ONCOLOGY SERVICES CORPORATION

110 Regent Court • Suite 100 • State College, PA • 16801 814-238-0375 • 800-628-9070 • Fax 814-238-8069

April 8, 1993

VIA TELECOPY: 215/337-5269
AND OVERNIGHT UPS

U.S. Nuclear Regulatory Commission - Region I
Division of Radiation Safety and Safeguards
475 Allendale Road
King of Prussia, PA 19406-1415

ATTN: Richard W. Cooper, II, Director
Mohammed M. Shanbaky, Ph.D., Section Chief

RE: License No. 37-28540-01
Docket No. 030-31765
Mail Control No. 117698

Dear Mr. Cooper and Dr. Shanbaky:

This will confirm verbal commitments by members of my staff and our health physics consultant during the management meeting conducted March 23, 1993 at NRC-Region I. The results of that meeting were summarized in Report No. 030-31765/92-01 dated 3/29/93 as an attachment to your letter to me of March 30, 1993. This letter will also address the issues contained in your last letter and the attachment summarizing the meeting.

My letter to you dated March 26, 1993 should provide you with the information concerning the appointment of Bernard R. Rogers, M.D. to serve as our Radiation Safety Officer (RSO) on the NRC license referenced above. This letter contained the job description for the RSO position as Attachment 1. My letter also contained an outline of the specific items, topics and documentation that the independent board certified physicists from Applied Health Physics, Inc. (AHP) include in their performance based audits of our cancer centers. I understand that Dr. Shanbaky told Dr. Rogers and Mr. Gallaghar during a conference call on March 31, 1993 that this information satisfied your requests for additional information and clarification as to the RSO and AHP's certification program and is currently being reviewed by Mr. Thomas Thompson.

This letter will augment the details provided in my

The Management Oversight Program is the implementation of my Policy Statements on Radiation Control and Regulatory Compliance dated February 12, 1993. Please refer to Attachment 1 of this letter. Each authorized under (AU) and administrator is to sign this policy statement and will be accountable for implementation of it. The Radiation Safety Officer (RSO) facilitates, instructs and oversees our commitment to controlling radiation risks to levels that are as low as reasonably achievable (ALARA). Each AU has the authority and is responsible to the Chief Executive Officer (CEO) for the way in which all personnel comply with our written protocols for the management of routine and emergency situations involving radiation. Attachment 2 contains a copy of "Statement of Responsibility High Dose Rate Brachytherapy for Authorized User (PHYS106 tex 1/93)." Attachment 3 is a similar document which the physicist must sign. Copies of both documents are to be sent to me.

We are in the process of revising our HDR Treatment Manual. This 3-ring notebook was originally prepared by OSC's Department of Physics under the direction of Dr. David Cunningham. A copy was sent to NRC on or about 2/15/93 and it was issued in February, 1993 to AU's, administrators, physicists and other OSC personnel as part of our radiation safety program by Dr. Rogers. It will continue to be updated and improved upon, but it serves as the most important bases for our management oversight program. It is one of the major elements included in AHP's audit and certification program. Section 4 of this manual contains a copy of the Treatment Quality Assurance Checklist. Both the AU and the physicist must complete and initial all 15 items. A copy of this 2 page checklist is contained in Attachment 4.

OSC's Corrective Action Program has been set up to receive and to investigate any specific problem or weakness that has been identified by the independent auditors, our RSO or any other authoritative source (e.g. NRC, State officials, etc.). The AU, physicist, or RSO are the most likely persons to become aware initially of a situation that would require corrective action. Thus, each of these employees must comply with specific instructions as contained in my policy statement and statements of responsibility they have read and signed. Prompt notification to the CEO and RSO will initiate corrective action to be taken by me,

action as needed even before an audit report has been issued by AHP. These remedial measures taken at the local level are followed up by the CEO and RSO as needed. Mr. Gallaghar monitors the results of our correction action program and reports his findings to me.

A Radiation Safety Committee (RSO) has been mentioned as a possibility but not as a realty that is now functioning. Various members of my staff, including Dr. Derdel, Dr. Rogers, Mr. Mansour and our consultant, Mr. Callaghar, have reviewed the value of having a functioning RSC and we believe it would not add value to our program.

Radiation Safety Training is covered in Section 2 of our HDR Treatment Manual (Attachment 4). This section includes copies of our Quarterly and Annual Inservice Training Logs. It contains a copy of a typical inservice radiation safety review which was presented on 2/6/93. Attachment 5 contains a copy of the written examination that was given on 2/6/93 following presentation of the inservice training. I have requested Mr. Gallaghar to assist us in our training program as part of AHP's Annual Service Contract with OSC. He participated in the 2/6/93 inservice and AHP personnel will provide training during their audits.

Emergency Preparedness Planning is a top priority item for all of us at OSC, especially Dr. Rogers and Mr. Gallaghar. Attachment 6 contains a copy of Section 6 of the HDR Treatment Manual. Dr. Rogers is also making a special video tape to instruct the AU and physicist on specific actions they must take in order to cope effectively with HDR emergencies involving certain treatment modalities.

In summary, I trust the information provided in this letter and in my letter of March 26, 1993 will provide you and your

staff with the details you requested. Please do not hesitate to call me if I or other members of my staff can be of assistance.

I make these statements under penalty of perjury.

Very truly yours,

Douglas R. Colkitt, M.D.

Attachments

cc: Robert Gallaghar, CHP (w/attachments)
Bernard Rogers, M.D. (w/attachments)

POLICY STATEMENTS
ON
RADIATION CONTROL AND REGULATORY COMPLIANCE

Oncology Services Corporation prides itself for our cancer "Centers of Excellence . . . for Life". "Excellence" must apply to all aspects of our work, especially in the way we use radiation. Therefore, more compliance with regulations and accepted health physics principles can and will not be considered "good enough". Effective immediately, OSC personnel will be expected, as a condition of employment, to comply with applicable regulations and accepted radiological safety (health physics) practices and procedures as contained in Attachment 1 of this Policy Statement.

OSC's top management has contracted to have all radiation operations audited by board certified health physicists (CHP). Results of these audits will be sent to me and to the medical director and administrator of every OSC facility. Documentation of regulatory health physics compliance will be evidenced by the issuance of a special certification (see Attachment 2) signed and sealed by a CHP in accordance with Applied Health Physics Certification Policy shown in Attachment 3. Temporary suspension, expiration or cancellation of a facility's certification will result in prompt action by me and or members of our executive staff, as well as possible notification to regulatory officials as required by Title 10 Code of Federal Regulations and/or state statutes.

I would appreciate full cooperation in the effective implementation of this policy at all of our facilities.

Douglas R. Colkitt, M.D.
Oncology Services Corporation

ONCOLOGY SERVICES CORPORATION
DEPARTMENT OF PHYSICS

STATEMENT OF RESPONSIBILITY
HIGH DOSE RATE BRACHYTHERAPY
FOR AUTHORIZED USER

Program Oversight:

The Authorized User (AU) is responsible for the acts and omissions of the supervised personnel. The Authorized User must ensure compliance with all training requirements of 10 CFR Part 35. This training will be provided by the licensee, however, the Authorized User must notify the licensee of changes in personnel related to Part 35 training. The Authorized User must retain documentation of training compliance.

General Responsibility:

1. Review and implement quality management program.
2. Review and implement all procedures in the HDR manual.
3. Complete annual inservice training and maintain documentation.
4. Notify the licensee's Chief Executive Officer (CEO) and/or the Radiation Safety Officer (RSO), whenever the AU becomes aware of a specific problem involving safety of regulatory compliance.

Radiation Safety Responsibility:

1. Verify all regulatory notices and necessary warning signs are in place.
2. Observe/Participate in quarterly review of emergency procedures.
3. Train or verify training of operators in safe use of HDR equipment including basic radiation safety concepts.
4. Read and ensure compliance with all aspects of materials license pertaining to Authorized User's procedures. This may be delegated, however, the delegation must be documented and retained in this section.
5. Perform a simulated emergency source recovery procedure at least quarterly in the presence of the RSO.
6. Fulfill other responsibilities as designated by the Chief Executive Officer (CEO) and/or the Radiation Safety Officer (RSO).

Treatment Specific Responsibility:

1. Verify correctness of patient information on printouts, identification, (2 IDs), prescription, treatment location, treatment distance, target volume and applicator.
2. Sign and date HDR Prescription Form (phys113).
3. Verify actual physical length of the catheter in the treatment plan matches the clinical setup. Label each channel as per the treatment plan for multichannel implant.
4. Insure that in multiple channel treatments that the correct catheter is connected to the correct machine channel. Physician shall connect catheters if more than one catheter is used. Inspect distal end of each catheter before use.
5. Be present at the console throughout HDR brachytherapy operation.

Assertion of Procedural Compliance:

I have read all sections of this manual, and I agree to comply with all the policies and procedures stated herein.

_____ Date: _____

Physician as Authorized User (AU)

Forward a copy to:
Chief Executive Officer (CEO)
Radiation Safety Officer (RSO)
NRC License File

ONCOLOGY SERVICES CORPORATION
DEPARTMENT OF PHYSICS

STATEMENT OF RESPONSIBILITY
HIGH DOSE RATE BRACHYTHERAPY
FOR PHYSICIST

General Responsibility:

1. Review and implement quality management program.
2. Review and implement all procedures in the HDR manual.
3. Complete annual inservice training and maintain documentation.
4. Notify the Authorized User (AU) and the Radiation Safety Officer (RSO) immediately upon learning or suspecting a problem involving safety or regulatory compliance.

