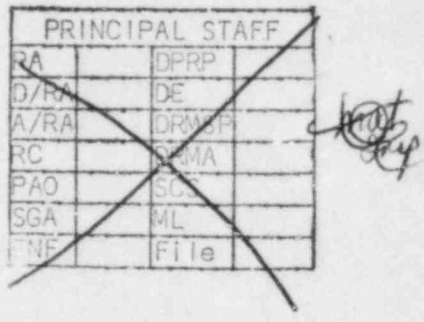
University of Cincinnati
Medical Center

College of Medicine

Office of the Dean

Cincinnati, Ohio 45267
Phone (513) 872-5491



October 20, 1983

James G. Keppler
Regional Administrator
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

re: License No. 34-06903-05

Dear Sirs,

Enclosed is the response of the University of Cincinnati to your letter of August 30, 1983 referring to the routine and special inspections from January 11, 1983 through March 25, 1983 and the several conferences. In this letter we hope to answer the citations contained in your document. In addition we intend to request license amendments to reflect the modifications described in this letter and propose that these amendments be completed within a period of three months from the date of this letter. This time period will permit an opportunity for careful review by your office.

If the Nuclear Regulatory Commission finds the proposed corrective actions unsatisfactory we request that the NRC advise prior to our requesting amendments. We request a meeting with the NRC to revise the license and bring it up to date. We find that there have been 13 letters and 8 amendments included in Item 24 since the 1978 renewal making it very difficult to know specifically what each modification represents. It is our hope that the various modifications and amendments to this license can be separated and detailed. Thus if one or more needs modification or becomes obsolete that each can either be changed or deleted with specific references to the license. This process will probably be somewhat laborious but a meeting for this purpose would permit us to simplify greatly matters of compliance. At that point we would be able to modify the Radiation Safety Manual so that it can once again become a document of good practice and guidance rather than representing specific conditions of the Broad License.

The following points are presented in answer to the general comments in the letter signed by Mr. Davis:

1. Addition of two radiation technicians to the Radiation Safety Office to accommodate the increased work load.
2. Modifications of the Radiation Safety program to reflect changes noted in the non-compliance points raised by the inspection.

3. Development of a newsletter to users emphasizing important points concerning radiation safety. This letter will be sent irregularly depending on particular circumstances of the radiation safety program.

Discussions are now being held with the Administration (my office), the Radiation Safety Committee and the Radiation Safety Office toward improvements in auditing the activities under the above license. Specific forms have been developed (see attachments). They may require modifications as they are tested in the next six months so as to improve evaluation of the Radiation Safety Program. We wish to keep this evaluation flexible in order to develop the most efficacious procedures. This audit will be carried out at quarterly intervals by the Radiation Safety Committee by review of monthly reports of number and location of surveys, their results - i.e., instances of non-compliance and attendant radiation levels encountered. Included in these reports will be pertinent details of physical conditions, techniques and necessary precautions. Reports of the quarterly reviews will be made to the Office of the Vice President after being audited by the Radiation Safety Committee.

In regard to formal training for receiving personnel, the Radiation Safety Office will provide the supervisor of the dock area and pharmacy with copies of the small pamphlet "How to Handle Radioactive Materials Packages" so that they are available to their employees. In addition the Radiation Safety Officer will meet once yearly with the supervisor of each department (dock and pharmacy) to review the DOT pamphlet "All About Radioactive Material Packages" (rev. Oct. 1981).

In regard to nurses attending brachytherapy patients inservice training is given yearly by the responsible radiotherapists for the ENT, Gynecological and General Surgical Services. Also specific instructions are already in the Hospital Nursing Manual. The Deputy Radiation Safety Officer presents a lecture to these nurses yearly.

In regard to P-32 and other high energy beta emitters in millicurie quantities, the following has been added:

a. The use of low density shielding (e.g. Plexiglass) in order to keep production of Bremsstrahlung radiation at a minimum;
b. Mandatory radiation survey and wipe test procedures after each use involving 1 millicurie or more;
c. The use of finger extremity monitors for procedures that involve 1 millicurie or more;
d. The use of a dry run prior to the performance of unfamiliar procedures in order to preclude unexpected complications. In addition, it is recommended that the radiation protection officer be present during new procedures;
e. The use of eye protection for procedures that involve 10 millicuries or more.

