

**Veterans
Administration**417188
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August 6, 1985

In Reply Refer To: 629/115
NMES:CLC
Mail Control No. 17188

C. L. Cain
Nuclear Materials Safety Section
United States Nuclear Regulatory
Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Dear Mr. Cain:

In reference to the questions raised in your correspondence dated May 23, 1985 regarding our license renewal application, the following are your recommendations and our response:

Recommendation:

1. The following changes will be made to Conditions 6., 7., and 8. of your license dated March 21, 1979:

a. Item B. authorizing use of Group III materials, as defined in 10 CFR Part 35, Section 35.100(c), will be deleted since you plan to continue obtaining unit doses from Textatope Pharmacy and will not be using generators or preparing radiopharmaceuticals from reagent kits:

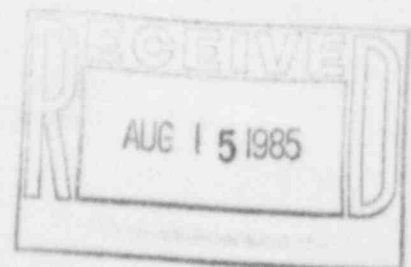
Response: Since we do plan to continue obtaining unit dose radiopharmaceuticals from Nuclear Pharmacy Incorporated (NPI), formerly Textatope Pharmacy, we have deleted Schedule A Group III from our license renewal application. Accordingly, we agree that Item B should be deleted from our license.

b. Authorization for use of Group VI materials 10 CFR Part 35, Section 35.100(f) will be added to the license:

Response: Request for authorization for the use of Group VI materials have been added to our license renewal application.

c. The possession limit for Item E., any byproduct material listed in Section 31.11(a) of 10 CFR Part 31, will be increased to 200 millicuries each. Items I., J., K., and L., specifically authorizing hydrogen-3, carbon-14, iodine-125 and iodine-131, will be deleted:

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Response: According to your recommendation, we request that Item E, materials listed in Section 31.11(a) of 10 CFR Part 31, of our license reflect the change from 3 to 200 millicuries each as the possession limit. We also request that Items I., J., K., and L., specifically authorizing hydrogen-3, carbon-14, iodine-125 and iodine-131 be deleted from the license.

d. Item F. possession limit of 1.5 curies for xenon-133 will be maintained until you amend your license to occupy proposed new nuclear medicine facilities and supply survey information described in Regulatory Guide (RG) 10.8, Appendix M:

Response: The Nuclear Medicine Service concurs with the recommendation.

e. For Items G. and H., identify the manufacturer and model numbers of the sealed sources of americium-241 and iodine-125. If these sources are to be used in a bone mineral analyzer, provide the name of the manufacturer and model number. If these sources are for storage only, so specify:

Response:

The americium-241 source, model AMC-25 in a Norland #189A020A source holder, manufactured by Amersham/Searle is for storage only. The bone mineral analyzer which uses the source has been surplused to the Regional Research Equipment Program (RREP), VA Medical Center, 1201 NW 16th Street, Miami, Florida. When the bone mineral analyzer is transferred to another VA facility for use, the VAMC New Orleans will then ship the source to the new using facility. This is being done in order to prevent possible loss of the source in the RREP warehouse, for which they are not licensed to possess.

The iodine-125 sealed source, model IMC-124 in a Norland #178A483A source holder manufactured by Amersham/Searle, purchased in 1974 has decayed. Please remove it from the license.

f. The sealed sources identified in Items M. and N. of our license (Cobalt-60, Nuclear-Chicago Model No. RR-60-25 and Strontium-90, U.S. Radium Type Lab-369 mounted in Barber-Colman Ionization Detector, Type A 4147) are integral sources for calibrating survey meters and remain with us. Please include in the license.

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g. Item 6.a. of your license renewal application also requested possession of any byproduct material with atomic number 1 through 83 for use in accordance with an identified attachment that was apparently not included in your application. Identify the proposed use of these materials and the desired possession quantities:

Response: Item 6.a., "Radioactive Material for Medical Use"; our statement "any byproduct material with atomic numbers 1 through 83" on the application form has been deleted. The referenced identified attachment that was omitted is Attachment - Form NRC-313M (Application for Materials License - Medical): Item 6.a.: Radioactive Material for Medical Use continued: Nuclear Medicine Service Dose Schedule, page 3 of the license renewal application.

