balance efficient use of time at the bedside to avoid unnecessary exposure with maintenance of the patient's physical and mental wel being.

RADIATION SAFETY TECHNIQUES: The techniques of radiation saf include: time, distance and shielding.

TIME: Exposure is directly proportional to time. If you can reduce the time it takes to perform a procedure while at a radiotherapy patient's bedside by 1/2, then the exposure which would have been received is also reduced by 1/2. Planning ahea is critical. By mentally reviewing the care to be completed, necessary steps to be followed, and all supplies needed, so tha bedside patient care can be performed in the least (i.e. most time efficient) amount of time, the radiation exposure received will be proportionately reduced.

DISTANCE: Distance is a key radiation safety technique when dealing with brachytherapies. The distance rule explains that when doubling one's distance from a small dimensioned radiation source, the rate of radiation exposure is reduced to 25% of the original. What makes distance protection so effective in radioactive isotope brachytherapies is that one can remain at t bedside to meet patient care needs and still maximize the dista from the radiation source, thereby effectively reducing potenti radiation exposure.

As an example, when the Cs-137 radioactive source is inser into the patient's pelvic region, bedside readings of radiation exposure at the pelvic level are much higher than readings alon the head of the bed. Similarly, the exposure level at ten (10) feet from the bed may be reduced by as much as 95%. Readings o radiation exposure are performed by the radiation physics staff each patient receiving brachytherapy. This allows them to advi the nurses as to positioning which affords them the most and le protection. Positioning is then determined by the patient care activity to be performed. If the nurse is performing direct ca she must be closer to the patient (at the bedside) than if she talking with the patient (should be positioned at greater dista from patient).

SHIELDING: Shielding Cs-137 radiation requires a very bulky, heavy lead shield to gain substantial radiation exposure reductions. In order to keep radiation exposures ALARA (As Low Reasonably Achievable), Ohio Valley Hospital has acquired le bedside shields. These shields are designed to transmit approximately 7% of the incident radiation field. The shields positioned to shield bedside caregivers from mid-thigh through chest thereby shielding reproductive organs and other major org systems. Nursing staff should always position themselves behind these shields when bedside care is being given.

RADIATION SAFETY IN PRACTICE: Below outlines the theoretical sequence of events when Cesium 137 is inserted into a body cavit to provide radiation therapy.

The Radiation Therapy Department has determined that designated inpatient caregivers will wear a radiation monitor wh is processed as required. Designated caregivers will be certain that the radiation monitor is labelled correctly with th name. Radiation monitors are to be worn between the neck and wa on the anterior surface of the body or clothing which remains cl to the body. Badges are not to be exchanged or shared. In addition to the one month radiation monitor, there will be an integrating dosimeter which will be worn when in the brachythera room. Prior to entering the patient's room, the initial reading from the integrating dosimeter will be recorded on Form D. Upon leaving the patient's room, the final reading from the integrati dosimeter will also be recorded on Form D. Badges and monitors issued to verify that current procedures are adequate for keepin radiation exposure at safe levels. When the integrating dosimet is not being used, it will be stored at the entry to the patient room.

Once the patient has been fitted with an applicator and situated in the bed, the Cs-137 sources are inserted (after load in the inpatient room. The Radiation Therapy Department will th perform the initial radiation survey. These surveys determine t inroom and adjoining areas' radiation exposure levels. These measurements enable the Radiation Therapy Staff to set guideline for the nursing staff to minimize their exposure during radioact isotope (i.e. Cs-137, IR-192) radiotherapy. The guidelines will include information concerning best and worst positions to assum while in the room of a patient with a radioactive implant and ti limitations for staff and visitors.

The room's entrance door as well as the patient's chart wil be prominently marked with a "Caution Radiation/Radioactive Materials" sign. Any adjoining area which must be vacated will also be labeled with an appropriate Radiation Warning sign. The completed Form A "Summary Instructions for Patients Treated With Radioactive Sources" and Section II "Care and Management of Patients Receiving Radioactive Isotope Therapy" will be placed o the patient's chart and at the entrance to the patient room.

The room will also be equipped with a portable lead contain and long forceps to be used in the unlikely event that a source applicator became dislodged. In such an event, the nurse who is present will grasp the source while using the long forceps and place the source into the portable lead container noting time of dislodgement on Form A.....*NEVER TOUCH A SOURCE and/or LOADED APPLICATOR WITH YOUR HANDS.

Always keep source at an extended arm's length (distance protection) and once secured in the portable lead container call the physician emergency contact numbers immediately. The contac numbers are listed on Form A.

Involved Nursing Staff must carefully review Form A and "Nursing Guidelines for Patients Receiving Radioactive Isotope Brachytherapy: Sections I and II" prior to caring for the patie and document the completion of such review on the "Whole Body Radiation Monitor Log Sheet for Nursing Personnel"(FORM D).

The room must be supplied with a linen hamper. The linen o an implant patient, if changed, must be collected and saved unti checked by the RSO/designee to prevent the inadvertant loss of a dislodged radioactive source(s) through the hospital's laundry.

Prior to brachytherapy, an onsite-nursing inservice will be conducted in which all forms and precautions will be revieved an questions will be answered. During the course of brachytherapy, the portable lead container with forceps, linen hamper, warning labels and completed forms are maintained in proper position. Also, during the course of the therapy, the radiation safety rul (time, distance, and shielding) shall be practiced and radiation monitors must be worn.

Once the therapy has been completed, the radioactive source will be removed from the patient by the Radiation Oncology Staff All room restrictions are to be maintained until the Nurse Manag Assistant Nurse Manager, or charge nurse receives a call directl from the Radiation Physics Staff permitting the Brachytherapy ro to be returned to normal hospital routines. This procedure is imposed so that accountability of all radioactive sources has be achieved before reopening the room for normal use.

Once radiation restrictions have been lifted, the physics staff will remove all warning signs and collect the appropriate radiation monitors. Linen may be sent to the laundry. All radiation monitors will be processed every three months and subsequent results will be maintained and available for review i the Radiation Therapy Department.

In conclusion, when dealing with the patient during radioactive isotope therapy, it must be remembered that a patient with feelings and needs is the primary focus of attention. Radiation safety procedures and techniques, if followed, allow one to deal with this patient in a knowledgable fashion so that patient care can be delivered with the confidence that exposures to all caregivers will be minimized to levels which are essentially risk free.

SECTION II: MANAGEMENT AND CARE

1. Patients scheduled for radioactive implants may be admitted for this therapy. When brachytherapy is first scheduled, the Radiation Oncology Nurse will notify admissions and confirm that the patient will be admitted to OVH. The Radiation Oncology nurse will also notify the Nurse Manager, Assistant Nurse Manager, or charge nurse of the planned admission.

2. The Radiation Oncology Nurse will be responsible to have the applicator(s) sterilized on the day preceding the insertion. After removal, the applicators will be cleaned by the nursing staff and returned to the Radiation Oncology nurse

3. On the day of the insertion, the mobile brachytherapy shields must be moved from the patient's room. The adjoining patient rooms must also be vacated.

4. The Radiation Therapy Staff will prepare sources by removing the prescribed sources from the radioisotope safe and placin them into the appropriate sleeve/applicator in the prescribe order. This procedure is to be performed by two individuals The first individual, Cesium Curator, is to obtain the sourc from the safe, observe the source's serial number and call this serial number out to the Cesium Curator Assistant. Thi second individual, Cesium Curator Assistant, will verify the source strength by serial number by referencing the followir list of serial numbers.

10 mg.	15 mg.	20 mg.	25 mg.
1.	1.	1.	1.
2.	2.	2.	2.
3.	3.	3.	
4.	4.	4.	

One by one, each source shall be extracted from the safe, observed for serial number, verified by reference to the above table, loaded into the prescribed applicator sleeve ir the prescribed order and documented on Form B.

REMEMBER: Whole body film badge and ring badge must be wor when handling the Cesium sources. All source manipulation shall be performed using long forceps/tongs. While handlir sources always strive to take advantage of shielding thus v preparing the sources use the L-Block to shield your body.

5. Complete policies, procedures, and sample forms can be four in the Radioactive Isotope Section of the Oncology Nursing Policy/Procedure Manual.

6. Radiation monitors will be issued as follows:

   a. Ring badge to physician, physics staff, oncology nurse, and curator.
   b. Whole body badges to appropriate nursing staff, radiation oncologist, physics staff, curator, and oncology nurse.
   c. The integrating dosimeter will be maintained outside the patient's room where it will be used in accordance with the instructions "The Use of the Integrating Dosimeter" and Form D.

7. When the physician is ready to initiate the therapy, the prepared/shielded radioactive isotope sources and a pair of long tongs will be obtained and delivered to the insertion area by the Radiation Oncology staff. The following items should also be brought to the patient's room:

   a. packet of forms, instructions, and warning labels
   b. functional ionization meter having a current calibration sticker
   c. integrating dosimeter
   d. meter stick or metric tape measure
   e. tape for posting of signs and delineation of safe area.

8. Once the radioactive sources have been inserted and the bedside shields are in position, the patient area survey shall be performed by the radiation physics staff. Results of this survey will be recorded on Form B entitled "Receipt/Shipment Record Radiation Source Therapy Application". Refer to PATIENT/AREA SURVEY PROCEDURE.

9. The radiation physics staff will complete Form A and place it on the patient's chart and at the entrance to the patien room. "Nursing Guidelines for Patients Receiving Radioacti Isotope Brachytherapy, Sections I and II" will also be plac on the patient's chart.
   room.

10. The radiation physics staff will post radiation warning sign on the chart, the door of the patient room, and any evacuate area. Dosimeters, dosimeter instructions, and log sheets wi be supplied by the physics staff and posted at the entrance the patient room.

11. The unit staff will obtain a linen hamper to be kept in the room of the patient with the radioactive implant.

12. Radiation physics staff will record all notes on Form B unde Comments and use Form C entitled "Radiation Therapy Source Usage Record" as a checklist to ensure that essential duties have been completed.

13. Radiation physics staff will then conduct an onsite nursing instruction session. The following will be reviewed:

    a. radiation safety concepts - time, distance, shielding
    b. proper use of radiation exposure monitors and log sheet
    c. description of sources and applicator; how the properly positioned applicator looks and any markings on the patient indicating proper position of the applicator
    d. description of removal of applicator
    e. emergency procedures and contact numbers
    f. emphasis that removal of warning labels is initiated only by direct order from the radiation physics staff.

14. All nursing caregivers for this patient must observe following guidelines:

    a. always review Form A located on patient's chart and entrance to room for special restrictions before caring for patient
    b. call the Radiation Therapy Department or Radiation Oncologist if you ever have any questions about the care of the patient
    c. caregivers should spend only the minimum necessary time near a brachytherapy patient for routine nursing care
    d. when a nurse receives an assignment to a patient with brachytherapy, she/he continues to wear the film badge. The badge is worn only by the nurse to whom it is issued and shall not be exchanged between nurses. Additionally, an integrating dosimeter is worn while in the patient room.

e. NEVER touch sources, capsules, needles, or container(s) holding radioactive sources. If a source becomes dislodged, use long forceps to return the source preferably to the shielded container while holding it at arm's length. IMMEDIATELY contact the Radiation Therapy Department (see emergency phone numbers on Form A) and note time/date of dislodgement on Form A.

f. while the radioactive source is in place, the bed bath will be omitted.

g. perineal care is not given during gynecologic treatment. Unless ordered to the contrary, the perineal pad may be changed when necessary

h. surgical dressings and bandages used to cover the area of source insertion may be changed only by the attending physician or radiation oncologist. NEVER DISCARD these until directed by the Radiation Physics staff. Such dressing should be kept in a basin in the patient room until checked by a member of the radiation physics staff.

i. unless specifically ordered, no special precautions are needed for sputum, urine, vomitus, stools, dishes, instruments, or utensils

j. these patients must stay in bed unless orders to the contrary are written

k. visitors will be limited to those over eighteen (18) years of age, unless other instructions are noted on Form A. Visitors should sit behind the line on the floor and remain no longer than times specified on Form A

l. no one who is pregnant shall be permitted in the room of a patient while brachytherapy sources are implanted in the patient. Ask female visitors if they are pregnant and do not permit them to visit if they are pregnant.