In regard to deliveries to the Pharmacy after hours, shipments under this license are logged separately. Instructions for Pharmacy employees are as follows:

1. The Pharmacy will receive packages of radioactive materials during the night and on weekends when the Hospital receiving department is closed.

2. All packages will be placed in a designated area immediately inside the administrative area of Central Pharmacy.

3. Radiation safety personnel will remove all packages from the Pharmacy area prior to 8AM each morning.

4. Pharmacy will maintain a log of all packages received which will include:
   a. time packages received
   b. date packages received
   c. vendor(s) name
   d. name or initials

5. Review manual, How to Handle Radioactive Materials Packages, (DOT/NRC rev. May 1983)

Steps have been taken to review operation of fume hoods at least once yearly. The flow rate of hoods used under this license will be checked with an appropriate instrument. At present an ALNOR Series 6000-P Velometer is used for this purpose.

The circumstances of contamination control in the Chemistry Department has been resolved with more frequent surveys and the development of a rigorous survey and wipe test program. Forms indicating survey results are appended. This same procedure is being developed for other laboratories for use when persistent contamination is encountered. For routine surveys of laboratories, the survey forms (attached) will be employed.

In regard to comments about the Chemistry Department laboratories, this matter has been brought to the attention of all users in the Newsletter #2 of October 13.

In order to determine action levels for decontamination the user will be responsible for surveys as indicated on the user's radiation safety protocol. These levels are to be attained upon completion of laboratory activities. The Radiation Safety Office will monitor these operations at irregular intervals to evaluate radiation hygiene and will notify the user concerning appropriate action as indicated.

When the modifications to this program are completed we plan to request an outside audit from either a certified medical radiation physicist or certified health physicist whose written report will be sent to the NRC as well as to UC.

Specific responses to the violations follow:

1. The individual whose TLD ring dosimeters recorded exposures greater than 18.75 rems has received bi-weekly instead of monthly ring dosimeters since this incident. No additional high exposures have been recorded. Circumstances of this incident have been described in a Newsletter sent to all users dated May 23, 1983 (Attachment 1). Our re-evaluations of this incident fail to confirm that a personnel exposure occurred.

2. This incident was discussed in the May 23 Newsletter. In the future we plan to allow up to 3 days following iodination for a thyroid count (see Item 4 of newsletter). Bioassay reminder notices are once again being placed in pertinent packages. Those who receive 2 millicuries or more of iodine will, in addition, be contacted by our radiation safety technician if required thyroid counts are not obtained. Compliance will also be investigated during audits of laboratories. Failure of compliance will be referred to the Radiation Safety Committee to determine whether the specific program should continue.

3. Frequency of wipe tests conducted by authorized users is being audited during laboratory inspections. Those who are not in compliance now receive written notice of non-compliance. A repeat violation will require written response from the Responsible Investigator stating corrective actions to be taken.

4. The Radiation Safety Office has compiled a list of University survey instruments and will be responsible on an ongoing basis for meter calibrations. All instruments will be re-calibrated on a yearly basis (see Item 4 of October Newsletter). We are requesting a revision to our Radiation Safety Manual allowing calibration of individual user survey meters on an annual but staggered basis. We will continue to calibrate Radiation Safety Office survey meters on a semi-annual basis. Each user is to arrange a specific time for the yearly calibration. If the instrument is not calibrated within a month of this date the RSO will notify the user by letter.

5. The individuals who obtained radionuclides improperly have been notified and have responded to the Radiation Safety Office with appropriate changes in their procedures.

Physicians using ionizing radiation are to complete Form 3 to be submitted to the Radiation Safety Office.

In the Newsletter of October 12, 1983 item 5 notifies all users of this restriction.

6. The incident of lab coats in the cafeteria has also been addressed in the May 23 Newsletter. A change concerning protective clothing is given in the Newsletter and is submitted as part of the changes in our license.

