

medi+physics®

MEDI-PHYSICS, INC., RICHMOND, CALIF.
SUBSIDIARY OF HOFFMANN-LA ROCHE INC.

December 11, 1985

U.S. Nuclear Regulatory Commission
Materials License Section
Region III
799 Roosevelt Rd.
Glen Ellyn, IL 60137

ATTN: Bruce S. Mallett, Ph.D.

Re: License #12-13813-01

Medi-Physics, Inc. requests amendment of License #12-13813-01 as follows:

- 1) Add to Condition 12 the following individuals:

Gary A. Baker
Mark A. Fraser
Christ Phillip Kanoles
Kenneth K. Kuhnle
Hal R. Westreich

Training and experience summaries are attached.

Please delete David J. Gallaher from Condition 12.

- 2) Under Item 9.C. Authorized Use, please change to "For possession, research and development, and distribution to persons authorized to possess the licensed material pursuant to the terms and conditions of a specific license issued by the NRC or an Agreement State.

Please find enclosed a check for one hundred and twenty dollars (\$120.00) to cover the amendment fee required pursuant to 10CFR, Part 170.

I would greatly appreciate your approving this amendment as soon as possible. If there are any questions regarding this request please contact me at (312)398-8400.

Sincerely,

MEDI-PHYSICS, INC.

Linda McLean
Linda McLean
Radiation Safety Officer
Arlington Heights

8604090378 860221
REG3 LIC30
12-13813-01 PDR

Applicant	Jan 2 1986
Check No.	48584
Amount	\$120.00
Type of Fee	Annual Fee
Date Check Recd	12/13/85
Received By	[Signature]

RECEIVED
DEC 19 1985
REGION III

85 DEC 30 AM 11

RECEIVED

DEC 18 1985

CONTROL NO. 80342

Curriculum Vitae

Gary Allan Baker

EDUCATION

B.S. Chemistry, University of California, Berkeley

WORK EXPERIENCE

1971 to Present	Medi-Physics, Inc.
06/85 - Present	Manager, Development and Engineering, Arlington Heights Facility, IL
1984 - 06/85	Manager, Product Development and Planning, Corporate Headquarters, Richmond, Ca. (Also served as alternate Radiation Safety Officer, State of California Lic. No. 2067-60.)
1981 - 1984	Technical Advisor, Corporate Office, Emeryville, Ca.
1976 - 1981	Radiopharmaceutical Production Manager, Emeryville Facility, Ca. (Also served as alternate Radiation Safety Officer, State of California Lic. No. 2067-60.)
1971 - 1976	Research Chemist, Emeryville Facility, Ca

PRESENTATIONS

Lamb JF, Khentigan A, Baker GA, et al: Rubidium 81m in evaluation of regional myocardial perfusion. First World Congress of Nuclear Medicine, Tokyo, October 1974

Lamb JF, Baker GA, Winchel HS: Stable isotope use in the commercial production of radiopharmaceuticals. American Nuclear Society, Winter Meeting, Washington, DC, October 1974

PUBLICATIONS

Baker GA, Lum DJ, Smith EM, et al: Significance of radiocontaminants in I-123 for dosimetry and scintillation camera imaging. J Nucl Med Vol 17 8:740-743, August 1976

Lamb JF, Baker GA, Goris ML, et al: Production and clinical evaluation of a commercial Kr 81m gas generator and its delivery system. Clinical and Experimental Applications of Kr 81m, Hammersmith, London, June 1977

Revised Dec. 1985

DMF No. 3746

ir

STATEMENT OF TRAINING AND EXPERIENCE

(Use additional sheets as necessary)

Instruction: Every individual proposing to use radioactive material is required to submit a Statement of Training and Experience in duplicate to the address given above. Physicians should request Form RH 2000 A when applying for human use authorizations.

Mgr. Development
and Engineering

1. Name of proposed user: Gary A. Baker Position title: Alternate Radiation Safety Officer
Address: 1919 Ygnacia Valley Road, No. 80 City: Walnut Creek Zip: 94598
To be included on Lic. No. 2067-60 in name of Medi-Physics, Inc.