15. When brachytherapy is completed, call the Radiation Safety Officer or designee to request that the patient and room be surveyed (dismissal survey) to be sure that all radioactive sources have been removed if such a survey was not already conducted by the radiation physics staff. Refer to PATIENT DISMISSAL SURVEY PROCEDURE.

16. When returning sources to the Radioisotope safe, the radiation physics staff will perform a source accountability audit and document results on Form B.

17. If all sources are accounted for and all dismissal surveys are negative, the radiation physics staff will return to the inpatient unit and do the following:
    a. remove all warning labels
    b. retrieve integrating dosimeter and associated log (Form D)
    c. notify Nurse Manager/Assistant Nurse Manager, or charge nurse that all restrictions are lifted and normal hospital procedures can be resumed
    d. retrieve all forms and procedures.

18. Place all forms and log sheets into Brachytherapy File kept in the Radiation Therapy Department.

19. If a source or sources are missing at any time, **NOTIFY RADIATION PHYSICS IMMEDIATELY.**

20. Emergency Procedures should be instituted for the followinc
    a. if an inserted source becomes loose or separated from the patient,
        (1) follow orders/procedures as written
        (2) notify the radiation oncologist
        (3) if the source is totally dislodged from the patient, use long forceps to replace it into the lead lined container
    b. if the patient requires emergency medical treatment or surgery while the radioactive source is in place,
        (1) notify the radiation oncologist immediately for further instructions
    c. if the patient suffers a cardio-pulmonary arrest while the radioactive source is in place, and does not have a "no code" order, then
        (1) initiate CPR as usual
        (2) notify the radiation oncologist immediately for further instructions
    d. if the patient dies while the radioactive source is in place,
        (1) notify the radiation oncologist for further instruction
        (2) the body may never be moved until the radioactive sources are retrieved and radiation physics staff approves the move

21. For further guidance refer to National Council on Radiatior Protection Manual (#37, available through the Radiation Therapy Department).

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RADIOACTIVE ISOTOPE BRACHYTHERAPY PATIENT/AREA SURVEY PROCEDURE PART I

To assess any radiation hazards consequential to the interna use of radioactive materials (i.e. Cs-137 brachytherapy) for radiation therapy on patients radiation surveys are performed. These surveys are performed to measure exposure levels so as to show compliance with Nuclear Regulatory Commission regulations (1 CFR-20.105 and 20.201).

The radiation survey is performed as soon as practical following the administration of the radioactive material and is performed in and around the patient and the patient's room. The survey's purpose is to measure the exposure levels and evaluate potential exposure to hospital personnel, other patients, and members of the general public with respect to NRC regulatory lim

Exposure rates are measured using a currently calibrated portable survey meter which has successfully passed a battery ch and an operational check source test (see "Portable Survey Meter Operation Test" in Part III of this section). Such portable sur instruments can be either a GM/Scintillation detector or prefera an ionization survey meter. A "currently calibrated" portable survey meter is one which is labeled with a calibration certific sticker which is dated to within one (1) calendar year.

Radiation measurements shall be observed to record the high radiation level for each of the following points/areas:

1. Patient
   a) on contact
   b) one meter
   c) bedside
      i) shielded
      ii) unshielded
      iii) head of bed

Adjoining areas:
   a) Visitors' visitatio position
   b) Entrance doorway
   c) 6"-12" off wall surface for each adjoining area
   d) 7' height for area below Cs-137 patien

These measurements of exposure levels are to be recorded on the reverse side on Form B. The diagram on Form B is drawn to s the areas which need to be surveyed as described above. After exposure readings are taken, the resulting mR/hr values shall be

recorded in the spaces provided. The form is completed by signir and dating the survey form.

NRC regulations limit the permissible exposure levels to adjoining areas to 2 mR/hr and 100 mR per seven (7) consecutive days. In cases where the 2mR/hr or 100 mR/wk regulatory limit(s) would be exceeded, the following order of options should be considered.

a) More precise positioning of bedside shields.
   i) centering shield on source.
   ii) placing shield closer to source.

b) Adjusting the patient's bed height to enhance the advantage of the bedside shield(s).

c) Relocation of the patient's bed to maximize the distance from the radiation source to the troubled area, while maintaining radiation exposures to all other adjoining areas within regulatory limits.

d) Vacating, securing, and posting with radiation warning labels the adjoining area which exhibits elevated exposure levels.

e) Transferring the Cs-137 patient to a room better suited for the Cs-137 brachytherapy.

PART II

2 mR/hr vs 100 mR/wk vs Total Treatment Time

Because all brachytherapies have treatment times of greater than one (1) hour the absolute upper limit for adjoining area exposure levels is the 2 mR/hr regulatory limit.

2 mR/hr is the more restrictive regulatory limit for all brachytherapies with total treatment times of 50 hours or less; i.e. 2 mR/hr x 50 hrs = 100 mR which is the second regulatory limit. For all treatment times greater than 50 hours the limitir regulation becomes 100 mR/wk. Thus in order to determine whether the exposure to an adjoining area is legal (in compliance with th 100 mR/wk limit), one must calculate the maximum permissible mR/h value given the total treatment time.

Example: Prescribed treatment time = 72 hours.

Total exposure using 2 mR/hr limit = 72 hrs x 2 mR/hr = 144 mR/we
Calculation = 100 mR/wk - 72 hrs/wk = 1.39 mR/hr.

Thus in this case the maximum permissible exposure (MPE) to all of the adjoining areas would be 1.4 mR/hr.

The formula to be used to calculate the maximum permissible exposure (MPE) to the adjoining areas for treatment times greater than 50 hours is as follows:

eq. #1 $\frac{100}{\text{Rx Time (hr)}}$ = MPE (mR/hr)

PART III

Portable Survey Meter Operation Check/Test

To be able to place your trust in the ability of the portabl survey meter to accurately detect radiation, the following operational check/test is outlined:

Victoreen 470 A Survey Meter:

1. Turn switch to battery check to make sure the batteries are fresh. Fresh batteries are indicated by a deflection of the meter past the "bat check" threshold on the meter's scale. Weak batteries must be replaced with new batteries which are to be similarly checked.

2. Turn switch to most sensitive scale position, wait 15 seconds to allow for instrument warm-up, then position the meter's probe over the check source. Allow meter to deflect and stabilize, then take note of the reading. Compare this reading indicated on the calibration sticker. If a large discrepancy is evident, the survey meter is not functional and should be replaced with a functional survey meter.

PART IV

Calculations

It is necessary to perform calculations to determine the maximum minute per hour which nursing personnel and visitors are permitted in the patient's room. The following calculations are be performed and the results of these calculations are to be written out on Form A.

Nursing: limit = 2 mR/hr thus: $= \frac{2 \frac{mR}{hr}}{x \frac{mR}{hr} @ \text{ bedside}} \times \frac{60 \text{ min.}}{hr.}$

= Maximum minutes per hour

Example: Bedside reading = 30 $\frac{mR}{hr}$

$\frac{2}{30} \times 60 = 4$ min/hr.

Visitors: limit = 100 mR/total therapy determined @ visitors position.

Thus: $\frac{100 \text{ mR}}{(\text{Rx-hrs}) \quad \frac{mR}{hr} @ 6 \text{ ft}} \times 60 \frac{min}{hr}$ = maximum minutes per h

Example: Rx-hrs = 72 hours with 6 ft = 5 $\frac{mR}{hr}$

$\frac{100}{72 \times 5} \times 60 \frac{mR}{hr} = 16$ min/hr (always round down)

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RADIOACTIVE ISOTOPE BRACHYTHERAPY
PATIENT DISMISSAL SURVEY PROCEDURE

These surveys are necessary to insure compliance with appropriate state and/or federal regulations as well as to provid for the well being and safety of patients, employees and members the general public. These surveys are completed by the Radiatior Physic's Staff.

1. At the designated time, remove the sources from the patient and place them in the shielded container. Take container and sources back to the Cesium Safe/ Cesium Room in Radiation Therapy.

2. Turn on the portable GM/ionization survey meter and check that it is functional: a) turn switch to battery, check to make sure the batteries are fresh, b) turn switch to most sensitive scale position, wait to allow for instrument warm up, then position the meter's probe over the check source and observe the reading. Compare this reading to the exposure level indicated on the calibration sticker. If a large discrepancy is evident, the survey meter is not functional and should be replaced by a functional survey meter.

3. Measure / determine background radiation levels. (Readings should be 0.1 mR/hr or less.) On Form B, record this background exposure rate.

4. Survey over area on patient where sources had been located. Move probe slowly over patient, with the face of the probe being 15 cm. (6") or less from the patient's body surface.

5. If background levels are detected during the patient survey all the sources have been removed from the patient. If levels exceed (twice) background, check again to determine that all sources have been removed. If noticeable radiatio levels are found, a source has probably been left in the patient. If such a situation occurs, it is of utmost importance that the source(s) be removed <u>immediately</u>.

Next check the patient's room and linen to be sure that the sources have not fallen onto the floor; if any sources are present they will be easily detected by the deflection of the GM meter. If positive GM reading is detected, immediate action is to be taken: a) locate source(s) using the survey meter, b) handle source(s) using long forceps, c) place source(s) into shielded container for transport back to Cesium safe, d) resurvey patient's room and linen.

6. Record results of this follow up survey on Form B in the space provided; sign entry. Turn off meter and continue with source removal/accountability procedures.

OVH
Ohio Valley Hospital

FORM A

THIS SHOULD BE PRINTED UP ON YELLOW OR GOLD PAPER FOR HIGH VISIBILITY

CAUTION
RADIOACTIVE MATERI

SUMMARY INSTRUCTIONS FOR PATIENTS
TREATED WITH RADIOACTIVE SOURCES

Patient's Name: _____

Room Number: _____ Physician's Name: _____

Isotope: _____ Activity: _____

Date and Time of Administration: _____

Estimated Date Sources are to be removed: _____ Isotope: _____

Exposure Rates in mR/hr

Bedside (Shielded _____/Unshielded _____) 3 feet from bed _____

Head of Bed _____ Foot of Bed _____ 10 feet from bed _____

Visitors Position _____

Recommended limits of nursing care time _____ positioning _____

Recommended limits of visitor time _____ positioning _____

If inadvertent source dislodgement, date/time: _____

Follow checked items:

_____1. Safety Instructions/Procedures placed in patient chart
_____2. Wear personnel monitoring device
_____3. Patient must have a private room
_____4. Wear rubber gloves
_____5. Place laundry in linen hamper in room and save
_____6. Housekeeping may not enter the room
_____7. Patient may not have visitors
_____8. No pregnant visitors or nurses
_____9. No visitors under 18 years of age
_____10. A dismissal survey must be performed before patient is discharged
_____11. Other instructions _____

RSO/Designee Signature: _____

RSO Name: _____ Phone: _____ Beeper: _____

Radiation Oncologist Name: _____ Phone: _____ Beeper: _____

Physicist Name: _____ Phone: _____ Beeper: _____

Dosimetrist Name: _____ Phone: _____ Beeper: _____

Chief Technologist Name: _____ Phone: _____ Beeper: _____

FORM B
OHIO VALLEY HOSPITAL

Receipt/shipment record

Radiation source therapy application

Important

This record must be permanently maintained !