7. Data for radioactive material incineration at the Brodie Building were presented at the March 8, 1983 Enforcement Conference and also listed on page 19 of your August 30, 1983 correspondence. Special permission from the Radiation Safety Office will be required to use the Brodie incinerator facilities. A separate log will be kept. This area will be inspected quarterly.

8 and 9. Surveys are and will continue to be made pursuant to 10CFR20.201 and 10CFR20.105. Your correspondence of August 20, 1982, I.E. Information Notice No. 82-33 noted that 10CFR20.201(a) defines "survey" as an evaluation of a radiation hazard and if appropriate, would include measurements of radiation levels. Several surveys or evaluations had been made in the past and radiation levels had not exceeded limits given in 20.105. However, as you had noted as item 9, there was one recorded survey indicating a radiation level of 3mR/hr, which is greater than the allowable limit of 2mR/hr (20.105).

Pursuant to 20.105(a) we would like an amendment to our license increasing the maximum permissible radiation level in areas unrestricted and adjacent to brachytherapy treatment rooms to 5 millirems per hour. Since these brachytherapy sources are usually not used in treatment for periods greater than four days, continuous unrestricted area occupancy would not result in an individual receiving a whole body dose in excess of 0.5 rem in any period of one calendar year. For special situations, levels in unrestricted areas will be modified to conform with 20.105(a).

10. We are now in compliance with DOT regulation 49CFR173.393(n)(9) pursuant to NRC regulation 10CFR71.5(a), that is, surveys for contamination are being conducted before depleted Mo-99/Tc-99m generators are sent back to the manufacturer.

11. Records of Mo-99/Tc-99m generators returned to the manufacturer are being kept pursuant to 10CFR30.51.

12. Our personnel dosimetry records for over 200 man months in the Department of Oncology do not show any whole body personnel exposures greater than 490 millirems for the first two quarters of 1983. These data are more meaningful than the 120 millirems recorded for a monthly film badge issued to individual 7. Pursuant to 10CFR20.202, personnel monitoring devices are required if exposures are likely to exceed 25% of the 1250 millirems quarterly whole body value specified in 10CFR20.101(a), that is, approximately 312 millirems (whole body) exposure per calendar quarter would require a personnel monitoring device. The NRC report projected a single 120 millirem recorded exposure which may have been worn longer than 1 month, to a value exceeding 25% of 20.101(a) values which calculation gives values which seem excessive. The users of personnel dosimeters will be reviewed monthly. We issue individual ring dosimeters for all radiation therapists, but do not consider this individual case to be a violation.

Special instructions to radiation therapists are attached in Newsletter #3 to resolve this problem.

13. Food, beverages or smoking have not been noted in any of the last fifty or more room surveys we have recently conducted. We have found only two repeat violations in 1983 compared to 1982. Repeat offenders will be required in the future to respond in writing as to the steps they will take to eliminate this problem. Continued violations will result, as it has in the past, in suspension of radioactive material use. See Item 7 of Newsletter of October 12.

14. When brachytherapy sources are returned, Form 10's will be returned to the Radiation Safety Office. As of this date brachytherapy is not being done at non-affiliated hospitals so that this problem has been resolved.

The University of Cincinnati Medical Center is in the position of providing special medical services to the community hospitals not listed on our license only under unusual circumstances. For this reason it may be necessary to request special permission from NRC to carry out brachytherapy or other procedures with byproduct materials on an emergency basis at which time Form 10 will be used.

Sincerely,

Robert S. Daniels, M.D.
Senior Vice-President, University of Cincinnati Medical Center
Dean, University of Cincinnati College of Medicine

RSD/sck
enclosures

cc: Members, Radiation Safety Committee
Radiation Safety Office
James G. Kereiakes, Ph.D.
Eugene L. Saenger, M.D.
Henry R. Winkler, Ph.D.