2. Description of proposed use
Development of manufacturing and test methods.

3. Training:

- a. High School Graduate: Yes X No
b. College or University: Name and location: University of California at Berkeley
Years completed 4 Degree BS Course of study Chemistry
c. Education specifically applicable to use of radioactive material
Nuclear Engineering
Nuclear Chemistry
Radiochemistry

4. Experience:

- a. List experience with radioactivity beginning with most recent
(1) Dates: From 1981 to Present
Title and duties: Manager, Development and Engineering: Responsible for Development of Manufacturing and Test Methods
Employer: Medi-Physics, Inc. Address: Emeryville, CA 94608
(2) Dates: From 1976 to 1981
Title and duties: Mgr. of Radiopharmaceutical Production: Responsible for scheduling, planning, training and manufacturing.
Employer: Same Address: Same
(3) Dates: From 1973 to 1976
Title and duties: Research Chemist: Responsible for product R and D.
Employer: Same Address: Same

- b. Radioactive materials previously used. Cite typical radioisotopes in appropriate box and key to Part 4.a above:

	Quantities Handled			
	Microcuries	Millicuries	Curies	Kilocuries
Sealed sources	Am 237, Cr 51, Y88, Na22, Co60	Ra226, Co57, Sr85	Cs137	
Unsealed alpha emitters	Hg203, Mn54, Ba133	At211		
Unsealed beta-gamma emitters		Cr51, Ce(Pr)144, K43, F18	Hg195, Tl201, Rb81, Mo99, Tc99m, I123, Ga67, In111, Xe133	
Neutron sources				

- c. Describe procedures similar to those proposed in Part 2 with which you have had experience. Indicate months or years for each and key to Part 4.a above.

Experience in development 4 a (1) and 4 a (3)

Experience in manufacturing 4 a (1), 4 a (2), and 4 a (3)

Experience in testing 4 a (1) and 4 a (3)

- d. Indicate which types of facilities you have used and key to Part 4.a.

- ☒ Ordinary Chemical laboratories
- ☒ "Controlled Area" (Type B) laboratories
- ☒ Glove boxes
- ☒ Shielded glove boxes
- ☒ Caves with remote manipulators
- ☐ Field operations with portable equipment

5. Certificate:

I hereby certify that all information contained in this Statement is true and correct.

Henry B. Baker
Signature of proposed user

8/15/85
Date

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC HEALTH

KLM.003.01

APPLICATION FOR RADIOACTIVE MATERIALS LICENSE
Supplement B - Training and Experience

TRAINING AND EXPERIENCE OF EACH INDIVIDUAL NAMED IN ITEMS 4 AND 5 ON FORM IDPH.KLM.001

TYPES OF TRAINING	WHERE EXPERIENCE WAS GAINED AND INSTRUCTOR (S)	DURATION OF TRAINING	ON THE JOB (Check Answer)	FORMAL COURSE (Check Answer)
Principles and practices of radiation protection.....	(Markowitz, Edelstein, Prussin, et al) Univ. Calif, Berk	'71 thru '74	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	(W. E. Pritchard MPI Emvl T. L. Vaughn)	'71 thru '81	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
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			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Radioactivity measurement standardization and monitoring techniques and instruments.....	Univ. of Calif, Berk (same)	'71 thru '74	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	MPI Emvl .. (same)	'71 thru '81	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
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			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Mathematics and calculations basic to the use and measurement of radioactivity ...	Univ. of Calif, Berk (same)	'71 thru '74	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	MPI Emvl (same)	'71 thru '81	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
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			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Biological effects of radiation.....	Univ. of Calif, Berk (same)	'71 thru '74	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	MPI Emvl (same)	'71 thru '81	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
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			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
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	CONTROL NO. 80342		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

RADIOACTIVE MATERIALS	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED AND INSTRUCTOR(S)	DURATION OF EXPERIENCE	TYPE OF USE
C-11	2000mCi	MPI Emv1 WEP	4 yrs	R&D
N-13	100mCi	" " "	1 yr	R&D
O-15	100mCi	" " "	1 yr	R&D
F-18	8000mCi	" " "	4 yrs	Radopharm mfr
Na-22	10mCi	" " "	14 yrs	Sealed Sources
Na-24	100mCi	" " "	14 yrs	R/P by Product
P-32	1mCi	U C, Berk Prussin	3 mo	Beta Source
K-42	1mCi	MPI Emv1 WEP	3 yrs	R/P by Product
K-43	100mCi	" " "	3 yrs	R/P
Cr-51	300mCi	" " "	2 yrs	Sealed R/P & Sources
Co-57	25mCi	" " "	14 yrs	Sealed Sources
Zn 62	200mCi	" " "	14 yrs	R/P by Product
Zn 65	100mCi	" " "	14 yrs	R/P by Product
Ga 66	500mCi	" " "	14 yrs	R/P by Product
Ga 67	20,000mCi	" " "	14 yrs	R/P
Ga 68	500mCi	" " "	14 yrs	R/P by Product
Ge 68	500mCi	" " "	1 yr	R&D
Se 75	100mCi	" " "	3 yrs	R/P
Br 77	10mCi	" " "	10 yrs	R/P by Product
Kr 81m	4000mCi	" " "	10 yrs	R/P
Rb 81	4000mCi	" " "	10 yrs	R/P
Rb 82M	500mCi	" " "	10 yrs	R/P by Product
Sr85	25mCi	" " "	14 yrs	Sealed Sources
Mo99	400 Ci	" " "	14 yrs	R/P by Product
Tc99m	400 Ci	" " "	14 yrs	R/P
In111	15 Ci	" " "	14 yrs	R/P
In113m	100mCi	" " "	1 yr	R/P
In114m	15mCi	" " "	14 yrs	R/P by Product