Quality Control Responsibility:

1. Perform routine calibration at frequency no less than required by license. Complete form phys114 or phys115.
2. Oversee ordering and delivery of source. Complete form phys112.
3. Examine and test all applicator source guides for defects, accuracy of length, etc.
4. Maintain accurate records and documentation for periodic review.
5. Perform acceptance testing on afterloader treatment planning computer, catheters and applicators.

Radiation Safety Responsibility:

1. Verify all regulatory notices and the necessary warning signs are in place.
2. Observe/participate in quarterly review of emergency procedures.
3. Train or verify training of operators in safe use of HDR equipment including basic radiation safety concepts.
4. Maintain radiation survey meter with current annual calibration and check source reading.
5. Train console operator in use of survey meter.
6. Read and ensure compliance with all aspects of the materials license. Amend license as required for regulatory compliance.
7. Perform a simulated emergency source recovery procedure at least quarterly in presence of the RSO.
8. Fulfill other responsibilities as designated in writing by the Authorized User or Radiation Safety Officer.

Treatment Specific Responsibility:

1. Complete physics quality assurance consult form day of treatment. Form phys100.
2. Perform an independent verification of computer treatment plan. Form phys102.
3. Verify the source activity and calibration date are correct on the computer treatment plan. Form phys101.
4. Verify that the indicated physical length of the catheter is accurate by independent measurement. Form phys101.
5. Be present at the console throughout HDR brachytherapy operation and perform a thorough radiation survey of each patient following radiation treatment.

Assertion of Procedural Compliance:

I have read all sections of this manual, and I agree to comply with all procedures and policies stated herein.

_____ Date: _____

Physicist

Forward a copy to:
Chief Executive Officer (CEO)
Radiation Safety Officer (RSO)
Central Training Record File

ONCOLOGY SERVICES CORPORATION
DEPARTMENT OF PHYSICS

TREATMENT QUALITY ASSURANCE CHECK LIST
(Omnitron 2000)

Patient:_____ ID Number:_____ Date:_____

The following test shall be done with each patient treatment.

PH_____ 1. Verify film and ring badges are worn by all personnel and specially designed Emergency Lead container, Survey Meter, Wire cutters, Scissors, long handled Forceps and Gloves are in proper location. (physicist initials)

CO_____ 2. Localization film shall be taken by console operator. (console operator initials)

CO_____ 3. Verify operation of Primalert. (console operator initials).

AU_____ 4. Verify correctness of patient information on printouts, identification, (2 IDs), prescription, treatment location, treatment distance, target volume and applicator. (physician & console operator initials)
CO_____

PH_____ 5. Verify the source activity and calibration date are correct on the computer planning. (physicist initials)

CO_____ 6. Verify the correct patient file name. Only one patient file is permitted on a disk. (console operator initials)

PH_____ 7. The plan dwell times must be independently verified by a physicist before treating. (physicist initials)

CO_____ 8. Verify that the source activity, source positions, and dwell times on the afterloader printout is exactly the same as that shown in the computer console and in the treatment plan. (console operator initials)

PH_____ 9. Verify that the indicated physical length of the catheter is accurate by independent measurement. (physicist initials)

AU_____ 10. Verify the actual physical length of the catheter and, when appropriate, the diameter of the cylinder in the treatment plan matches the clinical setup. Label each channel as per the treatment plan for a multi-channel implant.

AU_____ 11. Insure that in multiple channel treatments that the correct catheter is connected to the correct machine channel. Physician shall connect catheters if more than one catheter is used. Inspect distal end of catheters before use. It is imperative that the planning system and afterloader match.

PH_____ This must be verified by the physicist. (physician & physicist initials)

CO_____ 12. Insure that all catheter connections from the afterloader to the patient are as straight as possible. The use of gauze and tape around needle coupling will help to insure this. If particularly tight curve is being treated it may be desirable to test treat a similar curve taped down on table before the patient

CO _____ 13. Insure that all catheters are fully seated into machine connectors, with the connector plunger fully extended. The machine will indicate an error if this is not the case. (console operator initials)

PH_____ 14. Quality management audit of each chart for completeness. (physicist initials)

AU_____ 15. A film (autoradiograph) of the source will be taken after each high dose
PH_____ treatment. (physician and physicist initials)

ONCOLOGY SERVICES CORPORATION
DEPARTMENT OF PHYSICS
February 6, 1993

Name: _____ Center _____

1). Half life of Ir-192 radioactive material which we use in the HDR unit is 74 days, and initial activity is 10 Ci. How many days later source activity will be 2.5 Ci.
(a) 90 days
(b) 111 days
(c) 148 days
(d) 444 days

2). The check source 137-Cs isotope has activity
(a) 10 micro Ci
(b) 1 x 10^{-5} Ci
(c) 370 Bq
(d) All of above

3). Intensity of Ir-192 HDR source decreases in air
(a) Proportional to the distance
(b) Inversely proportional to the distance
(c) Inversely proportional to the square of distance
(d) Proportional to negative exponential of distance
(e) proportional to exponential of distance

4). General Responsibility for console operator are
(a) Verify operation of primalert
(b) Verify the correct patient name
(c) Complete annual inservice training and maintain documentation.
(d) None of above
(e) All of above

5). What should be the reading at one meter from the afterloader be when the source is parked in the safe?
(a) 100 mR/hr
(b) 10 mR/hr
(c) 0.1 mR/hr
(e) 0.01 mR/hr

6). Why do we need to Radiation Survey the Patient before each HDR treatment
(a) Cosmic ray correction
(b) Background X-ray correction
(c) Initial reading of the patient's body due to any other source of radiation
(e) Check the irradiation left due to electron boost

7). Why do we need to perform radiation survey of the Patient's treatment area after each HDR treatment ?
(a) To check the radiation survey meter
(b) To make sure the HDR source is totally removed
(c) To Check the irradiation left due to external beam treatment

8). How should you verify the operation of the Prime Alert ?
(a) Using check source to activates flashing.
(b) Using HDR active source to activates flashing
(c) Using accelerator beam to activates flashing
(d) Using C-arm to activates flashing.

9). Why do we use long handled instruments to handling source guide tube in the Emergency situation ?
(a) To minimize the personnel exposure
(b) To maximize personnel exposure
(c) To save more time at the Emergency
(d) A requirement of NRC.

10). What is the half life of Ir-192 ?
(a) 74 days
(b) 148 days
(c) 37 days

11). What instrument is commonly used in the treatment room for the radiation safety check ?
(a) Long handled forceps
(b) Emergency Lead Container
(c) Radiation film badge
(d) Radiation survey meter.

12). Safe (Green LED)- Indicates on console computer after treatment that the full length of the active wire is retracted and parked position.
(a) True
(b) False

13). What precaution you need to take before enter the treatment room?
(a) Check your ring and film badges
(b) Ware a pair of gloves
(c) Carry a survey meter and observe the flashing of primealert
(d) all above

14). Who is responsible in an Emergency to go into the treatment room first ?
(a) Physician
(b) Physicist
(c) Technologist
(d) Console operator

15). Who do we call first after Radiation Incident ?
(a) Omnitron International Inc.
(b) Radiation Safety Officer
(c) NRC
(d) OSC

16). If the Physician is not available and the Source is stuck or broken, who should remove the catheters?
(a) Registrar Nurse
(b) Radiation Technologist
(c) Physicist
(d) Can not treat patient without physician.

17). What is the first thing to do, if treatment computer shows obstruction when active source is out and source retraction occur ?
(a) Go and survey the patient
(b) Try to start treatment again
(c) Ask patient she/he is ok
(d) none of above

18). During the QA on the HDR if you discover that the survey meter is not working. The Physician wants to bring the patient in the room and get started 5 in minutes ago, what should you do.
(a) Treat the patient relying on the prime alert
(b) Find another equivalent calibrated survey meter
(c) Do not treat the patient until you have a meter
(d) all above

19). What maximum range of radiation you can read using radiation Victoreen 410 survey meter?
(a) 10 mR/hr
(b) 100 mR/hr
(c) 1000 mR/hr
(d) 10,000 mR/hr

20). Indicate True or False in following statements:
In the Emergency Situation of HDR
T/F (a) Push Red Emergency Button first.
T/F (b) Enter the room with the Survey Meter and noting the flashing of the Primealert.
T/F (c) Carefully survey the patient outside the treatment room.
T/F (d) Close and Secure the door and Clearly mark it DO NOT ENTER
T/F (e) Record the estimated distances and times exposure and record names of all individuals in incident.
T/F (f) Under all circumstances assume that the sealed source has leaked.
T/F (g) NRC shall be notified as per NRC regulations.

ONCOLOGY SERVICES CORPORATION
DEPARTMENT OF PHYSICS
OMNITRON 2000 HDR AFTERLOADER

EMERGENCY PROCEDURES

In normal operation, the retract mechanism will place the Active Source Wire in the SAFE and PARKED position at the end of treatment or at an unscheduled interruption of treatment, however, if the **Active Source Wire fails to Park or The Wire Breaks:**

* Push red Emergency Stop Button.
* Two designated and trained individuals wearing their film badges, promptly enter treatment room with the Survey Meter, noting the flashing of the **Primalert.** Quickly assess the situation. Time is important. A third person remain on alert at the entrance to the shielded area.
* If catheter/needle still has the wire in it, then try to manually retract wire. A manual retract knob is located on the side of the afterloader. Turn in the direction of the arrow. Approximately 30 revolution of the knob should place the Active Source Wire in the safe parked position.
* If manual retraction fails or if source wire is noted to be broken, then catheter(s)/needles must be quickly removed from the patient.
* Using long handled forceps, the physician removes the catheter(s)/needles from patient or cuts the catheter to release patient from afterloader. Physician transfers catheter to physicist who with long handled forceps identifies the dislodges source and places the catheter in a shielded position behind the afterloader.
* If it is an interstitial implant with flexible needle(s), have suture removal set and other appropriate equipment available to remove such catheter. If interstitial needle implant and source remains in patient, remove the needle and the source and place into the shielded container.
* If implant has both ends of catheter(s) exiting through the skin (e.g., into abdominal or soft tissue sarcoma interstitial implant) have available soldering iron (optitemp) to close one end before removing catheter with the source and putting it into the shield container.
* On the command of the physician, a third person enters the room to assist in the removal of the patient. Carefully survey patient outside the treatment room.
* Record the estimated treatment and exposure times. Immediately record a list of all personnel.
* No further action should be taken by any personnel other than the physicist or designated personnel with appropriate training.