UNIVERSITY OF CINCINNATI • RADIATION SAFETY OFFICE

Telephone (513) 872-4115

234 Goodman Street
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Cincinnati, Ohio. 45267

NEWSLETTER

May 23, 1983

TO: All Users of Radioactive Materials and Other Forms of Ionizing Radiation

FROM: Radiation Safety Committee
E.L. Saenger, M.D., Chairman

As a result of a recent inspection by the NRC, several deficiencies were noted in our safety program. None of these have involved personnel exposure or overexposure to patients, but they do suggest that our radiation hygiene could be improved. All of you should realize that the Broad License that the University has with the NRC permits you, the user, considerable ease in administrative responsibilities concerning the use and obtaining of radioactive materials. If we were not to maintain the Broad License, it would mean that each investigator or department would have to have its own individual license with the NRC and maintain its own safety records and many other forms of compliance. In addition to the administrative complications which would result from such a change, there would be a significant increase in administrative expense. For many there would be an increase in the difficulty and cost of waste disposal.

For these reasons, the Radiation Safety Committee has decided to issue newsletters from time to time pointing out where compliance with the University of Cincinnati requirements could be strengthened or otherwise simplified and/or improved. Obviously we expect that the individual users and all those working under the direction of this individual will pay special attention to these requirements so that we do not encounter additional difficulties.

1. One of the incidents which required investigation both by our office and by NRC involved a graduate student whose finger ring dosimeters read relatively high values. This individual could not definitely recall the source of the high exposures but he thought that it was attributable to the fact that the rings were left in the pocket of his laboratory coat near a radiation source over one or more nights. A re-run of the incident, a physical examination and chromosome study failed to reveal evidence that there was a break in technique which would account for the values on the finger rings. It is important to realize the unknowns that can be involved in such singular episodes.

2. Some question as been raised as to the desirability or lack thereof of wearing laboratory coats and film badges in dining areas, libraries and other parts of the University. The Radiation Safety Committee has modified Section V.B.3 of the Radiation Safety Manual as follows:

"Protective clothing appropriate to working conditions shall be worn. A laboratory coat and gloves are the minimum protective clothing to be worn. Monitor clothing if it may possibly be contaminated. Contaminated clothing shall not be worn outside the work area".

The intent of this paragraph is quite simple. When one has finished work with radioactivity it is the responsibility of each person to monitor the work area and his protective clothing and to discard or secure such contaminated materials before he leaves the work area. Under no conditions is this contaminated clothing to leave the work area. In general, it is good practice always to leave laboratory coats or other protective clothing in the work area when leaving it. This regulation does not prevent one from wearing any other laboratory coat outside the radiation work area (e.g., to cafeterias, library, etc.) but it must not be one that is subject to contamination.

3. All survey meters of any type are now to be calibrated only yearly by taking them to the Radiation Safety Office. After calibration each instrument will have a date for re-calibration. It is the responsibility of the individual user to assure members of the Radiation Safety Office or State or NRC inspectors that calibrations have been performed at appropriate times.

4. In regard to labeling of materials with radiochemicals particularly the iodines, the following statement (item V.F.2. Radiation Safety Manual) is changed:

"When radiochemical procedures using iodine-125 or -131 are performed, thyroid counting of personnel involved (others from the laboratory may also be counted as controls) shall be performed within 3 days after iodination of 2 millicuries or more of iodine are used." It is the responsibility of the laboratory to arrange with the RIL for a scheduled time for the necessary counting and we trust that each individual doing this type of work will regard this requirement strictly. Individuals are also responsible for submitting a urine sample to the Radiation Safety Office if tritium is used in the amounts and frequency also listed in item V.F.2.

5. All material being incinerated must be recorded and packaged appropriately. Specific instructions have been given those who bring radioactive material to the Medical School Pathological Incinerator. Instructions will also be given those who request permission from the Radiation Safety Office to burn at the Brodie Incinerator.

6. As always, any possible incident or accident involving radiation should be promptly reported to the Radiation Safety Office, or to Dr. Saenger at 872-4282, Dr. Silberstein at 872-4282 or Dr. Kereiakes at 872-5476. At night and on weekends, contact can be made through 872-4282 or through the University Hospital operator who will locate the Nuclear Medicine Resident on-call who will then notify the appropriate individual. Night numbers for the above individuals are in the Radiation Safety Manual and in the University and Cincinnati telephone directories. As stated in the Radiation Safety Manual item IV.A, "The name and phone number of the responsible person, the Radiation Safety Officer and Deputy Radiation Safety Officer shall be posted in a conspicious place near the area". The user is responsible for this posting. It is important that someone from a laboratory area in question be reached to verify conditions in the laboratory.