Patient : _____ Medical Record # _____ Room # _____

PRETREATMENT INVENTORY

Time _____

Date _____

Drawer	#1	#2	#3	#4	
Number of sources					
Color code of sources					
Ra-226 eq. mg					Total activity in Cs-137 safe.
Total activity per drawer					

Sources removed from the safe.

#	activity / serial number
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____

Time _____ Cesium Curator

Date _____ _____

POST TREATMENT INVENTORY

Time _____

Date _____

Time _____ Cesium Curator

Date _____ _____

Sources returned to the safe

#	activity / serial number
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____

Drawer	#1	#2	#3	#4	
Number of sources					
Color code of sources					
Ra-226 eq. mg					Total activity
Total activity per drawer					

in Cs-137 safe

Comments :

1. All sources are accounted for _____ (Yes / No)
2. Final survey results on patients _____ (mR / hr)
3. Background radiation level _____ (mR / hr)
4. Final survey of patient's room _____ (mR / hr)
5. Charge nurse contacted _____ (Name)
6. Have room/nursing restrictions been lifted ? _____ (Yes / No)

Certified by : _____ _____ Date

AREA SURVEY

FORM B

DATE / TIME _____

ROOM # _____

PATIENT _____

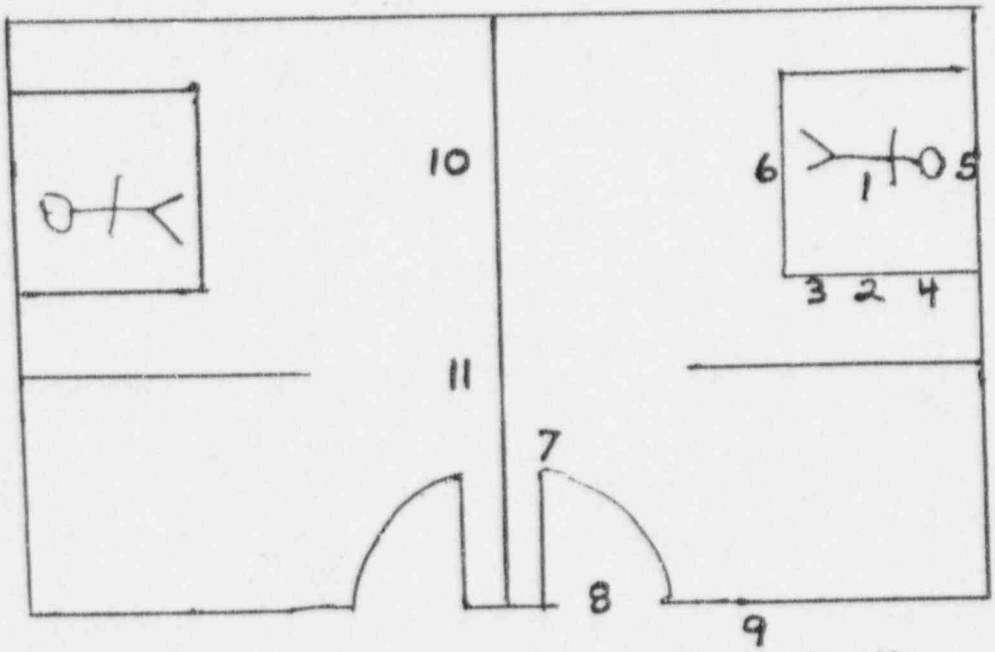
ISOTOPE _____

APPLICATOR _____

ACTIVITY (mg Eq.) _____

SURVEYOR _____

Outside Area (Above Grade)



Survey Results

Survey Meter _____

Calibration Date _____

Check Source reading _____

Background reading _____

#1	Patient On Contact	_____ mR/hr
#2	Patient @ 1 meter	_____ mR/hr
#3	Bed side unshielded	_____ mR/hr
#4	Bed side shielded	_____ mR/hr
#5	Head of bed	_____ mR/hr
#6	Foot of bed	_____ mR/hr
#7	Visitor's position	_____ mR/hr
#8	Entrance	_____ mR/hr
#9	Hall way	_____ mR/hr
#10	Adjoining patient's room	_____ mR/hr
#11	Adjoining patient's room	_____ mR/hr
#12	_____	_____ mR/hr
#13	_____	_____ mR/hr
#14	_____	_____ mR/hr

Comments :

OVH
Ohio Valley Hospital

Rad Techs/Physics
Check-off Procedure

FORM C

RADIATION THERAPY SOURCE USAGE RECORD

Patient _____ ID# _____ RM _____

Ordering Physician _____

Applicator(s) used _____ Sources _____

Date and time of insertion _____ AM/PM _____

	YES	SEE COMMENTS
. Patient assigned private room	( )	( )
. Exposure monitors issued to nursing personnel?	( )	( )
. Safety instruction given to nurse?	( )	( )
. Safety procedures placed in patient's chart?	( )	( )
. Caution sign placed on patient's chart?	( )	( )
. Caution signs placed on patient's room door?	( )	( )
. Nursing care rotated?	( )	( )
. Known pregnant nurses not attending patient?	( )	( )
. Pregnant visitors prohibited?	( )	( )
. Visitors under 18 prohibited?	( )	( )
. Safety survey performed and recorded?	( )	( )
. Safe line marked ?	( )	( )
. Limits of nursing care time posted?	( )	( )
. Removal notice posted in patient's chart prior to removal of all posted signs?	( )	( )
. All signs removed?	( )	( )
. Room surveyed and background radiation levels present?	( )	( )

Date/Time of Removal _____ AM/PM _____

Applicator _____ Sources _____

COMMENTS:

CERTIFIED BY: _____ Date _____

IMPORTANT: THIS RECORD MUST BE PERMANENTLY MAINTAINED

OVH Ohio Valley Hospital NURSING DEPARTMENT GUIDELINES	Date of Origin All dates of revision must be listed Revised:	Page Section

RADIOACTIVE ISOTOPE BRACHYTHERAPY
THE USE OF THE INTEGRATING DOSIMETER

As part of the Radiation Protection Procedures established for the Nursing Personnel caring for a Radiation Therapy Patient undergoing radioactive isotope administration, an integrating dosimeter must be worn. The dosimeter is to be worn while in the room. At other times it is placed at the room's entrance. The posted log (Form D) is to include the time spent in the room as well as the exposure received while in the room.

SUPPLEMENTARY INFORMATION:

To use the integrating dosimeter:

1. Turn switch to ON
2. Push and hold black button
3. Record numerical reading upon entry into room
4. Record numerical reading upon exit from room
5. Subtract initial reading (#3) from final reading (#4) and record difference.
6. Turn switch OFF
7. Leave at entry to brachytherapy room

OVH
Ohio Valley Hospital

Whole Body Radiation Monitor Log Sheet
For Nursing Personnel

FORM D

DATE: ____________________

PATIENT'S NAME: ____________________

ROOM: ____________________

Prior to entering the brachytherapy room, read "Nursing Guidelines for Patients Receiving Radioactive Isotope Brachytherapy" and document by signing under procedures read column.

Prior to entering the brachytherapy room, all nursing personnel must be wearing the film dosimeter which is issued every month. In addition, each person entering must monitor their radiation exposure by utilizing the integrating dosimeter which is made available to you.

Prior to entering the patient room, record your name, date and time, the numerical value from the integrating dosimeter in the initial reading column below. Upon leaving the room, record the numerical value from the integrating dosimeter in the final reading column and the time out. Then calculate and record your exposure.

DATE	NAME	TIME IN	TIME OUT	FINAL READING	INITIAL READING	EXPOSURE (FINAL-INITIAL)	PROCEDURES READ

NRC FORM 374
(10-89)

U.S. NUCLEAR REGULATORY COMMISSION

MATERIALS LICENSE

Amendment No. 22

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	In accordance with letter dated September 10, 1993 3. License number 34-13317-02 is amended in its entirety to read as follows:
2. One Ross Park Steubenville, OH 43952	4. Expiration date February 28, 1997
	5. Docket or Reference No. 030-07576

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 (excluding xenon-133)	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 (f)	D. Any brachytherapy sources identified in 10 CFR 35.400 (f) limited to explanation and disposal	D. As needed
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. As needed
G. Carbon-14	G. Any	G. 3 millicuries

COPY

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number
34-13317-02

Docket or Reference number
030-07576

Amendment No. 22

9. Authorized Use:

A. Medical use described in 10 CFR 35.100.

B. Medical use described in 10 CFR 35.200 (excluding xenon-133).

C. Medical use described in 10 CFR 35.300.

D. Medical use described in 10 CFR 35.400 (f) limited to explanation and disposal.

E. In vitro studies.

F. Shielding in a linear accelerator.

G. In-vitro studies.

CONDITIONS

10. Location of Use: One Ross Park, Steubenville, Ohio.

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

12. Authorized Users:

A. Joseph P. Concannon, M.D., for material in 10 CFR 35.100, 35.200 (excluding xenon-133), 35.300, 31.11, and Subitem 6.G.

B. Ronald I. Veatch, M.D., for material in 10 CFR 35.100, 35.200 (excluding xenon-133), 35.300 and 31.11.

C. David Squincquero, M.D., for material in 10 CFR 35.100, 35.200 (excluding xenon-133) and 31.11.

D. Alan Easton, M.D., for material in 10 CFR 35.100, 35.200 (excluding xenon-133), 31.11 and iodine-131 for treatment of hyperthyroidism and cardiac dysfunction.

E. Conrad S. Revak, M.D., for material in 10 CFR 35.100, 35.200 (excluding xenon-133) and 31.11.

F. Marshall S. Carlin, D.O., for material in 10 CFR 35.100, 35.200 (excluding xenon-133), 35.300 and 31.11.

G. Beatriz L. Catral, M.D., for material in 10 CFR 35.100, 35.200 (excluding xenon-133), 35.300 and 31.11.

H. Gerald R. Medwick, D.O., for material in 10 CFR 35.400 (f) limited to explanation and disposal.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License num 3- [illegible]3317-02

Docket or Reference number 030-07576

Amendment No. 22

1. Mark Trombetta, M.D., for material in 10 CFR 35.400 (f) limited to explanation and disposal.

13. Pursuant to Title 10, Chapter 1, Code of Federal Regulations, Part 40, "Domestic Licensing of Source Material," the licensee is authorized to possess, use, transfer, and import up to 999 kilograms of depleted uranium contained as shielding material in the molybdenum-99/technetium-99m generators authorized by this license.

14. The licensee shall maintain records of information important to safe and effective decommissioning at the address in Condition 10. per the provisions of 10 CFR 30.35(g) until this license is terminated by the Commission.