* Physicist and designated assistant re-enter the treatment room with gloves on and with survey meter.
* If the source is not in the safe position of the Afterloader unit, determine the position of the source, if needed cut the wire and/or catheter and using tongs place the source into the Emergency Container.
* Under all circumstances assume that the sealed source has leaked and quarantine the area and the equipment until survey/wipe tests have confirmed the absence of contaminated material.
* Close and secure door and clearly mark it **DO NOT ENTER.**
* Record the estimated distances and times of exposure. Record names of individuals in incident.

* NRC shall be notified as per NRC regulations.

EMERGENCY CONTACTS

Physicist:_____	Phone:_____
Physician:_____	Phone:_____
Oncology Services Corp.	Phone: (814) 238-0375
Omnitron International, Inc.	Phone: (713) 666-6499
Nuclear Regulatory Commission	Phone: (301) 951-0550

Enclosure 3a

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

April 22, 1993

Docket No. 030-31765 License No. 37-28540-01

Oncology Services Corporation
ATTN: Dr. Douglas Colkitt, M.D.
President
775 South Arlington Avenue
Harrisburg, Pennsylvania 17109

Dear Dr. Colkitt:

Subject: Oncology Services Corporation's Program Upgrades

This refers to your April 8, 1993 submittal in response to our letter dated March 5, 1993. In your April 8, 1993 letter, you provided clarification on your radiological safety program upgrades and confirmed commitments made by your staff to the NRC during management meetings that were conducted on January 27, 1993 and March 23, 1993.

After review of your February 15, 1993, March 26, 1993 and April 8, 1993 submittals describing your Radiation Safety Program, the NRC staff is currently planning to perform inspections at your facilities in Harrisburg and Pittsburgh.

These inspections will be detailed in nature and will focus on the verification of the adequacy of program improvements and their implementation at these two facilities.

No response to this letter is required.

Your cooperation with us is appreciated.

Sincerely,

Richard W. Cooper, II

Richard W. Cooper, II, Director
Division of Radiation Safety
and Safeguards

cc:
Public Document Room (PDR)
Nuclear Safety Information Center (NSIC)
Commonwealth of Pennsylvania

ENCLOSURE 4

ONCOLOGY SERVICES CORPORATION

110 Regent Court • Suite 100 • State College, PA • 16801 814-238-0375 • 800-628-9076 • Fax: 814-238-8069

(412) 463-3570 March 22, 1993

VIA TELECOPY/215-337-5269

Mohamed M. Shanbaky, Ph.D.
Section Chief
U.S. Nuclear Regulatory Commission Region I
475 Allendale Road
King of Prussia, PA 19406-1415

Re: Oncology Services Corporation

Dear Dr. Shanbaky:

Per my conversation of this date with Abdurrahman Unal, M.D., I have been advised that a source change is needed at the Harrisburg Center for the HDR unit. Therefore, the Licensee respectfully requests that Region I grant permission for said source exchange to be performed as soon as possible.

As an officer of the Licensee, I make this statement pursuant to the penalties of perjury for unsworn falsification set forth in 18 Pa. C.D. (Pennsylvania Crimes Code).

Thank you for your cooperation in this matter.

Very truly yours,

Marcy L. Colkitt

General Counsel

MLC/sjg

cc: Abdurrahman Unal, M.D. (via telecopy)
Douglas R. Colkitt, M.D. (via telecopy)

1305170179 1p.

ENCLOSURE 5

GREATER HARRISBURG
CANCER CENTER
775 S. Arlington Avenue
Harrisburg, PA 17109
717-541-9240

Abdurrahman Unal, M.D.
Medical Director

VIA TELECOPY/215-337-5289

March 30, 1993

Mohamed M. Shanbaky, Ph.D.
Section Chief
U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406-1415

Re: Oncology Services Corporation

Dear Dr. Shanbaky:

Per our conversation, Omnitron has indicated they can ship sources providing that we have permission from the NRC. The Omnitron source in the HDR unit at the Harrisburg Cancer Center should be changed for proper treatment of patients which we have received permission to treat. I tried to contact you via phone regarding this matter although I was unable to reach you.

Thank you for your attention regarding this matter.

Very truly yours,

A Unal

Abdurrahman Unal, M.D.
Medical Director

AU/vlt

cc: Marcy Colkitt, General Counsel (via Telecopy)

9305170184 1p

ENCLOSURE 6

GREATER HARRISBURG
CANCER CENTER
775 S. Arlington Avenue
Harrisburg, PA 17109
717-541-9240

Abdurrahman Unal, M.D.
Medical Director

Via Telecopy/215-337-5269

March 31, 1993

Mohamed M. Shanbaky, Ph.D.
Section Chief
U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406-1415

Re: Oncology Services Corporation - Harrisburg Center

Dear Dr. Shanbaky:

As you are aware, the source in the HDR unit at the Harrisburg Cancer Center is in need of exchange in order for us to proceed treating the patients with whom we have been granted permission to treat. Some of these patients need to be scheduled in advance and arrangements must be made to reserve a hospital operating room where the applicator is placed within the patient. We are requesting permission to exchange the source as quickly as possible to avoid interruption of the patient schedule and prevent any unnecessary delay. Time is of the essence regarding this matter.

As the licensed physician and authorized user of the Licensee, I make this statement pursuant to the penalties of perjury for unsworn falsification set forth in 18 Pa. C.D. (Pennsylvania Crimes Code).

Thank you for your cooperation in this matter.

Very truly yours,

A Unal.

Abdurrahman Unal, M.D.
Medical Director

AU/vlt

cc: Marcy Colkitt, General Counsel (via Telecopy)

9305170188 1p.

ENCLOSURE 7

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

APR 0 2 1993

Oncology Services Corporation
ATTN: Douglas R. Colkitt, M.D.
President
110 Regent Court, Suite 100
State College, Pennsylvania 16801

License No. 37-28540-01
Docket No. 030-31765
EA No. 93-006

SUBJECT: RELAXATION OF ORDER SUSPENDING LICENSE

Dear Dr. Colkitt:

This letter refers to our Order suspending the above named License (Order) issued January 20, 1993, to Oncology Services Corporation (OSC) and to the request for relaxation of the Order submitted on March 22, 1993, to Mr. Richard Cooper of this office by your General Counsel, Marcy L. Colkitt. Ms. Colkitt requested that authorization be given to exchange the iridium-192 high dose rate afterloader source at your licensed facility in Harrisburg, Pennsylvania.

Ms. Colkitt informed us in her March 22, 1993 letter that per her conversation with Dr. Abdurrahman Unal, the medical director of the Greater Harrisburg Cancer Center (GHCC), a source exchange is needed at GHCC to treat patients. Additionally, in a March 31, 1993, letter to Mr. Cooper, submitted under affirmation, Dr. Unal indicated that to conduct the HDR patient treatments permitted under the Order relaxation letter, dated March 26, 1993, a new iridium-192 source is required to be installed.

Based on the fact that the source exchange would be performed by an Omnitron International qualified representative under the supervision of OSC's Radiation Safety Officer, your Order relaxation request to exchange the HDR iridium source at GHCC is hereby granted.

Therefore, in accordance with your March 22, 1993 request, and pursuant to Section VI of the Order, Section VI, paragraph 2 of the Order is amended to add the following:

> The licensee may exchange the iridium-192 source at the Greater Harrisburg Cancer Center in accordance with the relief requested on March 22, 1993.

Please notify this office five working days prior to the scheduled date for source exchange.

All other provisions of the January 20, 1993 Order remain in effect. Therefore, in accordance with the Order, although GHCC may be treating new patients at the specific requests of referring physicians, it is not soliciting new patients for HDR treatment.

~~9304090210~~ 4pp.

If you have any questions regarding this matter, please contact Mr. Richard Cooper of my staff at (215) 337-5281.

Sincerely,

Thomas T. Martin
Regional Administrator

cc:
Public Document Room (PDR)
Nuclear Safety Information Center (NSIC)
Commonwealth of Pennsylvania

ONCOLOGY SERVICES CORPORATION

110 Regent Court • Suite 100 • State College, PA • 16801 814-238-0375 • 800-628-9076 • Fax: 814-238-8069

Nuclear Regulatory Commission
Attention: Thomas T. Martin, Regional Administrator
Region 1
475 Allendale Road
King of Prussia, Pennsylvania 19406-1415

April 12, 1993

SUBJECT: HDR IRIDIUM-192 SOURCE CHANGE
GREATER HARRISBURG CANCER CENTER

Dear Tom:

This letter serves as notification of an HDR iridium-192 source exchange to take place at the Greater Harrisburg Cancer Center, 775 S. Arlington Ave., Harrisburg, Pennsylvania, on Thursday, April 22, 1993.