7. Suggestions for improving the Radiation Safety Program are always welcome. Please send them to Mr. Ken Fritz (M.L. #569) or to me at M.L. #577 (ideally in writing or by telephone at 872-4282).

Thanks.

ELS/sck

UNIVERSITY OF CINCINNATI • RADIATION SAFETY OFFICE

Telephone (513) 872-4115

234 Goodman Street
J Pavilion
Cincinnati, Ohio. 45267

NEWSLETTER #2

October 20, 1983

TO: All Users of Radioactive Materials

FROM: Radiation Safety Office
University of Cincinnati

As a result of a recent communication from the Nuclear Regulatory Commission, we have been cited for some violations of our Broad License. These violations need be brought under control and rest essentially upon the cooperation of users as outlined in the Radiation Safety Manual. Some specific comments are presented which were not covered in the newsletter of May 23, 1983.

1. A statement in the NRC letter as follows should be read carefully by each of us. To quote, "We are particularly concerned that you determine the reasons why the laboratory in the Blank Department is frequently contaminated and describe the actions that laboratory personnel will take to prevent the spread of contamination and the actions that the Radiation Safety Office will take to assure that the levels in this laboratory and any other similarly contaminated laboratories are reduced to and maintained at an acceptable level". This concern is one which imperils the great convenience of the Broad License and also may subject the University to a fine if violations of this type persist. Whether such a fine would be assessed against the particular department in which the violation occurs has yet to be determined by the University but attention of all of us should be drawn to such a possibility.

2. In regard to the use of high energy beta emitters and other circumstances in which exposure to extremities can result in unacceptably high doses, it will be necessary for users to request finger monitors as needed. Please contact the Radiation Safety Office for guidance in this matter.

3. You are requested to review your application for the use of radioactive materials to determine how frequently you had proposed using wipe tests. You are required to adhere to your schedule. Records of these tests are required to be kept.

4. In regard to your survey instrument, this instrument must be calibrated by the Radiation Safety Office yearly. Please contact that office to arrange for scheduled maintenance.

5. One of the occasionally recurring problems over the years is that a Faculty member, usually newly arrived, will arrange with a colleague elsewhere to receive shipments of radioactive materials for which the Radiation Safety Office has not been notified and no specific steps have been developed for receipt, handling and disposal of these materials according to NRC regulations. Such activities cause serious administrative problems and require reporting to the NRC with all the attendant complications which follow. Please be certain that members of your department and laboratory are aware of this restriction. It is entirely possible that radioactive materials can be received under a great variety of circumstances providing that proper arrangements have been made with the Radiation Safety Office prior to shipment. This same consideration applies to radioactive materials which might be sent from this University to recipients outside of the University.

6. In regard to any shipments of radioactive materials leaving the institution, please check with the Radiation Safety Office to be sure that the methods of shipping for future use or disposal by shipping are in compliance. There are requirements both of the NRC and the Department of Transportation to be met.

7. The restriction that eating, drinking, smoking, application of cosmetics and storage of edibles are not permitted in laboratories or rooms where radioactive materials are used or stored should be continued. This restriction is one which is of particular concern in that persons who are unfamiliar with appropriate precautions may permit contamination to occur in areas in which it is not suspected. Secondly, such incidents generate great apprehension on the part of persons who believe that they might be exposed and contaminated and for these reasons particular attention should be directed toward this requirement.

8. If a user concludes his use of byproduct material for any reason, e.g. changing research, leaving the University, it is the user's responsibility to dispose of all radioactive materials appropriately in accordance with user's protocol. Radiation Safety Office is to be furnished with the results of wipe tests indicating that the laboratory is no longer radioactive as prescribed by this license.

ELS/sck

UNIVERSITY OF CINCINNATI • RADIATION SAFETY OFFICE

Telephone (513) 872-4115

234 Goodman Street
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Cincinnati, Ohio, 45267

NEWSLETTER #3

October 20, 1983

TO: Radiotherapists

FROM: Radiation Safety Office
University of Cincinnati

In the recent NRC inspection there were several violations of the radiation safety requirements which caused considerable embarrassment to the Radiation Safety Office since they were violations done by physicians who have had special training in radiation safety.