[illegible]

David Bolenbaugh

- Currently Development Engineer at Medi-Physics Arlington Heights Facility. Projects include design and improvement of Cyclotron and Target Systems currently in use on two 40 MEV proton cyclotrons now in operation and one 70 MEV proton cyclotron to be operational in 1986.
- Relocated to MPI Arlington Heights in 1985 from MPI Emeryville Cyclotron.
- Shut down and dis-assembled 22 MEV proton Cyclotron in Emeryville Calif. during Dec. 1984 to April 1985 to prepare cyclotron for removal from site.
- Was lead Cyclotron Operator, prior to shut down, responsible for day to day operation, repair and training of Emeryville cyclotron. Due to staff reduction, prior to cyclotron shutdown, assisted with chemical target processing, handled shipment of bulk radioactive product, and assisted with health physics monitoring and equipment calibration.
- Prior to staff reduction was Lead Cyclotron Operator during, 7 day/week Radio-Pharmaceutical production on 22 MEV cyclotron.

Education - 1979 University of California
BA in Physics

Licensed user of Radioactive Materials by State of California, Department of Public Health, License number 2067-60.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC HEALTH

KLM.003.01

APPLICATION FOR RADIOACTIVE MATERIALS LICENSE
Supplement B - Training and Experience

TRAINING AND EXPERIENCE OF EACH INDIVIDUAL NAMED IN ITEMS 4 AND 5 ON FORM IDPH.KLM.001

TYPES OF TRAINING	WHERE EXPERIENCE WAS GAINED AND INSTRUCTOR (S)	DURATION OF TRAINING	ON THE JOB (Check Answer)	FORMAL COURSE (Check Answer)
Principles and practices of radiation protection	Univ. of Calif. Berkeley B.A. Physics 1979	1973-1979	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Medi-Physics Emeryville T. Vaughn, S. Souza, E. Russell	1980-1985	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Radioactivity measurement standardization and monitoring techniques and instruments	Univ. of Calif (same)	1973-1979	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	MPI Emeryville (same)	1980-1985	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Mathematics and calculations basic to the use and measurement of radioactivity ...	Univ. of Calif (same)	1973-1979	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Biological effects of radiation	Univ. of Calif (same)	1973-1979	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
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			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	CONTROL NO. 80342		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

Dave Bolenbaugh

[illegible]

SUSAN L. FROULA
1315 S. Mitchell Avenue
Arlington Heights, IL 60005

OBJECTIVE To be State Certified as a USER with the goal of obtaining a supervisory position in the radiopharmaceutical industry.

EDUCATION 1978-1982 Loyola University of Chicago. Bachelor of Science degrees in Biology and Psychology. Considerable laboratory experience in the subjects of Biology, Chemistry, Physics, and Psychology. Studies also included Calculus, Statistics, experimentation and research methods. Cumulative grade point average 3.3/4.0. Advanced placement credit in Spanish equivalent to two years of college work. Received a total of 154 credit hours (minimum required 128).

1974-1978 Rolling Meadows High School, Rolling Meadows, Illinois, Emphasis on Mathematics and the Sciences. Advanced placement courses in Biology, Calculus, and Spanish. National Honor Society, Seven Semester Honor Pin, Spanish Honor Society, Senior Spanish Award. Grade point average 4.8/5.0.

EXPERIENCE 1982-present Medi-Physics, Inc., Arlington Heights, Illinois. Production Technician II, for the manufacture of radiopharmaceuticals. Chemical processing of cyclotron bombarded targets; formulation and filling of final products; calibration of dispensing pumps, ion chambers, and rapid assay devices; and material preparation. Inventory Control of raw materials, assisting in the development of a computerized inventory system, and utilization of automated order entry.

1980-1982 All Cargo Express, Inc., Elk Grove Village, Illinois. Billing and payroll secretary.

1978-1980 Easkin-Robbins Ice Cream, Woodfield Mall, Schaumburg, Illinois. Member of Sales Staff, responsible for ordering many supplies.