In accordance to your letter dated April 2, 1993, referring to the "relaxation of order suspending licence," a qualified representative of Omnitron International Corporation will perform the exchange under the supervision of Bernard Rogers, M.D., Radiation Safety Officer, OSC.

I understand that at this point all other provisions of the January 20, 1993 remain in effect.

If you have any further questions regarding this matter, please contact Dr. Bernard Rogers at (814)238-0375, or Dr. Abdurrahman Unal, Medical Director of GHCC at (717)541-9240.

Sincerely,

Robert Beauvais
Regional Administrator

cc:
Abdurrahman Unal, M.D.
Douglas Colkitt, M.D.
Bernard Rogers, M.D.
Marcy L. Colkitt, General Counsel

ENCLOSURE 9

ONCOLOGY SERVICES CORPORATION

110 Regent Court • Suite 100 • State College, PA • 16801 814-238-0375 • 800-628-9070 • Fax 814-238-8069

(412) 403-3570 March 23, 1993

VIA TELECOPY: 215/337-5269

Richard W. Cooper, II, Director
AND
Susan Frant Shankman, Ph.D.
Deputy Director
Division of Radiation, Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406-1415

Re: License No. 37-28540-01
Oncology Services Corporation
Modification to Order Suspending
License - Docket No. 030-31765
EA No. 93-006

Dear Mr. Cooper and Dr. Shankman:

The GREATER HARRISBURG CANCER CENTER requests the right to treat six patients with HDR. Dr. Unal has indicated that his patients, as described below, should receive said treatment.

PATIENT A: This is an elderly female patient who has carcinoma of the vagina. She completed external beam radiation therapy on 3/22/93. It is in her best interests to receive HDR brachytherapy due to her age and multiple medical problems. She has incidents of cerebrovascular accidents and she is unable to walk.

PATIENT B: This patient has cervical carcinoma. She is scheduled to receive a course of external beam radiation therapy. After a few weeks of external beam she will be ready for intracavitary treatment. Her referring physician will be involved with her care during these procedures. Dr. Unal believes it is in the patient's best interests not to disintegrate her care.

PATIENT C: This patient has lung carcinoma. He underwent chemotherapy and did not respond. He is completing a course of external beam therapy. He has only localized disease and he has responded to external beam radiation therapy. It would be worthwhile to provide every attempt to provide local control for

his disease. Dr. Unal wants endobronchial treatment to be part of his treatment.

PATIENT D: This patient has extensive adenocarcinoma of the endometrium. She is currently undergoing a course of external beam radiation therapy which she may not be able to complete because of her past history of irritable bowel syndrome. Intracavitary treatment would be an integral part of her management. Her referring physician would be part of Dr. Unal's medical management team.

PATIENT E: This patient has carcinoma of the cervix. She will soon be completing external beam radiation therapy. Her referring physician will be involved with her care during these procedures and management of her case.

PATIENT F: This is a 72 year-old lady who completed external beam radiation therapy for squamous cell carcinoma of the vagina. She is a candidate now ready to begin high dose remote afterloading brachytherapy. This patient is not a candidate for conventional brachytherapy because she has bilateral congenital hip disease in addition to other multiple medical problems.

I affirm after personal investigation that the statements contained in this letter are true and correct to the best of my knowledge or belief and subject to the penalties of perjury set forth in Title 18 of the Pennsylvania Crimes Code. I have authority to speak as the representative of the corporation.

Dr. Unal is prepared to address any additional concerns the NRC has regarding the Greater Harrisburg Cancer Center and/or

the need for relief from the suspension order with regard to these patients. Dr. Unal can be reach at 717-541-9240.

Very truly yours,

Marcy L. Colkitt

General Counsel

MLC/sjg

cc: Abdurrahman Unal, M.D. (via telecopy)
Douglas R. Colkitt, M.D. (via telecopy)

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

March 26, 1993

License No. 37-28540-01
Docket No. 030-31765
EA No. 93-006

Oncology Services Corporation
ATTN: Douglas R. Colkitt, M.D.
President
110 Regent Court, Suite 100
State College, Pennsylvania 16801

SUBJECT: RELAXATION OF ORDER SUSPENDING LICENSE

Dear Dr. Colkitt:

This letter refers to our order suspending the above named License (Order) issued January 20, 1993 to Oncology Services Corporation, and to the request for relaxation of the Order submitted via facsimile on March 23, 1993 from your Counsel, Marcy L. Colkitt, Esquire. You requested the treatment of six additional patients who previously have not had high dose rate (HDR) treatment. You indicated that the six patients will be treated at the Greater Harrisburg Cancer Center (GHCC) by the Medical Director, Abdurrahman Unal, M.D. In a telephone conversation between Dr. Unal and Mr. Richard Cooper and Dr. Mohamed M. Shanbaky on March 23, 1993, Dr. Unal stated that he would provide this office with additional information regarding the patients' need for the requested HDR treatments. Dr. Unal also stated that information would also be provided by the referring physicians requesting that these patients be treated at GHCC. Dr. Unal informed Mr. Cooper that the earliest date for proposed patient treatment would be March 29, 1993.

Dr. Unal informed Region I by facsimile on March 25, 1993, that he personally will supervise the treatment of these patients and will be, along with the facility physicist, present at the HDR console area during patient treatment.

Based on our evaluation of the information provided in the March 23, 1993 submittal, information from the patients' referring physicians dated March 25, 1993, and the information provided by Dr. Unal dated March 24, 1993 and March 25, 1993, we find that good cause is demonstrated for HDR treatment of the six patients requested to be treated at GHCC.

Therefore, in accordance with your March 23, 1993 request, and pursuant to Section VI of the Order, Section VI, paragraph 2 of the Order is amended to add the following:

The licensee may treat the six patients at the Greater Harrisburg Cancer Center for which relief was requested on March 23, 1993.

All other provisions of the January 20, 1993 Order remain in effect. Therefore, in accordance with the Order, although GHCC may be treating new patients at the specific requests of referring physicians, it is not soliciting new patients for HDR treatment.

If you have any questions regarding this matter, please contact Mr. Richard Cooper of my staff at (215) 337-5281.

Sincerely,

Thomas T. Martin
Regional Administrator

cc:
Public Document Room (PDR)
Nuclear Safety Information Center (NSIC)
State of New Jersey
Commonwealth of Pennsylvania
State of Ohio

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

APR 02 1993

License No. 37-28540-01
Docket No. 030-31765
Control No. 117698

Oncology Services Corporation
ATTN: Douglas R. Colkitt, M.D.
President
775 South Arlington Avenue
Harrisburg, Pennsylvania 17109

Dear Dr. Colkitt:

This refers to your letter dated February 5, 1993 requesting that your NRC License No. 37-28540-01 be amended to change the Radiation Safety Officer from David E. Cunningham, Ph.D. to Bernard Rogers, M.D. Your license amendment request was also augmented by information provided in your letters dated March 26, 1993 and March 31, 1993. Based on the information you provided, your license has been amended as requested.

You should note that the only changes made to your License are the changing of your Radiation Safety Officer to Bernard Rogers, M.D. in Condition 11 and the deletion of Item C of License Condition 13. In your March 31, 1993 letter you implied that by deleting Item C of License Condition 13, this will also delete Item A. You should note that this is not the case, since installation, relocation, or removal of high dose after loader units containing sources are required to be performed only by persons specifically licensed by the Commission or an Agreement State. Item A of License Condition 13 has not been changed and remains as originally stated in the license. You should also note that your program continues to be under the restrictions indicated in the Order Suspending License issued to you on January 20, 1993.

Please find enclosed an amendment to your NRC Material License.

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or questions, please notify the Region I Material Licensing Section, (215) 337-5093, so that we can provide appropriate corrections and answers.

9305170193 2pp.

Please be advised that you must conduct your program involving licensed radioactive materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, please note the items in the enclosed, "Requirements for Materials Licensees."

Since serious consequences to employees and the public can result from failure to comply with NRC requirements, the NRC expects licensees to pay meticulous attention to detail and to achieve the high standard of compliance which the NRC expects of its licensees.

You will be periodically inspected by NRC. A fee may be charged for inspections in accordance with 10 CFR Part 170. Failure to conduct your program safely and in accordance with NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC will result in prompt and vigorous enforcement action against you. This could include issuance of a notice of violation, or in case of serious violations, an 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, 10 CFR Part 2, Appendix C.

We expect that you will operate a safe and effective licensed program.

Sincerely,

Thomas K. Thompson

Thomas K. Thompson
Senior Health Physicist
Nuclear Materials Safety Branch
Division of Radiation Safety
and Safeguards

Enclosures:
1. Amendment No. 04
2. Requirements for Materials Licensees
3. Notice for Medical Radiation Safety Officers

NRC FORM 374
(10-89)

U.S. NUCLEAR REGULATORY COMMISSION

MATERIALS LICENSE

Amendment No. 04

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. Oncology Services Corporation	In accordance with letter dated February 5, 1993 and March 31, 1993, 3. License number 37-28540-01 is amended in its entirety to read as follows:
2. 775 South Arlington Avenue Harrisburg, Pennsylvania 17109	4. Expiration date August 31, 1995
	5. Docket or Reference No 030-31765

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. Iridium 192	A. Sealed sources (Byk Mallinckrodt Model No. GM 252.20-001 or RTS Technology Model No. 722)	A. Not to exceed 11 curies per source and 132 curies total
Iridium 192	B. Sealed sources (Byk Mallinckrodt Model No. GM 212.01-009 or RTS Technology Model No. 721)	B. Not to exceed 11 curies per source and 132 curies total
C. Iridium 192	C. Sealed sources (Omnitron International Model SL-777)	C. Not to exceed 11 curies per source and 132 curies total
D. Iridium 192	D. Sealed sources (Byk Mallinckrodt Model No. GI L BV)	D. Not to exceed 11 curies per source and 132 curies total

9. Authorized use

A. One source per device for use in an Isotopen-Technik Dr. Sauerwein GmbH Gamma Med IIi remote after loading brachytherapy device for the treatment of humans. One source per device in its shipping container as necessary to the replacement of the source in the irradiation device only.