One is that finger monitors were not used under appropriate circumstances and when used were not returned in time for proper processing. Also personnel monitors (e.g. film badges) also were not returned in a timely fashion.

The second problem was that the radiation therapists shall be responsible for the completion and return of a copy of Form #10, "Therapy Patient/Room Surveys, Visitor and Hospital Personnel Stay Times" to the Radiation Safety Office. These were not prepared appropriately during our arrangements with non-affiliated hospitals, the arrangements for which have now been terminated. Your attention is called to any possible violations of this regulation and any other special arrangements which do not conform with our Broad License. Such situations should be arranged for prior to the care of a particular patient so that the necessary steps can be taken in conformity with licensing procedures.

If these steps are not taken, our program is imperiled and your freedom to carry out appropriate brachytherapy and teletherapy can be impeded.

ELS/sck

Radiation Safety

Form A (1983)

MONTHLY ASSIGNMENT SCHEDULE

November 1983

Name: _____

Week 1		Ex	Room surveys
Dates	Nov 1-4		Waste disposal
			Patient monitoring
Week 2			
	Nov 7-11		Same as week 1
Week 3			
	Nov 14-18		Instructions to nurses
			Sealed source wipes
			Room surveys
Week 4			
	Nov 21-25		Same as week 1
Week 5			
	Nov 28-30		Same as week 1

(Adopted October, 1983)

Radiation Safety

Form B (1983)

ACTIVITIES SHEET

Name: _____ Week of Nov 14-18

Monday Nov 14

AM Activity	Time	PM Activity	Time
Nursing Inst.	9-11	Room surveys	1-3
Source wipes	11-12	Sample counting	3-4

Tuesday Nov 15

AM Activity	Time	PM Activity	Time
Room surveys	8-12	Sample counting	1-4:30

Wednesday Nov 16

Thursday Nov 17

Friday Nov 18

(Adopted October 1983)

Radiation Safety

Form C (1983)

LABORATORY SURVEY SUPPLEMENT

Room:_____

Name of User:_____

Date:_____

Survey by:_____

	YES	NO	N/A
Contamination			
Food or beverages			
Smoking			
Radioactive material authorized			
Protocol authorized			
Fume hood in room			
Hood operation checked			
flow rate cm^3/hr			
Other items (list)			

Comments:

(Adopted October 1983)

This material has been taken from the current nursing instructions of the University Hospitals.

BREAST RADIATION IMPLANT INSERVICE

BY: Dr. Coith
Dr. Compaan

These patients are treated in two (2) steps after diagnosis, a Lumpectomy and Axillary Node Biopsy is performed:

Stage I - Lump 2cm or less and/or ⊖ node
Stage II - Lump 3-5cms and/or ⊕ axillary nodes

After dismissal from hospital they are treated with external radiation therapy. Affected breast may become very red, peel, then tan.

We get them after the external radiation therapy, so do not be alarmed if breast is discolored. The operation is performed under General Anesthesia. 8-12 18-gauge needles are implanted in the breast, tubing is threaded through these, and the needles are removed. Dummy Seeds are placed in these catheters in the Operating Room, and steel buttons are placed at the ends to hold seeds in place. Dr. Compaan will instill the radioactive seeds in the patient's room. They will bring with them all materials needed to do this procedure. After radioactive seeds are implanted, doctors will crimp the still buttons shut. Implants stay in for approximately two (2) days.

Nursing Care:

1. Minimal pain for these patients.
2. Leave dressing on for three (3) days.
3. Patient can do own baths and beds.
4. Encourage patient to move and use affected arm.
5. Wear radiation bags at all times when these patients are here.
6. No pregnant personnel.
7. Radiation Safety will monitor rooms for amount of radioactivity.
8. Patient can be discharged as soon as catheters peeled.

Patient Teaching:

1. Breast may be swollen for one (1) year.
2. Breast will feel heavier and thicker until lymphatic system opens and drains properly.
3. Follow these patients with mammograms.