ACTIVITIES Offices held were President and Vice President of Spanish Club. Member of American Field Service, Drill Team, and Intramural Bowling. Interests include piano, tennis, and downhill skiing.

REFERENCES Available upon request.

KLM.003.01

APPLICATION FOR RADIOACTIVE MATERIALS LICENSE
Supplement B - Training and Experience

[illegible]

4. EXPERIENCE WITH RADIATION. (Actual use of radioactive materials or equivalent experience.)

[illegible]

TRAINING AND EXPERIENCE SUMMARY

Mark A. Fraser

EDUCATION

University of Illinois, Champaign-Urbana
96 Hrs. toward Bachelor of Science in Chemistry

Elmhurst College, Elmhurst, Illinois
Currently enrolled to complete Chemistry degree

EMPLOYMENT

Medi-Physics, Inc.
Arlington Hts., IL

Feb. 1982 - July 1983
Production Tech I

July 1983 - December 1984
Production Tech II

January 1985 -
Chemist I

SUMMARY OF QUALIFICATIONS

Cyclotron Products

- Radioisotope dissolution processing through to radiochemical form

Radioisotopes as follows:

- ²⁰³Tl Thallium to ²⁰¹Tl Thallous Chloride Bulk
- Zinc 68 to Gallium 67 bulk
- Cadmium 112 to Indium 111 bulk
- ¹²⁴Tellurium to ¹²³Sodium Iodide bulk

Radiochemical processing to final radiopharmaceutical dispensing

- Thallous Chloride to Thallous Chloride radiopharmaceutical unit dose
- Gallium 67 to Neoscan 67 unit dose
- Indium 111 to Indium DTPA unit dose, Indium Chloride unit dose, and Indium Oxine unit dose.
- Sodium Iodide to Sodium Iodide oral capsules, Sodium Iodide oral solutions and Perfusamine unit dose

Training and supervision of other Production Technicians on processing all radiochemicals and radiopharmaceuticals.

Maintenance and repair of radiopharmaceutical dispensing systems

Perform recoveries of enriched isotopes for cyclotron targets

- ¹²⁴Tellurium for ¹²³Iodine
- ²⁰³Thallium for ²⁰¹Thallium
- ⁶⁸Zinc for ⁶⁷Gallium
- ¹¹²Cadmium for ¹¹¹Indium

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC HEALTH

KLM.003.01

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TYPES OF TRAINING	WHERE EXPERIENCE WAS GAINED AND INSTRUCTOR (S)	DURATION OF TRAINING	ON THE JOB (Check Answer)	FORMAL COURSE (Check Answer)
Principles and practices of radiation protection	Medi-Physics (MPI): R. Allen	3 Hrs.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	MPI: T. Vaughn	12 Hrs.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	MPI: Licensed Users	2.7 yrs.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Radioactivity measurement standardization and monitoring techniques and instruments	MPI: R. Allen	3 Hrs.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	MPI: T. Vaughn	12 Hrs.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	MPI: Licensed Users	2.7 Yrs.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Mathematics and calculations basic to the use and measurement of radioactivity ...	MPI: R. Allen	3 Hrs.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	MPI: T. Vaughn	12 Hrs.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	MPI: Licensed Users	2.7 Yrs.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Biological effects of radiation	MPI: R. Allen	3 Hrs.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	MPI: T. Vaughn	2 Hrs.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
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			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

4. EXPERIENCE WITH RADIATION. (Actual use of radioactive materials or equivalent experience.)

[illegible]

Christ Phillip Kanoles

Degree: B.A. in Biology, 1981 from Northwestern University in Evanston, Ill.

Work: Medi-Physics, Inc., Arlington Hts, Ill.

Technician in Quality Control Department from July. 1981 to Oct. 1985. Development Assistant in Development and Engineering Department as of Oct. 1985.

Involved in the day to day use of radioactive materials. Several isotopes are handled in amounts of more than one Curie (movement of bulk material within the facility, sample removal) as well as amounts less than one Curie (physical and chemical testing of samples, movement of samples and final product dose units within the facility).

A large number of sealed source isotopes (less than 100 uCi each) were used within the Quality Control Department for instrument calibration purposes.