B. One source per device for use in an Isotopen-Technik Dr. Sauerwein GmbH Gamma Med 12i remote after loading brachytherapy device for the treatment of humans. One source per device in its shipping container as necessary to the replacement of the source in the irradiation device only.

C. One source per device for use in an Omnitron 2000 remote after loading brachytherapy device for the treatment of humans. One source per device in its shipping container as necessary to the replacement of the source in the irradiation device only.

One source per device for use in a Nucleotron MicroSelectron-HDR remote after loading brachytherapy device for the treatment of humans. One source per device in its shipping container as necessary to the replacement of the source in the irradition device only.

CONDITIONS

10. Location of use: Harrisburg Cancer Center, 775 South Arlington Avenue, Harrisburg, Pennsylvania; Life Care Center, R. D. #1, Sandy Lake Road, Stoneboro, Pennsylvania; Greater Pittsburgh Cancer Center, 1145 Bower Hill Road Suite 105, Pittsburgh, Pennsylvania; Exton Cancer Center, 460 Creamery Way, Suite B, Exton Pennsylvania; Indiana Regional Cancer Center 877 Hospital Road, Indiana, Pennsylvania; Mahoning Valley Cancer Center, 800 Mahoning Street, Suite E, Lehighton, Pennsylvania.

11. Radiation Safety Officer: Bernard R. Rogers, M.D.

12.

Authorized Users:	Material and Use:
Abdurraham Unal, M.D.	Iridium-192 in a brachytherapy remote after loader for the treatment of humans
Gilbert Lawrence, M.D.	Iridium-192 in a brachytherapy remote after loader for the treatment of humans
Norman Williams, M.D.	Iridium-192 in a brachytherapy remote after loader for the treatment of humans
Richard M. Yelovich, M.D.	Iridium-192 in a brachytherapy remote after loader for the treatment of humans
James E. Bauer, M.D.	Iridium-192 in a brachytherapy remote after loader for the treatment of humans
David J. Moylan, III, M.D.	Iridium-192 in a brachytherapy remote after loader for the treatment of humans
Bernard R. Rogers, M.D.	Iridium-192 in a brachytherapy remote after loader for the treatment of humans
Roger P. Tokars, M.D.	Iridium-192 in a brachytherapy remote after loader for the treatment of humans

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

A. Installation, relocation, or removal of high dose after loader units containing sources.

B. Any maintenance or repair operations on a high dose after loader unit involving work on any mechanism that could expose the source, reduce the shielding around the source, or compromise the safety of the unit and result in increased radiation levels.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number 37-28540-01

Docket or Reference number 030-31765

Amendment No. 04

(Continued) CONDITIONS

14 Any changes made in the treatment room shielding, location of the high dose after loader (HDR) unit within the treatment room, or use of the unit that could result in increased radiation levels in areas outside the HDR treatment room shall be evaluated by a radiation survey and results reported to the Commission within 30 days following completion of the change(s).

15. The licensee may transport licensed material in accordance with the provisions of 10 CFR 71, "Packaging and Transportation of Radioactive Material."

16. Persons performing calibrations on high dose after loading units and establishing procedures for (and reviewing the results of) spot check measurements shall meet the training qualifications stated in 10 CFR 35.961(a).

17. 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 June 1, 1990
B. Letter dated August 2, 1990
C. Letter dated October 3, 1990
D. Letter dated June 20, 1991
E. Letter dated July 9, 1991
F. Letter dated August 16, 1991
G. Paragraph 3 of Item 1 of the letter dated June 10, 1992
H. Letter dated February 5, 1993
I. Letter dated March 26, 1993

* * * * *

For the U.S. Nuclear Regulatory Commission

Date APR 02 1993

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

MS-16
L-1

RADIATION ONCOLOGY
CENTRE COMMUNITY HOSPITAL
1800 East Park Avenue
State College, PA 16803
814-234-6726

RADIATION ONCOLOGISTS:
Douglas R. Colkitt, M.D.
Jerry Derdel, M.D.
Bernard R. Rogers, M.D.

March 31, 1993

U.S. Nuclear Regulatory Commision
Region I
Attn: Dr. Mohamed Shanbaky
Chief Medical Inspection Section

RE: CONTROL #117698

Dear Dr. Shanbaky

Pursuant to our conversation of March 31, 1993, please make the following change to our amendment.

Please delete Item C of Part 13 on Page 2. This will also delete Item A. We do not plan mobile services or source changes by Oncology Services personnel.

Sincerely yours,

BRRogers

BERNARD R. ROGERS, M.D.
Director of Brachytherapy
Oncology Services

BRR/cmf

cc: Dr. Douglas Colkitt

Form no. RO-028 Rev. 3/92

117698
3-31-93

"SECTION COPY"

9305170200 1p

ONCOLOGY SERVICES CORPORATION

110 Regent Court • Suite 100 • State College, PA • 16801 814-238-0375 • 800-628-9076 • Fax: 814-238-8069

030-31765

February 5, 1993

Overnight UPS

U.S. Nuclear Regulatory Commission
Richard W. Cooper, II, Director
Division of Radiation Safety
and Safeguards, Region I
475 Allendale Road
King of Prussia, PA 19406

RE: License 37-28540-01

Dear Mr. Cooper:

Per our meeting of January 27, 1993, Oncology Services Corporation requests an amendment to NRC License No. 37-28540-01 to change the Radiation Safety Officer from David E. Cunningham, Ph.D. to Bernard Rogers, M.D. Dr. Rogers' credentials, which were presented at the meeting, are included for completeness. Dr. Rogers is familiar with the terms and conditions of the license and the applicable regulations. Moreover, Dr. Rogers has been an authorized user on various NRC licenses for brachytherapy since 1976.

Oncology Services Corporation seeks to operate HDR treatment under the license at two centers: The Greater Harrisburg Cancer Center and the Greater Pittsburgh Cancer Center.

OSC has also retained Robert Gallaghar, CHP as a Regulatory Issues Consultant. Enclosed are copies of Mr. Gallaghar's resume and a summary of his Part 35 regulatory compliance experience.

As RSO, Dr. Rogers would visit both the Pittsburgh and Harrisburg facilities once per week for the next ten weeks. At that point his on-site commmitment would be re-evaluated. As a Regulatory Issues Consultant, Mr. Gallaghar will visit both the Pittsburgh and Harrisburg facilities once per week for the next five weeks and once per month thereafter.

The amendment fee of $460.00 is enclosed.

Thank you for your continued cooperation and assistance in this matter.

Respectfully,

Douglas R. Colkitt, M.D.

DRC:amh
Enclosures

cc: B. Rogers, M.D.
D. Cunningham, Ph.D.
R. Gallaghar
K. Kearney, Esquire(w/encl.)

Curriculum Vitae

Robert G. Gallaghar
17 Park Avenue
East Greenbush, NY 12061

OFFICES: Pittsburgh, PA (412) 835-9555
Washington, DC (301) 469-8087
Albany, NY (518) 477-7974

SUMMARY OF QUALIFICATIONS AND EXPERIENCE

R.G. Gallaghar combines more than 40 years of professional health physics work with about 30 years of top management experience. He has been an officer and a director of 6 corporations, a hospital, several technical societies, trade associations, a chamber of commerce and founded a library on atomic energy. A large part of his professional work has been devoted to medical aspects of radiological safety and loss prevention. The National Institutes of Occupational Health (NIOSH) contracted to have him prepare 7 volumes summarizing the first nationwide occupational health and safety study of about 6,000 hospitals over a 10 year period.

In addition to his contract with NIOSH, he has provided contract studies for OSHA, US-EPA, NRC , and NY State Environmental Conservation. He has managed comprehensive loss prevention and compliance audits for 3 insurance companies involving several hundred hospitals in the U.S.. In 1992, he completed audits of Amersham, Medi & Physics and Babcock-Wilcox's commercial nuclear operations.

Bob is currently certified by the following professional boards:

* American Board of Health Physics - Certified Health Physicist (CHP) to 1995 - (Comprehensive Practice)
* American Board of Industrial Hygiene - Certified Industrial Hygienist (CIH) to 1994
* Board of Safety Professionals: Certified Safety Professional (CSP) to 1994
* International Hazard Control Management Certification Board -Certified Hazard Control Manager (CHCM) to 12/93
* Commonwealth of Massachusetts - Registered Professional Engineer (PE) to 7/94

He has been named as Radiation Safety Officer, on 6 NRC or State licenses for medical, industrial, research and federal agency use of byproduct, source and special nuclear materials. His qualifications and experience as RSO relative to 10CFR Part 35 Medical Use of Byproduct Material are attached along with description of his education and professional association, and employment. Further details and names of references are available upon request.

Feb 1992

Qualifications and Experience of Robert G. Gallaghar Re: 10CFR Part 35 Medical Use of Byproduct aterial, Subpart: "Training and Experience"

35.900 Radiation Safety Officer...certified by

(a) (1) American Board of Health Physics in Comprehensive Health Physics. R.G. Gallaghar has been recertified through 1995. (He is also certified by 3 other professional boards that have recertified him through 1994 or 1995)

(b) Has had classroom and laboratory training and experience as follows:
(1) 200 hours of classroom and laboratory training that includes.