15. The licensee is authorized to transport licensed material only in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

16. This license is based on the licensee's statements and representations listed below:

A. Application dated November 26, 1991; and

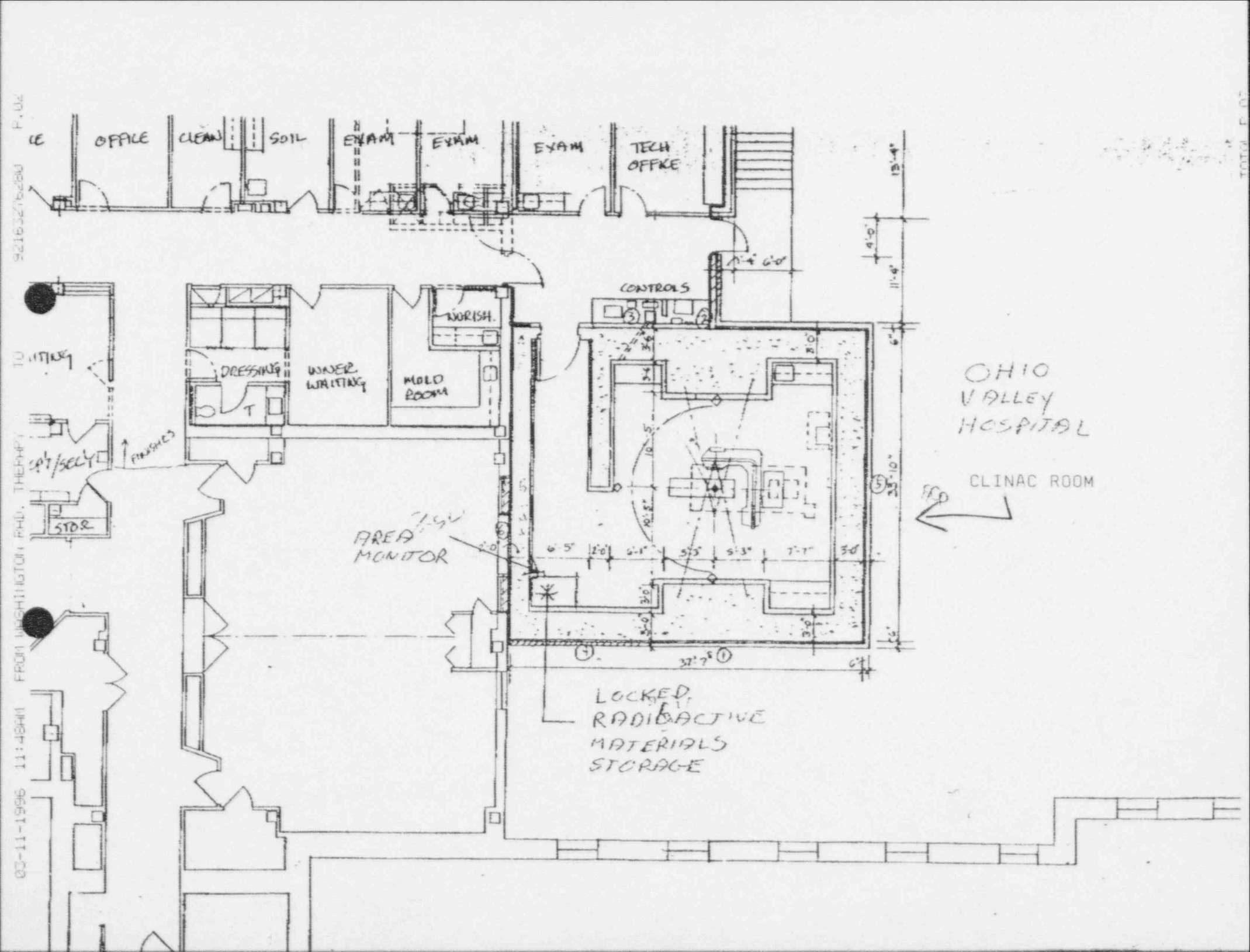
B. Letters dated January 31, 1992, September 9, 1993 and September 10, 1993.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date SEP 16 1993

By Robert D. Gattenby Jr.
Materials Licensing Section, Region III

COPY


OFFICE
CLEAN
SOIL
EXAM
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EXAM
TECH OFFICE
CONTROLS
NOURISH.
DRESSING
WAXER WAITING
MOLD ROOM
STOR
FINISHES
AREA MONITOR
LOCKED RADIOACTIVE MATERIALS STORAGE
OHIO VALLEY HOSPITAL
CLINAC ROOM
FOD

OHIO VALLEY HOSPITAL	Date of Origin All dates of revision must be listed Revised:	Page
NURSING DEPARTMENT GUIDELINES		Section

NURSING GUIDELINES FOR PATIENTS RECEIVING RADIOACTIVE ISOTOPE BRACHYTHERAPY

SECTION I: GENERAL INFORMATION

INTRODUCTION: The use of radioactive isotopes, such as Cs-137 is highly regulated by the U.S. Nuclear Regulatory Commission (NRC). As part of the authorization granted to Ohio Valley Hospital by the NRC for the use of radioactive isotopes comes the responsibility to provide a safe environment for all of the institution's patients, visitors, and caregivers. The use of Cs-137 and other isotopes is wide-spread in the field of radiation therapy and as a result, radiation therapy practices have evolved to an extent that exposures to the aforementioned groups of individuals can be maintained at low levels. Through training of designated nursing personnel, and adherence to approved radiation safety procedure, Ohio Valley Hospital will keep the exposure from radiation as low as reasonably achievable (ALARA). Ohio Valley Hospital's ALARA commitment is an assurance that radiation exposures will be kept below the NRC radiation exposure limits.

RESPONSIBILITIES: While being knowledgeable and efficient in radiation safety and nursing procedures, the nursing staff is primarily responsible for the direct care needs of the patient. I addition, the nursing staff shall seek advice from the radiation oncologist, Medical Physics, and the Radiation Therapy staff shoul questions arise.

HEALTH CARE RESPONSIBILITIES: Since the patient with Cs-137 or other radioactive isotope is a source of radiation exposure, the patient is typically restricted to bed. The metal applicator whic is inserted into their body cavity, limits the movements that they are permitted to make. Also, the patient may feel isolated by virtue of their radiation treatment. Thus, the nursing staff must balance efficient use of time at the bedside to avoid unnecessary exposure with maintenance of the patient's physical and mental wel being.

RADIATION SAFETY TECHNIQUES: The techniques of radiation saf include: time, distance and shielding.

TIME: Exposure is directly proportional to time. If you can reduce the time it takes to perform a procedure while at a radiotherapy patient's bedside by 1/2, then the exposure which would have been received is also reduced by 1/2. Planning ahea is critical. By mentally reviewing the care to be completed, necessary steps to be followed, and all supplies needed, so tha bedside patient care can be performed in the least (i.e. most time efficient) amount of time, the radiation exposure received will be proportionately reduced.

DISTANCE: Distance is a key radiation safety technique when dealing with brachytherapies. The distance rule explains that when doubling one's distance from a small dimensioned radiation source, the rate of radiation exposure is reduced to 25% of the original. What makes distance protection so effective in radioactive isotope brachytherapies is that one can remain at t bedside to meet patient care needs and still maximize the dista from the radiation source, thereby effectively reducing potenti radiation exposure.

As an example, when the Cs-137 radioactive source is inser into the patient's pelvic region, bedside readings of radiation exposure at the pelvic level are much higher than readings alon the head of the bed. Similarly, the exposure level at ten (10) feet from the bed may be reduced by as much as 95%. Readings o radiation exposure are performed by the radiation physics staff each patient receiving brachytherapy. This allows them to advi the nurses as to positioning which affords them the most and le protection. Positioning is then determined by the patient care activity to be performed. If the nurse is performing direct ca she must be closer to the patient (at the bedside) than if she talking with the patient (should be positioned at greater dista from patient).

SHIELDING: Shielding Cs-137 radiation requires a very bulky, heavy lead shield to gain substantial radiation exposure reductions. In order to keep radiation exposures ALARA (As Low Reasonably Achievable), Ohio Valley Hospital has acquired le bedside shields. These shields are designed to transmit approximately 7% of the incident radiation field. The shields positioned to shield bedside caregivers from mid-thigh through chest thereby shielding reproductive organs and other major org systems. Nursing staff should always position themselves behind these shields when bedside care is being given.

RADIATION SAFETY IN PRACTICE: Below outlines the theoretical sequence of events when Cesium 137 is inserted into a body cavit to provide radiation therapy.

The Radiation Therapy Department has determined that designated inpatient caregivers will wear a radiation monitor wh is processed as required. Designated caregivers will be certain that the radiation monitor is labelled correctly with th name. Radiation monitors are to be worn between the neck and wa on the anterior surface of the body or clothing which remains cl to the body. Badges are not to be exchanged or shared. In addition to the one month radiation monitor, there will be an integrating dosimeter which will be worn when in the brachythera room. Prior to entering the patient's room, the initial reading from the integrating dosimeter will be recorded on Form D. Upon leaving the patient's room, the final reading from the integrati dosimeter will also be recorded on Form D. Badges and monitors issued to verify that current procedures are adequate for keepin radiation exposure at safe levels. When the integrating dosimet is not being used, it will be stored at the entry to the patient room.

Once the patient has been fitted with an applicator and situated in the bed, the Cs-137 sources are inserted (after load in the inpatient room. The Radiation Therapy Department will th perform the initial radiation survey. These surveys determine t inroom and adjoining areas' radiation exposure levels. These measurements enable the Radiation Therapy Staff to set guideline for the nursing staff to minimize their exposure during radioact isotope (i.e. Cs-137, IR-192) radiotherapy. The guidelines will include information concerning best and worst positions to assum while in the room of a patient with a radioactive implant and ti limitations for staff and visitors.

The room's entrance door as well as the patient's chart wil be prominently marked with a "Caution Radiation/Radioactive Materials" sign. Any adjoining area which must be vacated will also be labeled with an appropriate Radiation Warning sign. The completed Form A "Summary Instructions for Patients Treated With Radioactive Sources" and Section II "Care and Management of Patients Receiving Radioactive Isotope Therapy" will be placed o the patient's chart and at the entrance to the patient room.

The room will also be equipped with a portable lead contain and long forceps to be used in the unlikely event that a source applicator became dislodged. In such an event, the nurse who is present will grasp the source while using the long forceps and place the source into the portable lead container noting time of dislodgement on Form A.....*NEVER TOUCH A SOURCE and/or LOADED APPLICATOR WITH YOUR HANDS.

Always keep source at an extended arm's length (distance protection) and once secured in the portable lead container call the physician emergency contact numbers immediately. The contac numbers are listed on Form A.

Involved Nursing Staff must carefully review Form A and "Nursing Guidelines for Patients Receiving Radioactive Isotope Brachytherapy: Sections I and II" prior to caring for the patie and document the completion of such review on the "Whole Body Radiation Monitor Log Sheet for Nursing Personnel"(FORM D).

The room must be supplied with a linen hamper. The linen o an implant patient, if changed, must be collected and saved unti checked by the RSO/designee to prevent the inadvertant loss of a dislodged radioactive source(s) through the hospital's laundry.

Prior to brachytherapy, an onsite-nursing inservice will be conducted in which all forms and precautions will be reviewed an questions will be answered. During the course of brachytherapy, the portable lead container with forceps, linen hamper, warning labels and completed forms are maintained in proper position. Also, during the course of the therapy, the radiation safety rul (time, distance, and shielding) shall be practiced and radiation monitors must be worn.

Once the therapy has been completed, the radioactive source will be removed from the patient by the Radiation Oncology Staff All room restrictions are to be maintained until the Nurse Manag Assistant Nurse Manager, or charge nurse receives a call directl from the Radiation Physics Staff permitting the Brachytherapy ro to be returned to normal hospital routines. This procedure is imposed so that accountability of all radioactive sources has be achieved before reopening the room for normal use.

Once radiation restrictions have been lifted, the physics staff will remove all warning signs and collect the appropriate radiation monitors. Linen may be sent to the laundry. All radiation monitors will be processed every three months and subsequent results will be maintained and available for review i the Radiation Therapy Department.