Doctors Coith and Compaan were very helpful, and will be bringing us some literature on this procedure. Screens and badges will be supplied by Radiation Therapy. The lead tubes will be left in patients' room, but they will be empty. This is so they can dispose of the radioactive seeds when treatment discontinued. They are responsible for bringing the seeds to the room and disposing of them too.

Dr. Coith is composing some routine orders for us so we can have an idea of how to care for these patients. If any questions or problems, page Dr. Coith or Compaan.

DG/dmf

Dr. Coith office - tel. 872-7714
home - tel. 321-2888

Dr. Pearl Compaan - 281-6200
Oncology Assoc., Inc.

UNIVERSITY HOSPITAL
NURSING SERVICE

POLICY: CARE OF PATIENTS WITH ENDOCERVICAL CESIUM IMPLANTS

AREAS AFFECTED: Gynecology; other areas as indicated

FILE: NC I - 2.0 DATE: August 1978 (Revised November 1982)

PURPOSE: To provide accepted guidelines for the safe and effective nursing care of patients with endocervical cesium implants.

POLICY:

Nursing personnel are expected to carry out all the nursing care needed by patients with cesium implants, following the guidelines given below. Dosimeter badges are to be worn by all personnel in contact with the patient.

GUIDELINES:

A. General Considerations:

1. After the physician inserts the cesium, a physician's order for "Cesium Precautions" is written.

2. The Radiation Safety Department will determine the amount of radioactivity being emitted, safe working distance and time limits for personnel and visitor contact. This information will be posted outside the patient's door.

3. Patient should be placed in a private room, if possible. If a patient is in a two bed room, she should be at the far end of the room away from traffic areas. The other patient in the room should be past childbearing age.

4. A mobile lead shield is to be placed between the two beds.

5. If two patients with cesium implants are on the unit at the same time, place them in separate rooms. (The exposure the nursing staff would receive caring for two patients in the same room would not be desirable.)

6. Personnel who are pregnant should not be assigned to care for, or come into direct contact with, the patient.

7. Children, adolescents, and pregnant women should not be allowed to visit the patient while the cesium implant is in place.

8. Visitors must receive instructions to limit the visit to fifteen minutes and to visit no more than one hour a day. Instruct the visitors to remain behind the lead shield or at least six feet away from the patient during the visit (more distance may be prescribed).

B. Patient Care Considerations:

1. Patients should be on complete bedrest without bathroom privileges. The head of the bed should not be elevated more than a thirty (30) degree angle. Patients are allowed to turn from side to side to the position of greatest comfort.

2. Patients will ordinarily receive a low residue diet to reduce bowel movements that might dislodge the cesium apparatus. Patients generally should receive more frequent, smaller feedings to offset nausea and vomiting.

3. Do Not give enemas or laxatives while the cesium is in place.

4. Patients will usually have vaginal packing and a foley catheter with continuous drainage. If the packing should come out, save it in a plastic bag and inform the physician. Observe the foley catheter frequently to insure proper drainage. If the catheter requires changing, inform the resident or attending physician. Nursing personnel are not to replace the catheter.

5. Observe the patient for symptoms of radiation sickness (nausea, vomiting, elevated temperature).

6. Body secretions and fluids (vomitus, urine, perspiration, blood, excreta) are not radioactive and may be managed without extraordinary techniques.

7. Should the cesium become dislodged and fall out, follow these guidelines:

   a. Document the time.
   b. Using the longest forceps possible, place the radioactive material in the radiation container bearing a yellow "caution - radioactive material" sign; if unavailable, place the radioactive material in the patient's bed in a metal receptacle.
   c. Keep the radiation container in the patient's room.
   d. Notify appropriate personnel: Radiation Oncology resident (4775 or page) and Radiation Safety (7:30A-4P); if resident cannot be contacted, page Radiation Oncology technician on call.
   e. Continue all radiation precautions.
   f. Do not remove bed linens from room.

8. While the cesium is in place, spend only the minimum amount of time near the patient that is needed to give adequate care.