(i) Radiation physics and instrumentation.
(ii) Radiation protection.
(iii) Mathematics pertaining to the use and measurement of radioactivity;
(iv) Radiation biology;
(v) Radiopharmaceutical chemistry;

NOTE: In addition R.G. Gallaghar has taught the 5 topics listed above to graduate and post graduate students including MD, Ph.D and ScD at the following:

- Harvard University, Graduate School of Public Health 1956-60 (under Dr. P. Drinker & Dr. Leslie Silverman)
- University of Pittsburgh, Graduate School of Public Health, Dept. of Occupational Health as Assistant Adjunct Professor under Neil Wald, MD
- Guest lectureships at University N. Carolina, GSPH Massachusetts Institute of Technology and the University of California (Berkeley) and the University of Cincinnati, College of Medicine

(2) One year of full time experience as a radiation safety technologist at a medical institution under the supervision of the individual identified as the Radiation Safety Officer on a Commission or Agreement State License that authorizes the medical use of byproduct material;

Robert G. Gallaghar served over 2 years under Dr. Charles Robinson, RSO, Tufts University, Medical, Dental College, Boston, MA

Medical Health Physics Professional Experience - R. G. Gallaghar, CHP
U.S. Public Health Service; Bureau of Radiological Health
Washington, DC (1949-1950) Cincinnati, OH (1950-1954)

Radiological Health Training Section: Preparation, organization, presentation to USPHS, Coast Guard, Marine Hospital Staff, State and local public health officials. Assisted in preparation
With regard to 10 CFR 35 Subpart J 35.900 (2)(c), Robert G. Gallaghar has been identified as Radiation Safety Officer in the following licenses:

Albany Associates in Cardiology, NY D. H license
Applied Health Physics, Inc. 3 NRC Licenses
Capital Materials Testing - NY Dept. of Labor
Nuclear Science & Engineering Corp., NRC
Liberty Mutual Insurance Co, NRC/AEC

Medical Health Physics Professional Experience - R. G. Gallaghar, CHP

U.S. Public Health Service; Bureau of Radiological Health, Washington, DC (1949-1950) Cincinnati, OH (1950-1954)

Radiological Health Training Section. Preparation, organization, presentation to USPHS, Coast Guard, Marine Hospital Staff, State and local public health officials. Assisted in preparation - Radiological Health Handbook.

Occupational Health Branch, Bureau of State Services
Managed film badge service to U.S. Government hospitals, embassies, federal prisons and PHS staff occupationally exposed to radiation. Performed health physics surveys at USPHS hospitals (Cleveland, San Francisco, San Diego, Baltimore, Marthas Vineyard). Lead PHS campaigns to eliminate the use of radium in brachytherapy in U.S. hospitals, especially government owned. Presented talks to medical associations, hospital staffs and wrote several articles on hazards of medical use of radium. Developed and published a widely used method to test for leaking medical radium applicators (referenced in NCRP Report No. 40 "Protection Against Radiation from Brachytherapy Sources"). Performed occupational and environmental surveys for Baltimore City Health Department of Kelly Clinic. Provided medical, health physics services to Cincinnati and Ohio State Officials following the famous radium accident involving 287 people-directed decontaminations of affected persons and assisted. Eugene L. Saenyer MD in medical evaluation. Later worked with Dr. Saenger at Cincinnati General Hospital, Childrens Hospital and at his medical office. Served at Jewish Hospital under Sol. Tapletts, MD in surgery on therapeutic administration of gold-198 for cancer treatment. Provided professional help on deliberate ingestion of radium chloride by a young women. Worked at several Cincinnati hospitals doing routine health physics work on diagnostic and therapeutic uses of X-ray Dr. Saenger and I have published numerous articles such as the text Medical Aspects of Radiation Accidents, US-AEC; "Radium Capsules and their Associated Hazards" R.G. Gallaghar, E.L. Saenger. Am. J. Roentgen, Radiation Therapy & Nuclear Medicine Vol 77 No. 3, March, 1957.

Liberty Mutual Insurance Company, Boston, MA (1954-1960)

Provided health physics support services to insured hospitals, clinics and medical specialists in US and Canada. Performed health physics surveys about 100 medical facilities including management of radium accidents evaluation and control at :

Tourø Infirmary, New Orleans, LA
Sister of Mercy Hospital, San Diego, CA
Lynn Hospital, Lynn, MA
Johnstown Memorial Hospital, Johnstown, NY

Named in LMIC's Byproduct Materials license as user and as Radiation Safety Officer.

While working at LMIC Research Center in Hopkinton, MA, I designed, and subsequently manufactured and sold the following equipment for use in brachytherapy.

Periscopic shield 2" Pb thick sides, light, 2 mirrors to give optically correct viewing of brachytherapy applicators and identify radioactive capsules.

Shield/Sterilizer, rotating for storage of individual capsules with central chamber for safe storage of loaded Ernst or other applicator, equipped with locking mechanism.

Nuclear Science - Engineering Corp., Pittsburgh, PA (1960-1662)
Assistant Manger and Radiation Safety Officer named on NRC license which included preparation and distribution of radiopharmaceuticals. RGG managed bioassay laboratory services as well as other health physics, environmental and instrument services for government agencies, medical and industrial clients.

Applied Health Physics Inc., President and RSO.
Providing a broad spectrum of health physics services to the following medical facilities:

Abbott Hospitals, Inc.	Vega Alta	PR 00762
Aliquippa Hospital	Aliquippa	PA 15001
Allegheny General Hospital	Pittsburgh	PA 15212
Allegheny Valley Hospital	Natrona Heights	PA 15065
American Oncologic Hosp.	Philadelphia	PA 19111
Armstrong Memorial Hospital	Kittanning	PA 16201
Beth Israel Hospital	Passaic	NJ 07055
Braddock General Hospital	Braddock	PA 15104
Brookville Hospital	Brookville	PA 15825
Brownsville General Hospital	Brownsville	PA 15417
Bryn Mawr Hospital	Bryn Mawr	PA 19010
Canonsburg General Hospital	Canonsburg	PA 15317
Central Medical Center	New Kensington	PA 15068
City Hospital	Bellaire	OH 43906
Clinton Memorial Hospital	Wilmington	OH 45177
Conemaugh Valley Memorial Hosp	Johnstown	PA 15905-4398
Deaconess Hospital	Cincinnati	OH 45219
Detroit Osteopathic Hosp.Corp.	Southfield	MI 48086-5153
Divine Providence Hospital	Pittsburgh	PA 15212
Doctors Hospital	Columbus	OH 43201
Dubois Regional Medical Center	Dubois	PA 15801-0447
Ellwood City Hospital	Ellwood City	PA 16117-1399
Forbes Regional Health Center	Monroeville	PA 15146
Franklin Regional Medical Ctr.	Franklin	PA 16323
Greenville Regional Hospital	Greenville	PA 16125
Highlands Regional Medical Ctr	Prestonburg	KY 41653
Hinsdale Hospital	Hinsdale	IL 60521
Jameson Memorial Hospital	New Castle	PA 16105-2595
Jeannette Dist. Memorial Hosp.	Jeannette	PA 15644
Latrobe Area Hospital	Latrobe	PA 15650
Lee Hospital	Johnstown	PA 15901
McCullough-Hyde Memorial Hosp.	Oxford	OH 45056
Meadville Medical Center	Meadville	PA 16335
Mercy Hospital	Pittsburgh	PA 15219
Mercy Hospital Fairfield	Fairfield	OH 45014
Mercy Hospital Of Johnstown	Johnstown	PA 15905
Mercy Hospital Of Ohio	Hamilton	OH 45012
Middletown Regional Hospital	Middletown	OH 45044-4898
Monongahela Valley Hospital	Monongahela	PA 15063
Monsour Medical Center	Jeannette	PA 15644
North Hills Passavant Hospital	Pittsburgh	PA 15237
Northwest Medical Center	Franklin	PA 16323
Northwest Medical Center	Oil City	PA 16301
Ohio Valley Hospital	Steubenville	OH 43952
Oswego Hospital	Oswego	NY 13126
Phillipsburg State Gen. Hosp.	Phillipsburg	PA D
Preston Memorial Hospital	Kingwood	WV 26537
Punxsutawney Area Hospital	Punxsutawney	PA 15767
Robert Packer Hospital	Sayre	PA 18840
Ryder Memorial Hospital	Humacao	PR 00661
San Juan City Hospital	Condado	PR 00907
Sewickley Valley Hospital	Sewickley	PA 15143
Shadyside Hospital	Pittsburgh	PA 15232
Shenango Valley Medical Center	Farrell	PA 16121
St. Clair Hospital	Pittsburgh	PA 15243
St. Francis General Hospital	Pittsburgh	PA 15201
St. Francis Medical Center	Pittsburgh	PA 15215
St. Johns Hospital	Cleveland	OH 44102
St. Margaret Memorial Hospital	Pittsburgh	PA 15215
St. Thomas Hospital	St. Thomas	US 00801

Suburban General Hospital	Bellevue	PA 15202
The Toledo Hospital	Toledo	OH 43606
Tioga General Hospital	Waverly	NY 14892
Titusville Hospital	Titusville	PA 16354
Uniontown Hospital	Uniontown	PA 15401
Univ. Of Pgh. Medical Center	Pittsburgh	PA 15203
University Hosp. of Cleveland	Cleveland	OH 44106
V. A. Medical Center	Cincinnati	OH 45220
V. A. Medical Center	Pittsburgh	PA 15206
Warren General Hospital	Warren	PA 16365
Washington Hospital	Washington	PA 15301
West Penn Hospital	Pittsburgh	PA 15224
Wilkes Barre General Hospital	Wilkes Barre	PA 18774

Curriculum Vitae

Bernard R. Rogers, M.D.