In conclusion, when dealing with the patient during radioactive isotope therapy, it must be remembered that a patient with feelings and needs is the primary focus of attention. Radiation safety procedures and techniques, if followed, allow one to deal with this patient in a knowledgable fashion so that patient care can be delivered with the confidence that exposures to all caregivers will be minimized to levels which are essentially risk free.

SECTION II: MANAGEMENT AND CARE

1. Patients scheduled for radioactive implants may be admitted for this therapy. When brachytherapy is first scheduled, the Radiation Oncology Nurse will notify admissions and confirm that the patient will be admitted to OVH. The Radiation Oncology nurse will also notify the Nurse Manager, Assistant Nurse Manager, or charge nurse of the planned admission.

2. The Radiation Oncology Nurse will be responsible to have the applicator(s) sterilized on the day preceding the insertion. After removal, the applicators will be cleaned by the nursing staff and returned to the Radiation Oncology nurse

3. On the day of the insertion, the mobile brachytherapy shields must be moved from the patient's room. The adjoining patient rooms must also be vacated.

4. The Radiation Therapy Staff will prepare sources by removing the prescribed sources from the radioisotope safe and placin them into the appropriate sleeve/applicator in the prescribe order. This procedure is to be performed by two individuals The first individual, Cesium Curator, is to obtain the sourc from the safe, observe the source's serial number and call this serial number out to the Cesium Curator Assistant. Thi second individual, Cesium Curator Assistant, will verify the source strength by serial number by referencing the followin list of serial numbers.

10 mg.	15 mg.	20 mg.	25 mg.
1.	1.	1.	1.
2.	2.	2.	2.
3.	3.	3.	
4.	4.	4.	

One by one, each source shall be extracted from the safe, observed for serial number, verified by reference to the above table, loaded into the prescribed applicator sleeve in the prescribed order and documented on Form B.

REMEMBER: Whole body film badge and ring badge must be wo when handling the Cesium sources. All source manipulation shall be performed using long forceps/tongs. While handlir sources always strive to take advantage of shielding thus preparing the sources use the L-Block to shield your body.

5. Complete policies, procedures, and sample forms can be fou in the Radioactive Isotope Section of the Oncology Nursing Policy/Procedure Manual.

6. Radiation monitors will be issued as follows:

   a. Ring badge to physician, physics staff, oncology nurse, and curator.
   b. Whole body badges to appropriate nursing staff, radiation oncologist, physics staff, curator, and oncology nurse.
   c. The integrating dosimeter will be maintained outside the patient's room where it will be used in accordance with the instructions "The Use of the Integrating Dosimeter" and Form D.

7. When the physician is ready to initiate the therapy, the prepared/shielded radioactive isotope sources and a pair of long tongs will be obtained and delivered to the insertion area by the Radiation Oncology staff. The following items should also be brought to the patient's room:

   a. packet of forms, instructions, and warning labels
   b. functional ionization meter having a current calibration sticker
   c. integrating dosimeter
   d. meter stick or metric tape measure
   e. tape for posting of signs and delineation of safe area.

8. Once the radioacti ources have been inserted and the bedside shields are position, the patient area survey shall be performed by the radiation physics staff. Results of this survey will be recorded on Form B entitled "Receipt/Shipment Record Radiation Source Therapy Application". Refer to PATIENT/AREA SURVEY PROCEDURE.

9. The radiation physics staff will complete Form A and place it on the patient's chart and at the entrance to the patien room. "Nursing Guidelines for Patients Receiving Radioacti Isotope Brachytherapy, Sections I and II" will also be plac on the patient's chart.
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   e. tape for posting of signs and delineation of safe area.

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9. The radiation physics staff will complete Form A and place it on the patient's chart and at the entrance to the patien room. "Nursing Guidelines for Patients Receiving Radioacti Isotope Brachytherapy, Sections I and II" will also be plac on the patient's chart.
   room.

10. The radiation physics staff will post radiation warning sign on the chart, the door of the patient room, and any evacuate area. Dosimeters, dosimeter instructions, and log sheets wi be supplied by the physics staff and posted at the entrance the patient room.

11. The unit staff will obtain a linen hamper to be kept in the room of the patient with the radioactive implant.

12. Radiation physics staff will record all notes on Form B unde Comments and use Form C entitled "Radiation Therapy Source Usage Record" as a checklist to ensure that essential duties have been completed.

13. Radiation physics staff will then conduct an onsite nursing instruction session. The following will be reviewed:

    a. radiation safety concepts - time, distance, shielding
    b. proper use of radiation exposure monitors and log sheet
    c. description of sources and applicator; how the properly positioned applicator looks and any markings on the patient indicating proper position of the applicator
    d. description of removal of applicator
    e. emergency procedures and contact numbers
    f. emphasis that removal of warning labels is initiated only by direct order from the radiation physics staff.

14. All nursing caregivers for this patient must observe following guidelines:

    a. always review Form A located on patient's chart and entrance to room for special restrictions before caring for patient
    b. call the Radiation Therapy Department or Radiation Oncologist if you ever have any questions about the care of the patient
    c. caregivers should spend only the minimum necessary time near a brachytherapy patient for routine nursing care
    d. when a nurse receives an assignment to a patient with brachytherapy, she/he continues to wear the film badge. The badge is worn only by the nurse to whom it is issued and shall not be exchanged between nurses. Additionally, an integrating dosimeter is worn while in the patient room.

e. NEVER touch sources, capsules, needles, or container(s) holding radioactive sources. If a source becomes dislodged, use long forceps to return the source preferably to the shielded container while holding it at arm's length. IMMEDIATELY contact the Radiation Therapy Department (see emergency phone numbers on Form A) and note time/date of dislodgement on Form A.

f. while the radioactive source is in place, the bed bath will be omitted.

g. perineal care is not given during gynecologic treatment. Unless ordered to the contrary, the perineal pad may be changed when necessary

h. surgical dressings and bandages used to cover the area of source insertion may be changed only by the attending physician or radiation oncologist. NEVER DISCARD these until directed by the Radiation Physics staff. Such dressing should be kept in a basin in the patient room until checked by a member of the radiation physics staff.

i. unless specifically ordered, no special precautions are needed for sputum, urine, vomitus, stools, dishes, instruments, or utensils

j. these patients must stay in bed unless orders to the contrary are written

k. visitors will be limited to those over eighteen (18) years of age, unless other instructions are noted on Form A. Visitors should sit behind the line on the floor and remain no longer than times specified on Form A

l. no one who is pregnant shall be permitted in the room of a patient while brachytherapy sources are implanted in the patient. Ask female visitors if they are pregnant and do not permit them to visit if they are pregnant.

15. When brachytherapy is completed, call the Radiation Safety Officer or designee to request that the patient and room be surveyed (dismissal survey) to be sure that all radioactive sources have been removed if such a survey was not already conducted by the radiation physics staff. Refer to PATIENT DISMISSAL SURVEY PROCEDURE.

16. When returning sources to the Radioisotope safe, the radiation physics staff will perform a source accountability audit and document results on Form B.

17. If all sources are accounted for and all dismissal surveys are negative, the radiation physics staff will return to the inpatient unit and do the following:
    a. remove all warning labels
    b. retrieve integrating dosimeter and associated log (Form D)
    c. notify Nurse Manager/Assistant Nurse Manager, or charge nurse that all restrictions are lifted and normal hospital procedures can be resumed
    d. retrieve all forms and procedures.

18. Place all forms and log sheets into Brachytherapy File kept in the Radiation Therapy Department.

19. If a source or sources are missing at any time, NOTIFY RADIATION PHYSICS IMMEDIATELY.

20. Emergency Procedures should be instituted for the following
    a. if an inserted source becomes loose or separated from the patient,
        (1) follow orders/procedures as written
        (2) notify the radiation oncologist
        (3) if the source is totally dislodged from the patient, use long forceps to replace it into the lead lined container
    b. if the patient requires emergency medical treatment or surgery while the radioactive source is in place,
        (1) notify the radiation oncologist immediately for further instructions
    c. if the patient suffers a cardio-pulmonary arrest while the radioactive source is in place, and does not have a "no code" order, then
        (1) initiate CPR as usual
        (2) notify the radiation oncologist immediately for further instructions
    d. if the patient dies while the radioactive source is in place,
        (1) notify the radiation oncologist for further instruction
        (2) the body may never be moved until the radioactive sources are retrieved and radiation physics staff approves the move

21. For further guidance refer to National Council on Radiation Protection Manual (#37, available through the Radiation Therapy Department).

NURSING DEPARTMENT GUIDELINES	Date of Origin All dates of revision must be listed Revised:	Page Section

RADIOACTIVE ISOTOPE BRACHYTHERAPY
PATIENT/AREA SURVEY PROCEDURE
PART I

To assess any radiation hazards consequential to the interna use of radioactive materials (i.e. Cs-137 brachytherapy) for radiation therapy on patients radiation surveys are performed. These surveys are performed to measure exposure levels so as to show compliance with Nuclear Regulatory Commission regulations (CFR-20.105 and 20.201).

The radiation survey is performed as soon as practical following the administration of the radioactive material and is performed in and around the patient and the patient's room. The survey's purpose is to measure the exposure levels and evaluate potential exposure to hospital personnel, other patients, and members of the general public with respect to NRC regulatory lim

Exposure rates are measured using a currently calibrated portable survey meter which has successfully passed a battery ch and an operational check source test (see "Portable Survey Meter Operation Test" in Part III of this section). Such portable sur instruments can be either a GM/Scintillation detector or preferal an ionization survey meter. A "currently calibrated" portable survey meter is one which is labeled with a calibration certific sticker which is dated to within one (1) calendar year.

Radiation measurements shall be observed to record the high radiation level for each of the following points/areas:

1. Patient
   a) on contact
   b) one meter
   c) bedside
      i) shielded
      ii) unshielded
      iii) head of bed

Adjoining areas:
   a) Visitors' visitatio position
   b) Entrance doorway
   c) 6"-12" off wall surface for each adjoining area
   d) 7' height for area below Cs-137 patien

These measurements of exposure levels are to be recorded on the reverse side on Form B. The diagram on Form B is drawn to s the areas which need to be surveyed as described above. After exposure readings are taken, the resulting mR/hr values shall be

recorded in the spaces provided. The form is completed by signir and dating the survey form.

NRC regulations limit the permissible exposure levels to adjoining areas to 2 mR/hr and 100 mR per seven (7) consecutive days. In cases where the 2mR/hr or 100 mR/wk regulatory limit(s) would be exceeded, the following order of options should be considered.

a) More precise positioning of bedside shields.
   i) centering shield on source.
   ii) placing shield closer to source.

b) Adjusting the patient's bed height to enhance the advantage of the bedside shield(s).

c) Relocation of the patient's bed to maximize the distance from the radiation source to the troubled area, while maintaining radiation exposures to all other adjoining areas within regulatory limits.

d) Vacating, securing, and posting with radiation warning labels the adjoining area which exhibits elevated exposure levels.

e) Transferring the Cs-137 patient to a room better suited for the Cs-137 brachytherapy.

PART II

2 mR/hr vs 100 mR/wk vs Total Treatment Time

Because all brachytherapies have treatment times of greater than one (1) hour the absolute upper limit for adjoining area exposure levels is the 2 mR/hr regulatory limit.

2 mR/hr is the more restrictive regulatory limit for all brachytherapies with total treatment times of 50 hours or less; i.e. 2 mR/hr x 50 hrs = 100 mR which is the second regulatory limit. For all treatment times greater than 50 hours the limitir regulation becomes 100 mR/wk. Thus in order to determine whether the exposure to an adjoining area is legal (in compliance with th 100 mR/wk limit), one must calculate the maximum permissible mR/h value given the total treatment time.