Christ Phillip Kanoles

TYPES OF TRAINING	WHERE EXPERIENCE WAS GAINED AND INSTRUCTOR (S)	DURATION OF TRAINING	ON THE JOB (Check Answer)	FORMAL COURSE (Check Answer)
Principles and practices of radiation protection	Medi-Physics, Inc. by Health Physics Dept.	4.75 yrs	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Radioactivity measurement standardization and monitoring techniques and instruments	Medi-Physics, Inc. by Health Physics Dept	4.75 yrs	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
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			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Mathematics and calculations basic to the use and measurement of radioactivity ...	Medi-Physics, Inc. by Health Physics Dept	4.75 yrs	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	College Level Physics and Chemistry Courses Northwestern University, Evanston Ill	1 yr	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
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			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Biological effects of radiation	Medi-Physics, Inc. by Health Physics Dept	4.75 yrs	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

NRC 3131 ITEM 17
WORK EXPERIENCE WITH RADIATION

[illegible]

KENNETH K. KUHNLE

Education: A. S. Triton College (2 yrs)
 Northern Illinois University (2 yrs)

Work Experience: Medi+Physics (Start 5-9-82 to Present)

 Lab Tech I 1-1/2 yrs
 Lab Tech II 1-1/2 yrs
 Development & Engineering Lead Tech

Description of
Duties:

As a lab tech I., I was responsible for processing raw materials after bombardment by the cyclotron. Also dispensing of final product radiopharmaceutical.

As a Tech II, in addition to my duties I was also responsible for training other technician in handling and processing radio-active materials.

In Development and Engineering I'm responsible for developing new processes so they are usable in production.

NRC 3131 ITEM 16
RADIATION SAFETY TRAINING

Ken Kuhnle

TYPES OF TRAINING	WHERE EXPERIENCE WAS GAINED AND INSTRUCTOR (S)	DURATION OF TRAINING	ON THE JOB (Check Answer)	FORMAL COURSE (Check Answer)
Principles and practices of radiation protection	Rich Allen, Terry Vaughn Linda McLean, Arlington Hts, IL	3 yr 5mo	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	Production Supervisor		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Radioactivity measurement standardization and monitoring techniques and instruments	Health Physics Staff Production Supervisors/ Arlington Hts, IL	3 yr 5mo	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Mathematics and calculations basic to the use and measurement of radioactivity ...	Northern Ill. Univ. DeKalb IL		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Analitical Geometry	4 mo	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Calculus N.I.U.	8 mo	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Physics N.I.U.	8 mo	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	Medi+Physics	NA	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Biological effects of radiation.	Medi+Physics Arl. Hts, IL. Linda McLean	1 day	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	Book (The Genetic Effects of Radiation) Authors: Isaac Asimov T. Dobzhansky	NA	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Medi+Physics	3 yr 5mo	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	Book (Your Body and Radiation) N. Frigerio	NA	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

CONTROL NO. 80342

[illegible]

CURRICULUM VITAE

HAL R. WESTREICH

EDUCATION: M.S., University of Connecticut, Storrs, CT. 1976
B.A., Rutgers University, New Brunswick, NJ. 1974

EXPERIENCE: E.R. Squibb and Sons, New Brunswick, NJ
3/80 - 10/85 Analytical Research Chemist;
Analytical method development utilizing
spectroscopic, thermal, chromatographic,
electrochemical, particle sizing, automated,
and classical techniques. Worked on customer
and manufacturing problems and complaints.
Experience with computers and statistics
3/77 - 3/80 Analytical Chemist. Analytical
testing of materials and products in Quality
Control.

FMC Corporation, Cartaret and Princeton, NJ.
Summers 1971, 1972, 1973 Analytical Technician.
Analytical testing of materials.

University of Connecticut, Storrs, CT
1/74 - 12/76 Teaching assistant and Research
Assistant

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC HEALTH

KLM.003.01

APPLICATION FOR RADIOACTIVE MATERIALS LICENSE
Supplement B - Training and Experience

TRAINING AND EXPERIENCE OF EACH INDIVIDUAL NAMED IN ITEMS 4 AND 5 ON FORM IDPH.KLM.001

TYPES OF TRAINING	WHERE EXPERIENCE WAS GAINED AND INSTRUCTOR (S)	DURATION OF TRAINING	ON THE JOB (Check Answer)	FORMAL COURSE (Check Answer)
Principles and practices of radiation protection.....	Crystal Defect generation by x-ray (radiation U. of Connecticut; Dr. R. Lloyd	1 week	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Radioactivity measurement standardization and monitoring techniques and instruments.....	Rutgers University; Principals of Analytical Chemistry; Dr. S. Zenchelski	1 Semester	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Mathematics and calculations basic to the use and measurement of radioactivity ...	Rutgers Univ; Principals of Analytical Chemistry; Dr. S. Zenchelsky	1 Semester	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Biological effects of radiation.....			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

H. WESTREICH

[illegible]