EDUCATION AND TRAINING

B.S. 1966	North Carolina Central University Durham, North Carolina Chemistry
M.D. 1971	Meharry Medical College Nashville, Tennessee
Internship 7/71-6/72	Youngstown Hospital Association Youngstown, Ohio
Residency 7/72-6/73	Youngstown Hospital Association Youngstown, Ohio Pathology
Residency 7/73-6/76	University of Minnesota Hospitals Minneapolis, Minnesota Radiation Therapy

LICENSURE AND CERTIFICATION

Certification	Board Certified, American Board of Radiology and Radiation Oncology December, 1977
State Licenses	California, Georgia, Illinois, Maine, Minnesota, Pennsylvania, Tennessee

PROFESSIONAL EXPERIENCE

1991-Present	Clinical Director of Brachytherapy Oncology Services Corporation State College, PA
November 1990- February 1991	Visiting Fellow in Interstitial Brachytherapy and Hypertension Long Beach Memorial Hospital Long Beach, CA
1991	Visiting Fellow in High Dose Brachytherapy Evansville Cancer Center Evansville, Indiana

10/88-10/90	Kankakee Radiation Therapy Center, Medical Director Kankakee, Illinois
8/87-1988	Locum Tenens
6/86-7/87	Central Maine Medical Center Lewiston, Maine Associate, Radiation Oncology Private Practice
6/85-5/86	Locum Tenens
7/76-5/85	St. Cloud, Minnesota Radiation Oncology Private Practice

MEMBERSHIPS

American Society of Therapeutic Radiologists and Oncologists
American Endocurietherapy Society
North Central Cancer Treatment Group (NCCTG) of the Mayo Clinic 1978-1985

PUBLICATION:
ABSTRACT:

Radiation Therapy and BCNU North Central Cancer Treatment Group (Mayo Clinic 1986)

Curriculum Vitae

Robert G. Gallaghar
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East Greenbush, New York 12061

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Washington, DC (301)469-8087
Albany, NY (518)477-7974
1-800-DECON-IT

SUMMARY OF QUALIFICATIONS AND EXPERIENCE

R. G. ("Bob") Gallaghar is regarded as an authority on occupational and environmental protection including emergency preparedness, damage control and a broad area of risk evaluation practices that focus upon loss prevention. He combines more than thirty years of top management experience and professional work in radiological safety (health physics), occupational and environmental protection. Bob has founded several corporations, technical associations and a library on atomic energy. He has been an officer and director of six companies, four hospitals, several technical societies, a trade association, a chamber of commerce and taught graduate courses at three universities.

More than 800 organizations in the United States, Canada and Europe have been clients of companies he has managed. These include Westinghouse, Du Pont, IBM, Eastman Kodak, Mayo Clinic, GE, AT&T, as well as federal and state agencies. He has been very successful as an expert witness. He lectures in the United States and Canada on emergency planning, control of radioactive contamination, hospital safety, medical malpractice prevention, decontamination, management and disposal of hazardous wastes. Currently, he concentrates on development and the use of independent audits coupled with the systems approach to loss prevention. His current lecture topics are:

- "Corporate Myopia"
- "Lessons Learned at Chernobyl"
- "Radioactivity in MY Backyard?!"
- "Radiation a Factor in YOUR Life"
- "Environmental, Social and Economic Risks Associated With Underground Storage Tanks"

Bob is a registered professional engineer(PE) and certified by four professional boards. He has dozens of articles and chapters published in technical journals. He has directed, edited and written many reports on special studies as part of contracts with National Institute of Occupational Safety & Health (NIOSH), U.S. Environmental Protection Agency (EPA), U.S. Nuclear Regulatory Commission (US-NRC), New York Dept. of Environmental Conservation and other federal and state agencies. He was a member of the U.S. delegation to USSR for nuclear decontamination and radiation waste management of Chernobyl. He has appeared on a number of radio and television programs and been interviewed by newspapers and magazines in the U.S., Canada, U.K. and USSR.

Rev. 11/92

EDUCATION:

Stanford University (4 years).....Biological Science(AB)
Western Maryland College (1 year).....Biology
Hahnemann Medical College (1 year).....Medicine
Oak Ridge Institute of Nuclear Studies &
Oak Ridge National Laboratory (1 year)....Health Physics
(National Research Council/U.S. Atomic Energy Commission Post Graduate Fellowship)
University of Cincinnati (1 year).....Liberal Arts

PROFESSIONAL CERTIFICATIONS AND HONORS:

CHP, Certified Health Physicist by the American Board of Health Physics
(Recertified 1989, #69-31)
CIH, Certified Industrial Hygienist by the American Board of Industrial Hygiene
(Recertified 9/92 to 12/31/92, #439)
CSP, Certified Safety Professional by Board of Certified Safety Professionals
PE, Registered Professional Engineer Massachusetts (1961 to Present), #15436
CHCM, Certified Hazard Control Manager by International Hazard Control
Management Certification Board
Sigma Xi (life member National Honorary Research Society)

PROFESSIONAL ACTIVITIES:

Air & Waste Management Association
American Academy of Health Physics
American Academy of Industrial Hygiene
American Association of Radon Scientists and Technologies (1989)
American Chemical Society (1949 - 1952)
American Industrial Hygiene Association
President: Pittsburgh Chapter
American Nuclear Society
American Public Health Association
American Society for Nondestructive Testing (1965 - 1970)
American Society of Safety Engineers
Cincinnati Radiation Society, Founder and Chairman (1950 - 1954)
The Engineering Society of Cincinnati (1951 - 1954)
Health Physics Society (Charter Member 1956 to Present)
Treasurer (2 Terms) - Board of Directors 3 years
President: Northeastern New York Chapter
Western Pennsylvania Chapter
Hospital Association of Western Pennsylvania
National Safety Council
National Safety Management Society
New York Academy of Science
New York Athletic Club
Assistant Professor, Graduate School of Public Health,
University of Pittsburgh, PA (1970)

MILITARY SERVICE:

U.S. Army, active duty: 1942 - 1945 (Infantry; Army Specialized Training Program)

U.S. Public Health Service, active duty: 1949 - 1954;
Promoted to Captain in 1979. (Inactive Reserve: 1954 to Present.)

EXPERIENCE:

DECONtamination International, Inc., Bethel Park, PA (1989 to Present)

Founder, Chairman and a major shareholder of this environmental remediation service company which does business as "DECON International, Inc." This company is the natural outgrowth of the clean-up and waste disposal work which Applied Health Physics, Inc. (AHP) has been doing since 1962. DECON International, Inc. (DECON) was formed to expand the use of decontamination and waste management techniques that Robert G. Gallagher ("RG") innovated in his graduate work at the Oak Ridge National Laboratory; perfected through research and development projects financed by the Bureau of Radiological Health of the U.S. Public Health Service, Liberty Mutual Insurance Company and Nuclear Science and Engineering Corporation. His decontamination skills have been utilized for 30 years by AHP to effectively manage over a hundred decontamination jobs that involved beryllium, arsenic, mercury, asbestos, etc., as well as, radioactive materials. However, "Health Physics" does not pertain to working with nonradioactive materials. Thus, to expand our commercial opportunities into the $400 billion dollar decontamination market, RG instituted a corporate reorganization designed to reduce conflict of interest within AHP and to provide greater professional growth for and profitability of AHP. The creation of DECON has enabled us to expand the commercialization of AHP's proven risk management skills to a very broad scope of environmental problems such as the decontamination of soil and water contamination caused by leaking underground storage tanks. As Chairman and 50% owner, "RG" insists that all corporate efforts adhere to the basic principles of the health physics profession, namely to audit, identify, control and to decontaminate environmental risks to levels that are as low as reasonably achievable (ALARA).

Applied Health Physics, Inc., Pittsburgh, PA, Albany, NY & Washington, DC (1962 to Present)

Chairman, President and founder of this professional radiological health and safety service firm. Directs marketing, business development and technical services which the firm furnishes to industrial and medical users of radiation as well as other hazardous materials. Designed and developed many of the safety services and specialized products and equipment offered by the company. Participates in the company's radiological safety training programs, radiation surveys and decontamination and waste disposal operations. Conducted comprehensive OSHA-type audits for the New York Department of Environmental Conservation Agency, and currently conducts training for hazardous waste compliance inspectors. Currently owns more than 50% of the outstanding stock in this 30 year old company.

Venture, Inc., Bethel Park, PA (1968 to Present)

President and Treasurer of Venture, Inc., a firm engaged in precious metal recovery and commercial real estate investments.

Corporation, Albany, NY (1979 to 1980)

Manager, Health, Safety and Security. Reorganized and directed occupational health, safety, environmental protection and security programs for manufacturing operations involving production of depleted uranium armor piercing projectiles, radiation shields and counter-weight for aircraft and missiles. Supervised health physics, medical, industrial hygiene, fire and plant protection personnel. Also managed licenses and permits for domestic manufacturing and export of source and by-product materials and waste disposal. Provided safety training and technical consultation services to employees and to customers.

Hospital Safety, Inc., Bethel Park, PA (1975 to 1979)

President and founder of this firm that provided a unique service to self-insured hospitals. HSI's objective was to prevent medical malpractice claims and to meet the hospital industry's need for experienced and effective means to reduce injuries, illnesses and absenteeism of hospital workers as well as to train hospital employees in proven loss prevention methods which would apply to their jobs in the hospital.