REVIEWED BY: Nursing Care Policies and Procedures Committee.

Patricia O'Connor, M.S.N.
Associate Administrator, Nursing

UNIVERSITY OF CINCINNATI MEDICAL CENTER
CINCINNATI GENERAL HOSPITAL
NURSING SERVICE

PROCEDURE: POST MORTEM CARE OF A RADIOACTIVE BODY

FILE: NC - I 1.1 August 1978

PURPOSE: To safely prepare the radioactive body for transfer to the Morgue from RAI Laboratory.

POLICIES GOVERNING PROCEDURE:

1. Hospital Policy II-601, "Transportation of Bodies."
2. Hospital Policy I-108, "Patient Deaths."
3. Hospital Policy II-408, "Unclaimed Personal Effects."
4. Hospital Policy II-404, "Patient's Property."
5. also see Nursing Care Procedure A 10.1, "Post Mortem Care."

PRECAUTIONS:

1. Strict adherence to the instructions for handling the body provided by the Safety Director in RAI is essential.

2. The deceased patient must be transferred to the Morgue within one hour after the physician has pronounced the patient dead.

3. Clothing and personal effects are to be put in a marked plastic bag and taken with the body to the Morgue.

4. Valuables in the patient's possession on the unit at the time of death are to be deposited in the safe. Valuables on the patient's person at the time of death are to be handled as directed by the Safety Officer in RAI.

RESPONSIBILITY:

1. Registered Nurse.
2. Licensed Practical Nurse.
3. Nursing Associate.
4. Hospital Aide.

EQUIPMENT:

1. From the unit procure a Shroud Kit which contains:

   A. A plastic shroud sheet.
   B. A chin strap.
   C. 2 cellulose pads
   D. 3 identification tags.
   E. 3 - 36 inch ties.
   F. 2 - 60 inch ties.
   G. Patient identification band.
   H. Deposit of Valuables Form.
   I. False teeth envelope.
   J. Clothing card.
   K. Consent form for Post Mortem examination.

2. The patient's medical record (if entire record not already in RAI).

STEPS	POINTS OF EMPHASIS
1. When a radioactive patient expires in RAI, RAI will notify:	
A. The patient's unit.	
B. The RAI Director of Safety.	
2. The Nursing Unit will notify:	
A. The patient's physician.	Ask physician to go to RAI to pronounce the patient dead.
B. The Information Office.	Notify Information that the patient has "apparently ceased to breathe."
3. The physician is responsible for notifying the family of the death. The physician must call Information personally to report that he/she has pronounced the patient dead and has notified the family.	
4. The nursing unit will send a registered nurse and an assistant to RAI. These staff members will take with them:	You must give priority to completing post-mortem care and delivering the body to the Morgue within one (1) hour after the death is pronounced. Ohio State Law limits the amount of time a body may be left unrefrigerated.
A. The patient's belongings.	
B. A shroud kit.	
C. The patient's medical record (if entire record not already in RAI).	
5. Instructions for handling the body will be provided by the Safety Officer in RAI.	
6. Complete identification tags.	
7. Place shroud on stretcher.	
8. put on gloves.	
9. Place identification tags on body.	
10. Lift body from contaminated stretcher onto clean stretcher covered wtih shroud.	

STEPS	POINTS OF EMPHASIS
11. Wrap the body.	Follow post mortem care procedure, Nursing Care Procedure A 10.1, in the Nursing Care Policies and Procedures Manual, following instructions for any special technique given by the Safety Officer in RAI.
12. Remove gloves.	
13. Place tag outside shroud at the waist.	
14. Cover the body with a clean sheet.	
15. Place radioactive sign on sheet.	
16. Wash hands.	
17. Take body to the Morgue and inform the Morgue attendant that the body is radioactive.	The complete medical record must accompany the body to the Morgue.

CHARTING GUIDELINES: On the Progress Notes record:

1. The date and time of death.
2. The name of the physician who pronounced the patient dead.
3. The time the body was transported to the Morgue.
4. Note that the medical record was taken with the body to the Morgue.

REVIEWED BY: Nursing Care Policies and Procedures Committee.

FOR FURTHER REFERENCE: None.

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