Example: Prescribed treatment time = 72 hours.

Total exposure using 2 mR/hr limit = 72 hrs x 2 mR/hr = 144 mR/we
Calculation = 100 mR/wk - 72 hrs/wk = 1.39 mR/hr.

Thus in this case the maximum permissible exposure (MPE) to all of the adjoining areas would be 1.4 mR/hr.

The formula to be used to calculate the maximum permissible exposure (MPE) to the adjoining areas for treatment times greater than 50 hours is as follows:

eq. #1 $\frac{100}{\text{Rx Time (hr)}}$ = MPE (mR/hr)

PART III

Portable Survey Meter Operation Check/Test

To be able to place your trust in the ability of the portabl survey meter to accurately detect radiation, the following operational check/test is outlined:

Victoreen 470 A Survey Meter:

1. Turn switch to battery check to make sure the batteries are fresh. Fresh batteries are indicated by a deflection of the meter past the "bat check" threshold on the meter's scale. Weak batteries must be replaced with new batteries which are to be similarly checked.

2. Turn switch to most sensitive scale position, wait 15 seconds to allow for instrument warm-up, then position the meter's probe over the check source. Allow meter to deflect and stabilize, then take note of the reading. Compare this reading indicated on the calibration sticker. If a large discrepancy is evident, the survey meter is not functional and should be replaced with a functional survey meter.

PART IV

Calculations

It is necessary to perform calculations to determine the maximum minute per hour which nursing personnel and visitors are permitted in the patient's room. The following calculations are be performed and the results of these calculations are to be written out on Form A.

Nursing: limit = 2 mR/hr thus: $= \frac{2 \frac{mR}{hr}}{x \frac{mR}{hr} \text{ @ bedside}} \times \frac{60 \text{ min.}}{hr.}$

= Maximum minutes per hour

Example: Bedside reading = 30 $\frac{mR}{hr}$

$\frac{2}{30} \times 60 = 4$ min/hr.

Visitors: limit = 100 mR/total therapy determined @ visitors position.

Thus: $\frac{100 \text{ mR}}{(\text{Rx-hrs}) \ \frac{mR}{hr} \text{ @ 6 ft}} \times 60 \frac{min}{hr}$ = maximum minutes per h

Example: Rx-hrs = 72 hours with 6 ft = 5 $\frac{mR}{hr}$

$\frac{100}{72 \times 5} \times 60 \frac{mR}{hr} = 16$ min/hr (always round down)

Ohio Valley Hospital NURSING DEPARTMENT GUIDELINES	Date of Origin All dates of revision must be listed Revised:	Page Section

RADIOACTIVE ISOTOPE BRACHYTHERAPY
PATIENT DISMISSAL SURVEY PROCEDURE

These surveys are necessary to insure compliance with appropriate state and/or federal regulations as well as to provic for the well being and safety of patients, employees and members the general public. These surveys are completed by the Radiatior Physic's Staff.

1. At the designated time, remove the sources from the patient and place them in the shielded container. Take container and sources back to the Cesium Safe/ Cesium Room in Radiation Therapy.

2. Turn on the portable GM/ionization survey meter and check that it is functional: a) turn switch to battery, check to make sure the batteries are fresh, b) turn switch to most sensitive scale position, wait to allow for instrument warm up, then position the meter's probe over the check source and observe the reading. Compare this reading to the exposure level indicated on the calibration sticker. If a large discrepancy is evident, the survey meter is not functional and should be replaced by a functional survey meter.

3. Measure / determine background radiation levels. (Readings should be 0.1 mR/hr or less.) On Form B, record this background exposure rate.

4. Survey over area on patient where sources had been located. Move probe slowly over patient, with the face of the probe being 15 cm. (6") or less from the patient's body surface.

5. If background levels are detected during the patient survey all the sources have been removed from the patient. If levels exceed (twice) background, check again to determine that all sources have been removed. If noticeable radiatio levels are found, a source has probably been left in the patient. If such a situation occurs, it is of utmost importance that the source(s) be removed <u>immediately</u>.

Next check the patient's room and linen to be sure that the sources have not fallen onto the floor; if any sources are present they will be easily detected by the deflection of the GM meter. If positive GM reading is detected, immediate action is to be taken: a) locate source(s) using the survey meter, b) handle source(s) using long forceps, c) place source(s) into shielded container for transport back to Cesium safe, d) resurvey patient's room and linen.

6. Record results of this follow up survey on Form B in the space provided; sign entry. Turn off meter and continue with source removal/accountability procedures.

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Form H

THIS SHOULD BE PRINTED UP ON YELLOW OR GOLD PAPER FOR HIGH VISIBILITY

CAUTION
RADIOACTIVE MATERI

SUMMARY INSTRUCTIONS FOR PATIENTS
TREATED WITH RADIOACTIVE SOURCES

Patient's Name: _____

Room Number: _____ Physician's Name: _____

Isotope: _____ Activity: _____

Date and Time of Administration: _____

Estimated Date Sources are to be removed: _____ Isotope: _____

Exposure Rates in mR/hr

Bedside (Shielded _____/Unshielded _____) 3 feet from bed _____

Head of Bed _____ Foot of Bed _____ 10 feet from bed _____

Visitors Position _____

Recommended limits of nursing care time _____ positioning _____

Recommended limits of visitor time _____ positioning _____

If inadvertent source dislodgement, date/time: _____

Follow checked items:

_____1. Safety Instructions/Procedures placed in patient chart
_____2. Wear personnel monitoring device
_____3. Patient must have a private room
_____4. Wear rubber gloves
_____5. Place laundry in linen hamper in room and save
_____6. Housekeeping may not enter the room
_____7. Patient may not have visitors
_____8. No pregnant visitors or nurses
_____9. No visitors under 18 years of age
_____10. A dismissal survey must be performed before patient is discharged
_____11. Other instructions _____

RSO/Designee Signature: _____

RSO Name: _____ Phone: _____ Beeper: _____

Radiation Oncologist Name: _____ Phone: _____ Beeper: _____

Physicist Name: _____ Phone: _____ Beeper: _____

Dosimetrist Name: _____ Phone: _____ Beeper: _____

Chief Technologist Name: _____ Phone: _____ Beeper: _____

FORM B
OHIO VALLEY HOSPITAL

Receipt/shipment record

Radiation source therapy application

Important

This record must be permanently maintained !

Patient : _____ Medical Record # _____ Room # _____

PRETREATMENT INVENTORY

Time _____

Date _____

Drawer	#1	#2	#3	#4
Number of sources				
Color code of sources				
Ra-226 eq. mg				
Total activity per drawer				

Total activity in Cs-137 safe. _____

Time _____ Cesium Curator

Date _____ _____

Sources removed from the safe.

#	activity / serial number
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____

POST TREATMENT INVENTORY

Time _____

Date _____

Time _____ Cesium Curator

Date _____ _____

Sources returned to the safe

#	activity / serial number
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____

Drawer	#1	#2	#3	#4
Number of sources				
Color code of sources				
Ra-226 eq. mg				
Total activity per drawer				

Total activity in Cs-137 safe. _____

Comments :

1. All sources are accounted for _____ (Yes / No)
2. Final survey results on patients _____ (mR / hr)
3. Background radiation level _____ (mR / hr)
4. Final survey of patient's room _____ (mR / hr)
5. Charge nurse contacted _____ (Name)
6. Have room/nursing restrictions been lifted ? _____ (Yes / No)

Certified by : _____ Date

AREA SURVEY

FORM B

DATE / TIME _____

ROOM # _____

PATIENT _____

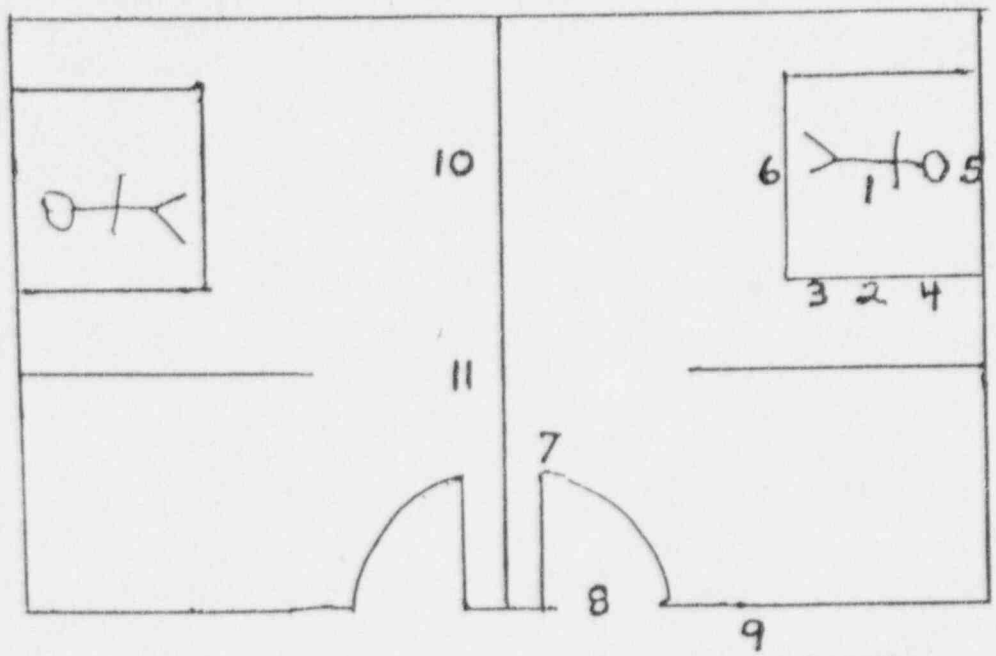
ISOTOPE _____

APPLICATOR _____

ACTIVITY (mg Eq.) _____

SURVEYOR _____

Outside Area (Above Grade)



Survey Results

Survey Meter _____

Calibration Date _____

Check Source reading _____

Background reading _____

*1	Patient On Contact	_____ mR/hr
*2	Patient @ 1 meter	_____ mR/hr
*3	Bed side unshielded	_____ mR/hr
*4	Bed side shielded	_____ mR/hr
*5	Head of bed	_____ mR/hr
*6	Foot of bed	_____ mR/hr
*7	Visitor's position	_____ mR/hr
*8	Entrance	_____ mR/hr
*9	Hall way	_____ mR/hr
*10	Adjoining patient's room	_____ mR/hr
*11	Adjoining patient's room	_____ mR/hr
*12	_____	_____ mR/hr
*13	_____	_____ mR/hr
*14	_____	_____ mR/hr

Comments :

OVH
Ohio Valley Hospital

Rad Techs/Physics
Check-off Procedure

FORM C

RADIATION THERAPY SOURCE USAGE RECORD

Patient _____ ID# _____ RM _____

Ordering Physician _____

Applicator(s) used _____ Source _____

Date and time of insertion _____ AM/PM _____

	YES	SEE COMMENTS
. Patient assigned private room	( )	( )
. Exposure monitors issued to nursing personnel?	( )	( )
. Safety instruction given to nurse?	( )	( )
. Safety procedures placed in patient's chart?	( )	( )
. Caution sign placed on patient's chart?	( )	( )
. Caution signs placed on patient's room door?	( )	( )
. Nursing care rotated?	( )	( )
. Known pregnant nurses not attending patient?	( )	( )
. Pregnant visitors prohibited?	( )	( )
. Visitors under 18 prohibited?	( )	( )
. Safety survey performed and recorded?	( )	( )
. Safe line marked ?	( )	( )
. Limits of nursing care time posted?	( )	( )
. Removal notice posted in patient's chart prior to removal of all posted signs?	( )	( )
. All signs removed?	( )	( )
. Room surveyed and background radiation levels present?	( )	( )

Date/Time of Removal _____ AM/PM _____

Applicator _____ Sources _____

COMMENTS:

CERTIFIED BY: _____ Date _____

IMPORTANT: THIS RECORD MUST BE PERMANENTLY MAINTAINED

OVH Ohio Valley Hospital	Date of Origin All dates of revision must be listed Revised:	Page Section
NURSING DEPARTMENT GUIDELINES		

RADIOACTIVE ISOTOPE BRACHYTHERAPY
THE USE OF THE INTEGRATING DOSIMETER

As part of the Radiation Protection Procedures established for the Nursing Personnel caring for a Radiation Therapy Patient undergoing radioactive isotope administration, an integrating dosimeter must be worn. The dosimeter is to be worn while in the room. At other times it is placed at the room's entrance. The posted log (Form D) is to include the time spent in the room as well as the exposure received while in the room.