Nuclear Science & Engineering Corp., Pittsburgh, PA (1960 to 1962)

Assistant Manager, Director of the Health Physics Division. Supervised all of NSEC's health and safety activities. Responsible for the planning and direction of the health physics programs for approximately fifty industrial and governmental clients. Supervised such commercial services as bioassay, leak testing, decontamination, instrument repair and calibration. Managed environmental radioactivity monitoring programs at six nuclear power plants.

University of Pittsburgh, Pittsburgh, PA (1960 to 1970)

Originally appointed to the faculty of the Graduate School of Public Health as Adjunct Assistant Professor of Industrial Hygiene with special responsibility for the design and presentation of lectures, laboratory and field programs for the Department of Occupational Health. Later, joined the University's Dept. of Radiation Health as Adjunct Assistant Professor of Health Physics. Served in a part-time capacity to conduct field studies and supervise certain research projects by graduate students.

Liberty Mutual Insurance Co., Boston, MA (1954 to 1960)

Responsible for Health Physics Services. Assisted policyholders in solving a variety of radiological problems and worked with the insurance industry to evaluate many new uses of radiation and nuclear energy. Trained insurance engineers and industrial hygienists in the theory and techniques of performing radiological safety surveys. Served as a member of several technical committees of the Nuclear Energy Liability Insurance Association (NELIA) and helped develop inspection criteria for use in evaluating nuclear energy projects. Considerable experience was gained in damage control and decontamination work following radiation accidents. Placed in charge of the Radiation Laboratory and Calibration Facility at Liberty Mutual's Research Center in Hopkington, Massachusetts and conducted research on safety of encapsulated radioisotope sources and decontamination techniques.

Harvard University, Cambridge, MA (1956 to 1960)

Appointed Lecturer on Radiological Health at the Graduate School of Public Health. Liberty Mutual cooperated by permitting Mr. Gallaghar to accept the appointment and to present lectures and laboratory sessions over a period of several years at Harvard. He also lectured at Massachusetts Institute of Technology (MIT), the Post Graduate Medical School of New York University (NYU), University of California (Berkeley) and University of North Carolina during this period of time.

U.S. Public Health Service, Washington, DC, Cincinnati, OH
Active Duty (1949 to 1954), Inactive Reserve (1954 to Present)

Received commission as Lieutenant J.G. grade and served as Health Physicist for U.S. Public Health Service. During this time was a member of the faculty of USPHS, Radiological Health Training Branch. Acted as consultant to hospitals, state and local governments, industrial concerns, and several research and educational institutions. During the nuclear weapons tests in 1951, was assigned to Los Alamos Scientific Laboratory in connection with fallout monitoring from ground zero to 50-75 miles downwind. Work ranged from emergency planning to direct supervision of emergency operations following several accidents involving radioisotopes. While in the Public Health Service, conducted research projects concerning long-term use of radium and decontamination methods. Was promoted to rank of Captain in 1979 as a reserve (inactive) officer.

U.S. Quartermaster Research and Development Laboratories (1948)

Employed as a Microbiologist and later as a Research Chemist. Helped establish tropical deterioration methods of evaluation of fungicides in paints, plastics and paper. Served on the National Research Council's research group investigating tropical deterioration and helped select and produce certain strains of fungi for test purposes. Member, Laboratory Safety Committee.

T.B. Hunter, San Francisco and Ballinger & Co., Philadelphia, PA (1947 to 1948)

Draftsman, junior engineer and laboratory design specialist. Helped design U.S. QMC R&D Lab.

Publications:

"Preparation of an Industry Profile: Study of Ionizing Radiation." J. Birdsong, editor, Centaur Associates, Inc., Washington, DC, March 1980. A comprehensive study of U.S. workers potentially exposed to radiation and evaluation of economic impacts of proposed reductions in permissible radiation limits. "An Economic Study of the Radionuclides Industry." J. Birdsong, editor, Centaur Associates, Inc., Washington, DC, February, 1980. A comprehensive study of the economic activity of 76 segments of the nuclear industry in the USA during 1967-1978. Mr. Gallaghar provided technical guidance, collected and analyzed data from 800 interviews from about 200 organizations. He reviewed current licensing and regulatory practices of state and federal agencies. This report was prepared for the U.S. Nuclear Regulatory Commission.

Volume I	Environmental Health & Safety Control
Volume II	Employee Health & Safety Statistics & Records
Volume III	Organization & Administration of Hospital Employees
Volume IV	Special Information

R. G. Gallaghar analyzed, edited and contributed a large number of sections in this series of reports of the first comprehensive study of the U.S. hospital industry. This work was done by Applied Health Physics, Inc. for the National Institute for Occupational Safety & Health (NIOSH), Public Health Service, U.S. Dept. of Health, Education & Welfare in 1974.

"Emergency Planning & Procedures" by R. G. Gallaghar, Handbook of Radioactive Nuclides, edited by Y. Wang, Published by Chemical Rubber Co., Cleveland, OH, June, 1969.

"Surface Contamination", edited by B. R. Fish. Published by Pergamon Press, LTD., London, W.I., 1967.

"Health Physics in Medical Applications", by R. G. Gallaghar and M. L. Martin. Atomics, Vol. 18, No. 1 (Jan./Feb.) 1965.

"Radiation Accidents & Emergencies in Medicine, Research & Industry." Edited by L. H. Lanzl, J. H. Pingel, and J. H. Rust. Published by C. C. Thomas, Springfield, IL 1965.

"Medical Aspects of Radiation Accidents", edited by E. L. Saenger. Published by U.S. Atomic Energy Commission, Supt. of Documents, U.S. Government Printing Office, Washington, DC 1963.

"Testing Radium Capsules for Radon Leakage" by R. G. Gallaghar, R. D. Evans and R. G. McAllister, Am. J. Roetg. Ra. Ther. & Nuclear Medicine, Vol., XC, No. 2 (Aug.) 1963.

"Thinking about Radioactivity?", by R. G. Gallaghar. Atomics, 1962.

"Radioisotope Hazards Evaluation", by R. G. Gallaghar. The National Insurance Buyer (July) 1961.

"In Plant Decontamination Hazards and Procedures", by R. G. Gallaghar. Proceedings of the Nuclear Energy Training Course for Insurance Personnel. Published by Braun-Brumfield, Inc., Ann Arbor, MI 1958.

"Radium Capsules & Their Associated Hazards", R. G. Gallaghar, E. L. Saenger, Am. J. Roetg. Rad. Ther. & Nuclear Med., Vol. 77, No. 3 (March) 1957.

"Going into Radiation?" by R. G. Gallaghar. Petroleum Processing (March) 1957.

"Long Term Radioactive Exposures, The Kelly Clinic Study", by R. G. Gallaghar, M. R. Zavon, H. N. Doyle. Baltimore Health News, Vol. 22, No. 4 (April) 1955.

"Radioactive Contamination in a Radium Therapy Clinic", by R. G. Gallaghar, M. R. Zavon, H. N. Doyle. Published in the Public Health Reports, Vol. 70, No. 7 (July) 1955.

"Automatic Sampler, Recorder" A. D. Hosey H. H. Jones O. C. Marsh, R. G. Gallaghar, Nucleonics, Vol. 12, (December) 1954.

"Firemen Must Be Protected Against Radiation Hazards", by R. G. Gallaghar, Occupational Health, Vol. 3 (March) 1953.

"Emergency Measures and Precautions in Radium Accidents", E. L. Saenger, R. G. Gallaghar, D. S. Anthony, P. S. Valear, of American Medical Association, Vol. 149, June 28, 1952.

Also, ten technical papers were published in QM Research Reports the official publications of the Department of Defense Office of the Quartermaster General, Military Planning Division Research and Development Branch. (1948-1949).

Publications in Process:

"Lessons Learned at Chernobyl" (for publication in U.S. delegation to USSR Report 7/90.

"Radioactivity in MY Backyard?" to be published 8/90

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Curriculum Vitae - Robert G. Gallaghar

"Environmental, Social and Economic Risks Associated with Underground Storage Tanks: Insurance and Current Impacts on Small Petroleum Marketers."

"Financial Impacts of Trials by Media": An analysis of direct and indirect costs incurred by TV expose of the environmental pollution problems at two manufacturing plants. This article describes the economic and sociological impacts of chronic low level radioactive contamination. It compares the reactions of top management of two international corporations and the results obtained as both companies responded to media reports of environmental risks by "stonewalling" versus "going public with facts".

"Loss Prevention Audits: The diagnosis and treatment of corporate myopis". An analysis of major financial and competitive losses that several multinational giants have experienced recently when environmental, occupational health and safety requirements were ignored. Values of annual audits of CPA's are compared with loss prevention audits by independent CSP's.

"Radiation Emergency Planning and Damage Control Procedures"

"Handbook Management of Radiation Protection Programs" of the CRC series, in Radiation Measurement and Protection, Allen Brodsky, ScD Editor-in-chief. Published by CRC Press, Inc. Boca Ratan, FL

"Financial Protection Against Radioactive Contamination: Insurance or Bonds?" R. G. Gallaghar and A. K. Gallaghar, CPCU.

Additional biographical information is contained in Who's Who in the East, Marquis, Inc., Chicago, IL; and American Men of Science, R.R. Bowker Co., New York (1965).

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ONCOLOGY SERVICES CORPORATION
110 REGENT COURT, SUITE 100
STATE COLLEGE, PA 16801

60-831/313

February 5, 1996

PAY TO THE ORDER OF Nuclear Regulatory Commission $ 460,00

Four Hundred and Sixty 00/100 DOLLARS

Commonwealth Bank
WEST
STATE COLLEGE, PA 16801

FOR License Amendment

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