SUPPLEMENTARY INFORMATION:

To use the integrating dosimeter:

1. Turn switch to ON
2. Push and hold black button
3. Record numerical reading upon entry into room
4. Record numerical reading upon exit from room
5. Subtract initial reading (#3) from final reading (#4) and record difference.
6. Turn switch OFF
7. Leave at entry to brachytherapy room

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Ohio Valley Hospital

Whole Body Radiation Monitor Log Sheet For Nursing Personnel

FORM D

DATE: ____________________

PATIENT'S NAME: ____________________

ROOM: ____________________

Prior to entering the brachytherapy room, read "Nursing Guidelines for Patients Receiving Radioactive Isotope Brachytherapy" and document by signing under procedures read column.

Prior to entering the brachytherapy room, all nursing personnel must be wearing the film dosimeter which is issued every month. In addition, each person entering must monitor their radiation exposure by utilizing the integrating dosimeter which is made available to you.

Prior to entering the patient room, record your name, date and time, the numerical value from the integrating dosimeter in the initial reading column below. Upon leaving the room, record the numerical value from the integrating dosimeter in the final reading column and the time out. Then calculate and record your exposure.

DATE	NAME	TIME IN	TIME OUT	FINAL READING	INITIAL READING	EXPOSURE (FINAL-INITIAL)	PROCEDURES READ

PATIENT_____

RADIATION THERAPY INSERVICE EDUCATION

A BRACHYTHERAPY RADIATION SAFETY INSERVICE WAS HELD. THE FOLLOWING OUTLINE WAS UTILIZED AS A GUIDE FOR THE DISCUSSION. IT IS UNDERSTOOC THAT THE TRANSFERENCE OF THIS INFORMATION SHALL BE COMPLETED DURING THE NURSING SHIFT CHANGE REPORT.

1. SIMULATED APPLICATOR DEMONSTRATION
2. NURSING CS-137 PROCEDURES
3. FORMS A THROUGH D
4. RADIATION SAFETY PRINCIPLES OF TIME, DISTANCE AND SHIELDING
5. UNITS OF RADIATION (REM, RAD, ROENTGEN, CURIE)
6. RADIATION WARNING SIGNS
7. TIME AND VISITATION RESTRICTIONS
8. EMERGENCY PROCEDURES AND CONTACTS
9. RESPONSIBILITY OF NURSING STAFF TO REPORT UNSAFE PRACTICES
10. TYPICAL EXPOSURES ASSOCIATED WITH A TYPICAL BRACHYTHERAPY
11. QUESTIONS AND ANSWERS

NAME	DATE
----------	----------
----------	----------
----------	----------
----------	----------

OHIO VALLEY HOSPITAL
RADIATION ONCOLOGY
PACKAGE OPENING
RADIOACTIVE MATERIALS

1. VISUALLY INSPECT THE PACKAGES FOR ANY OBVIOUS DAMAGE.

2. OBTAIN CALIBRATED SURVEY METER AND CHECK THE SURFACE READINGS AND THE EXPOSURE READINGS AT ONE METER TO SEE IF THEY AGREE WITH THE EXPECTED FROM THE T.I.

3. OPEN THE BOX TO DETERMINE IF THE CONTENTS AGREE WITH THE INVENTORY LIST.

4. SINCE IR-192 SEEDS IS A SPECIAL FORM A LEAK TEST IS NOT NECESSARY.

5. LOG THE RESULTS IN THE LOG BOOK

6. IF ANY DEVIATIONS OCCUR FROM THE EXPECTED NOTIFY THE RADIATION SAFETY OFFICER

7. WHEN RETURNING THE RADIOACTIVE PACKAGES FOLLOW THE MANUFACTURES PROTOCOL.

OHIO VALLEY HOSPITAL
RADIATION ONCOLOGY
ORDERING, RECEIPT AND SHIPMENT OF
RADIOACTIVE MATERIALS

1. WHEN THE NEED FOR RADIOACTIVE MATERIALS ARISE THE PHYSICIAN AND THE PHYSICIST WILL DETERMINE WHAT IS TO BE ORDERED.

2. THE PHYSICIST WILL ORDER THE RADIOACTIVE MATERIAL FROM THE APPROPRIATE VENDER (ALPHA OMEGA OR BEST IND.)

3. DURING NORMAL WORKING HOURS THE RADIOACTIVE MATERIALS WILL BE DELIVERED TO THE LOADING DOCK WHERE IT WILL BE PLACED IN THE LOCKED CYLINDER ROOM.

4. UPON THE RECEIPT OF THE RADIOACTIVE MATERIALS THE STAFF OF THE LOADING DOCK WILL CALL THE RADIATION THERAPY DEPARTMENT.

5. UPON NOTIFICATION, THE PHYSICS STAFF WILL RETRIEVE AND SURVEY THE PACKAGE.

6. THE SURVEY WILL INCLUDE A PACKAGE SURVEY OF THE EXTERNAL SURFACE AND ONE METER DISTANCE AND A DETERMINATION OF THE CONTENTS TO DETERMINE IF IT AGREES WITH THE INTENDED CONTENTS THE RESULTS WILL BE RECORDED IN THE LOG BOOK.

7. IN THE UNLIKELY EVENT THAT THE RADIOACTIVE MATERIALS ARE NOT RECEIVED DURING NORMAL WORKING HOURS, THE SECURITY STAFF IS INSTRUCTED PER HOSPITAL POLICY TO PLACE THE PACKAGE IN THE LOCKED NUCLEAR MEDICINE HOT LAB.

8. UPON THE TERMINATION OF THE BRACHYTHERAPY PROCEDURE THE SOURCES WILL BE COUNTED AND PLACED IN THE SHIPPING CONTAINER AND MADE READY FOR SHIPMENT BY FOLLOWING THE INSTRUCTIONS OF THE VENDER.

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Ohio Valley Hospital

RADIATION ONCOLOGY
RADIOACTIVE MATERIALS
ORDERING, RECEIPT AND SHIPPING LOG

PATIENT_____

==========

ORDER DATE_____ PO#_____

ISOTOPE_____ RIBBONS_____ SEEDS/RIBBON_____ ACTIVITY/SEED_____

DATE TO BE DELIVERED_____

SIGNATURE_____DATE_____

==========

DATE RECEIVED_____ TOTAL ACTIVITY_____

RIBBONS_____ SEEDS/RIBBON_____ ACTIVITY/SEED MEASURED_____

RATIO_____

TI_____ SURFACE MAX_____ ACTIVITY/SEED STATED_____

CONTAINER NUMBER_____ SIGNATURE_____DATE_____

SURVEY METER_____ CAL DATE_____ BKG_____ CHK SOURCE_____INI____

==========

DATE SHIPPED_____

RIBBONS_____ SEEDS/RIBBON_____ TOTAL ACTIVITY_____

TI_____ SURFACE MAX_____ WI__ YII__ YIII__

CONTAINER NUMBER_____ SIGNATURE_____DATE_____

SURVEY METER_____ CAL DATE_____ BKG_____ CHK SOURCE_____INI____

==========
==========

NOTES:

BRACHYTHERAPY DOSIMETERY

INSERTED BY_____ REMOVED BY_____

DATE_____ TIME_____ DATE_____ TIME_____

TOTAL MG RA EQ_____ TOTAL HOURS_____

RADS/HR_____ RADS/HR_____ RADS/HR_____ RADS/HR_____

AT_____ AT_____ AT_____ AT_____

TOTAL DOSE TOTAL DOSE TOTAL DOSE TOTAL DOSE

_____ _____ _____ _____

BRACHYTHERAPY PLAN RUN BY_____

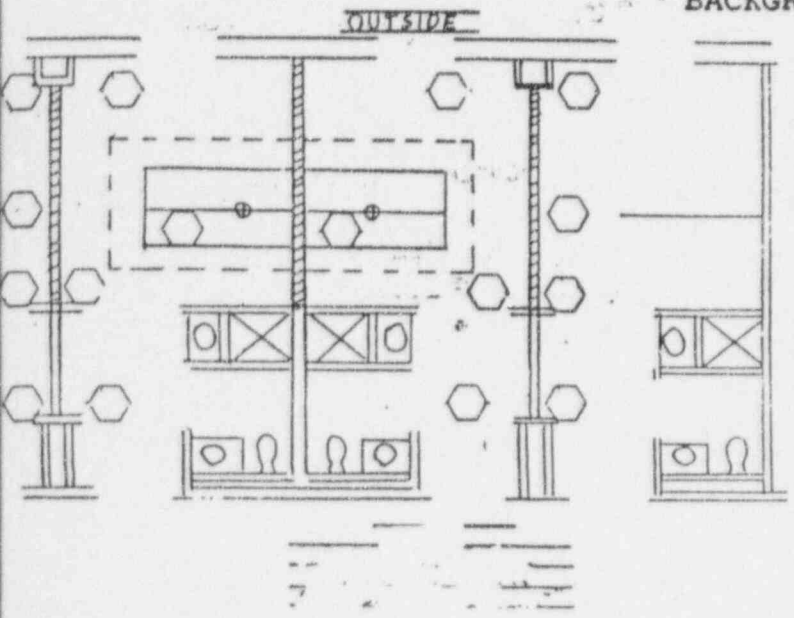
BRACHYTHERAPY PLAN CHECKED BY_____

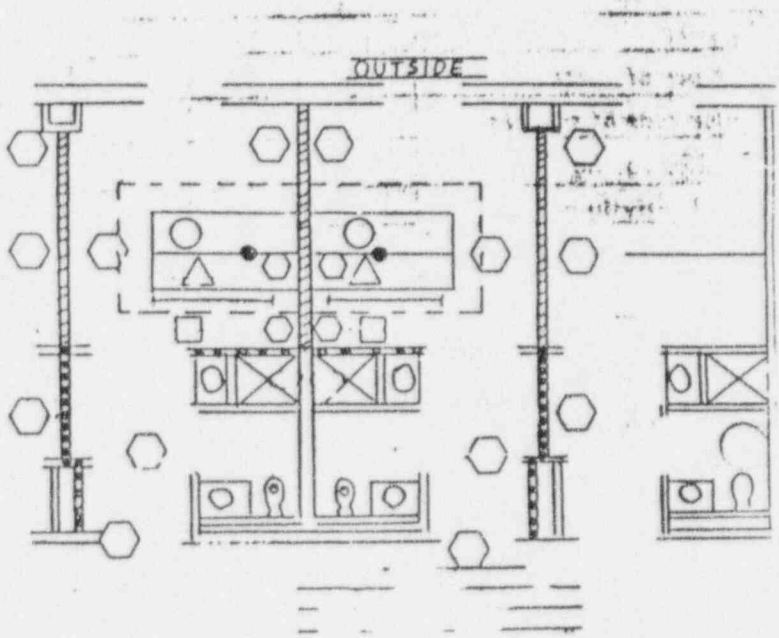
BRACHYTHERAPY PLAN APPROVED BY_____

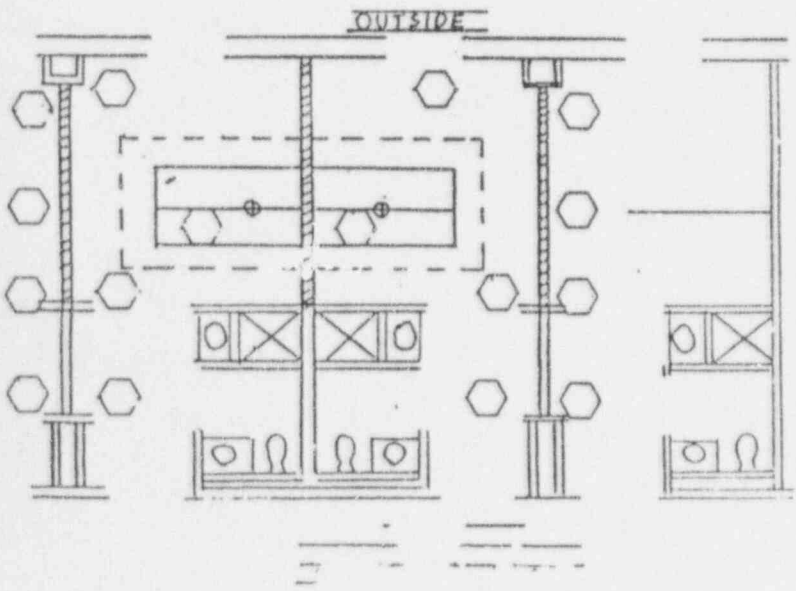
FORM B
AREA SURVEY

DATE_____
ROOM_____
PATIENT_____
ISOTOPE_____
APPLICATOR_____
ACTIVITY_____
SURVEYOR_____

METER_____
CALIBRATION/DATE_____
CHECK/SOURCE_____
BACKGROUND_____







AREA MAG RDG = ⬡ ALL READINGS IN MR/HR

READING AT 1 M = ◯ BEDSIDE UNSHIELDED = △ BEDSIDE SHIELDED = □

THE WASHINGTON HOSPITAL
CANCER CENTER

Form B

Receipt/shipment record

Radiation source therapy application

Important

This record must be permanently maintained !

Patient : _____ Room # _____

PRETREATMENT INVENTORY

Drawer	#1	#2	#3	#4
Number of sources				
Color code of sources				
Ra-226 eq. mg				
Total activity per drawer				

Total activity in Cs-137 safe. _____

Sources removed from the safe.

#	activity / serial number
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____

Time _____ Cesium Curator

Date _____ _____

POST TREATMENT INVENTORY

Time _____ Cesium Curator

Date _____ _____

Sources returned to the safe

#	activity / serial number
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____
#	_____ / _____

Drawer	#1	#2	#3	#4
Number of sources				
Color code of sources				
Ra-226 eq. mg				
Total activity per drawer				

Total activity in Cs-137 safe. _____

Comments :

1. All sources are accounted for _____ (Yes / No)
2. Final survey results on patients _____ (mR / hr)
3. Background radiation level _____ (mR / hr)
4. Final survey of patient's room _____ (mR / hr)
5. Charge nurse contacted _____ (Name)
6. Have room/nursing restrictions been lifted ? _____ (Yes / No)

BRACHYTHERAPY DOSIMETERY

INSERTED BY_____ REMOVED BY_____

DATE_____ TIME_____ DATE_____ TIME_____

TOTAL MG RA EQ_____ TOTAL HOURS_____

RADS/HR_____ RADS/HR_____ RADS/HR_____ RADS/HR_____

AT_____ AT_____ AT_____ AT_____

TOTAL DOSE TOTAL DOSE TOTAL DOSE TOTAL DOSE

_____ _____ _____ _____

BRACHYTHERAPY PLAN RUN BY_____

BRACHYTHERAPY PLAN CHECKED BY_____

BRACHYTHERAPY PLAN APPROVED BY_____AND COMPLETE_____

ID#1_____

ID#2_____

FILM DATE_____

3M QA_____

THE
QUALITY MANAGEMENT FORM
RADIATION ONCOLOGY

PATIENT NAME:_____ DATE OF IMPLANT:_____

MEDICAL RECORD NUMBER:_____

IMPLANT DEVICE (PROPOSED)

RTD NUMBER:_____

CYL	FLETCHER SUITE	FREE HAND
SIZE_____		
	TANDEM	RIBBONS_____
	SOURCES_____	
SOURCES_____		SEEDS_____
	OVOID	PLANES_____
	SOURCES_____	

DOSE REQUIRED_____ ISOTOPE_____

DOSE RATE DESIRED_____

PHYSICIAN_____

BRACHYTHERAPY SOURCE LOADING

CYL	FLETCHER SUITE			FREE HAND
	R		L	
SOURCE 1_____		_____		RIBBONS_____
SOURCE 2_____	____	_____	____	SEEDS_____
SOURCE 3_____		_____		PLANES_____
SOURCE 4_____		_____		

LOADED BY_____ VERIFIED BY_____

INSERTED BY_____ VERIFIED BY_____

THE WASHINGTON HOSPITAL
CANCER CENTER

MEDICAL ONCOLOGY 223-3365
RADIATION THERAPY 223-3788

Section 13.1

Policy 58

SUBJECT: Brachytherapy Quality Management Program

1) Prior to the administration of any brachytherapy device, a written directive will be issued by the ordering authorized user and placed in the nursing chart, as well as the brachytherapy physics book.

2) Prior to the administration of any brachytherapy device, two independent methods shall be used to determine the identity of the patient.

   A. A photo identification shall be obtained at the time of examination prior to the day of administration.

   B. On the day of administration the patient will be asked their identity and the patient's identity will be compared to the previous identity photo.

3) Following the administration of the brachytherapy device, radiographs which are required to verify position and to perform computations shall be obtained.

4) Following the dose computations, the brachytherapy plan shall be checked by a second person for correctness. If due to the emergent nature of the brachytherapy procedure it is not possible to second check the plan, the second check shall be completed within two working days.

5) Following the second physics check of the brachytherapy plan, the plan shall be reviewed by the physician and be approved prior to the completion of the brachytherapy procedure.

6) Following the administration of the active sources and following their removal, the physician shall indicate such in the Hospital chart.

7) Before implementing the brachytherapy computer plan for clinical use, acceptance testing of the computer is performed by the physics staff. The computer generated dosimetry is checked against several manually calculated plans. Each computer program is assessed for its applicability and validity.

8) On a yearly basis the Brachytherapy Quality Management Program shall be reviewed for its validity.

THE WASHINGTON HOSPITAL 155 WILSON AVENUE WASHINGTON, PA 15301

9) Nursing procedures shall be established which include, but are not limited to:

A. Loading Procedures
B. Room Surveying Procedures
C. Personal Monitoring
D. Safety Procedures

10) The Nursing Guidelines shall indicate where questions can be answered and advice obtained.

Reviewed:

Revised:

EXHIBIT 3

SUPPLEMENT B

SUPPLEMENT | U. S. NUCLEAR REGULATORY COMMISSION

PRECEPTOR STATEMENT

Supplement B must be completed by the applicant physician's preceptor. If more than one preceptor is necessary to document experience, obtain a separate statement from each.

1. PROPOSED PHYSICIAN USER'S NAME AND ADDRESS

FULL NAME

CONRAD S. REVAK, M.D.

STREET ADDRESS

[redacted]

[redacted] STATE [redacted] ZIP CODE

KEY TO COLUMN C

PERSONAL PARTICIPATION SHOULD CONSIST OF:

1. Supervised examination of patients to determine the suitability for radioisotope diagnosis and/or treatment and recommendation for prescribed dosage.
2. Collaboration in dose calibration and actual administration of dose to the patient including calculation of the radiation dose, related measurements and plotting of data.
3. Adequate period of training to enable physician to manage radioactive patients and follow patients through diagnosis and/or course of treatment.

2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheet.) D
	Thyroid scan		
	Thyroid uptake		
	Lung perfusion scan		
	Xenon ventilation study		
	Aerosol ventilation scan		
	Renal flow scan		
	Brain scan		
	Liver/spleen scan		
	Bone scan		
	Gastroesophageal study		
	LeVeen shunt study		
	Cystogram		
	Decryocystogram		
	Cardiac perfusion scan.		
	Cardiac stress ventriculogram		
	Cardiac rest ventriculogram		
	Gallium scan		

EXHIBIT 3 (Continued)

PROPOSED PHYSICIAN USER
CONRAD S. REVAK, M.D.

PRECEPTOR STATEMENT (Continued)

2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN (Continued)

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
P-32 (Sodium)	TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA, AND BONE METASTASES		
P-32 (Colloid)	INTRACAVITARY TREATMENT		
I-131	TREATMENT OF THYROID CARCINOMA	4	
	TREATMENT OF HYPERTHYROIDISM	32	
Au-198	INTRACAVITARY TREATMENT		
Co-60 or Cs-137	INTERSTITIAL TREATMENT		
	INTRACAVITARY TREATMENT		
I-125 or I-193	INTERSTITIAL TREATMENT		
Co-60 or Cs-137	TELETHERAPY TREATMENT		
Sr-90	TREATMENT OF EYE DISEASE		
	RADIOPHARMACEUTICAL PREPARATION		
Mo-99/ Tc-99m	GENERATOR		
Sn-113/ In-113m	GENERATOR		
Tc-99m	REAGENT KITS		
OTHER SR 89		13	

3. DATES AND TOTAL NUMBER OF HOURS RECEIVED IN CLINICAL RADIOISOTOPE TRAINING

LOCATION	DATES	CLOCK HOURS OF EXPERIENCE
OHIO VALLEY HOSPITAL ONE ROSS PARK STEUBENVILLE, OHIO 43952	1/1/90 TO 5/26/95	1,600

4. THE TRAINING AND EXPERIENCE INDICATED ABOVE WAS OBTAINED UNDER THE SUPERVISION OF:

a. NAME OF SUPERVISOR
RONALD I. VEATCH, M.D.

b. NAME OF INSTITUTION
OHIO VALLEY HOSPITAL

c. MAILING ADDRESS
ONE ROSS PARK

d. CITY
STEUBENVILLE OH 43952

e. MATERIALS LICENSE NUMBER(S)
34-13317-02

5. PRECEPTOR'S SIGNATURE
R. Veatch MD

6. PRECEPTOR'S NAME (Print or type)
R. VEATCH M.D.

7. DATE
7-19-95

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. Wonderly, 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. Vard Copp, M.D.
President

Secretary

AMERICAN BOARD OF MEDICAL SPECIALTIES

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

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Secretary

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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

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the American Society for Therapeutic Radiology and Oncology,
and the Association of University Radiologists
Hereby certifies that

Frank Peter Ottino, 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 tenth day of December, 1990
Thereby demonstrating to the satisfaction of the Board
that he is qualified to practice the specialty of

Therapeutic Radiological Physics

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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

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President

Secretary

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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

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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

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President

William Jennelle, M.D.
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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, 1978
Thereby demonstrating to the satisfaction of the Board
that he is qualified to practice the specialty of

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Sidney W. Nelson

C. Allen Good

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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

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