2. The dose schedule included with your application identified six medical uses of materials not listed in 10 CFR Part 35, Section 35.100. Confirm that these materials are not subject to human use under your license:

Response: We have revised Item 6.a., Radioactive Material for Medical Use, Nuclear Medicine Service Dose Schedule to reflect the fact that gallium-67, indium-111, iodine-123 and thallium-201 are cyclotron-produced materials and are not regulated by the NRC.

3. Since you indicated in your application that you will be calibrating survey instruments yourself, submit calibration procedures equivalent to Appendix D, Section 1 of RG 10.8. Also identify the certified NBS-traceable source to be used for this procedure:

Response: We have requested, for purchase, a Victoreen #64-773 gamma survey instrument calibrator from Nuclear Associates, 100 Voice Road, Carle Place, New York. The manufacturer's instructions will be followed. When the instrument is received, a copy of the manufacturer's instructions will be forwarded to your office for comparison with the calibration procedures outlined in Appendix D, Section 1 of RG 10.8. Also the manufacturer's information on the National Bureau of Standards-(NBS) traceable source.

4. Submit your procedures for calibration of your dose calibrator. These should be equivalent to those prescribed in Appendix D, Section 2 of RG 10.8. Also identify your dose calibrator by manufacturer and model number:

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Response: Dose calibrator Picker Model 632513-1. The procedure for calibration of the dose calibrator follows:

All radiopharmaceuticals must be assayed for activity to an accuracy of 10%. The most common instrument for accomplishing this is an ionization type dose calibrator. The instrument must be checked for accurate operation at the time of installation and periodically thereafter.

1) Each day instrument is used:

Measure and record the activity of the two reference sources (Co-57 and Ba-133). This check should be repeated during the day whenever sample readings are not within 10% of the anticipated assay. The activity levels of the reference sources used should approximate those levels normally encountered, giving adequate attention to source configuration. The lower energy reference standard (Co-57) must be in vials with the same thickness of glass as the actual samples to be measured for best accuracy.

a) Assay the reference standard in the dose calibrator at the appropriate setting and subtract the background level to obtain the net activity.

b) Repeat Step a. for a total of 3 determinations and average results.

c) The average activity determined in Step b. should agree with the certified activity of the reference source within $\pm 5\%$ after decay corrections.

d) Maintain a log of these calibration checks on "Dose Calibrator Calibration Record" form.

e) Calibration checks which do not agree within $\pm 5\%$ indicate that the instrument should be repaired or adjusted. If this is not possible, a calibration factor should be calculated for using during routine assays of radionuclides.

2) Instrument shall be inspected and tested annually for:

a) Chamber linear and zero set:

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Inspect the instrument on an annual basis to ascertain that the measurement chamber linear is in place and that instrument zero is properly set (per manufacturer's instructions).

b) Instrument linearity:

The linearity of a dose calibrator should be ascertained over the entire range of activities employed. This test will utilize a vial of Tc99m whose activity is equivalent to the maximum anticipated activity to be assayed (i.e. the first elution from a new generator):

1. Assay the Tc99m vial in the dose calibrator and subtract background level to obtain net activity in millicuries.

2. Repeat Step 1. at time intervals of 6, 24, 30 and 48 hours after the initial assay.

3. Using the 20 hour activity measurement as a starting point, calculate the predicted activities at 0, 6, 24 and 48 hours using the following table:

<u>Assay Time (Hours)</u>	<u>Correction Factor</u>
0	32
6	16
24	2
30	1
48	0.125

Example: If the net activity measured at 30 hours was 15.625 millicuries, then the predicted activity for 6 and 48 hours would be $15.625 \text{ mCi} \times 16 = 250 \text{ mCi}$ and $15.625 \text{ mCi} \times 0.125 = 1.95 \text{ mCi}$, respectively.

4. Plot the measured net activity for each time interval versus the predicted activity on log-log graph paper.

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5. The activities plotted should be within $\pm 5\%$ of the predicted curve if the instrument is linear and is functioning properly. Error greater than $\pm 5\%$ indicate the need for repair or adjustment of the instrument.

6. If instrument linearity cannot be corrected, it will be necessary, in routine assays, to either assay an aliquot of the eluate that can be accurately measured or to use the graph constructed in Step 4 to relate measured activities to **true** activities.

c) Geometrical variation:

There may be significant geometrical variation in activity measured as a function of sample volume or configuration, depending on the volume and size of the ionization chamber used in the dose calibrator. The extent of geometrical variation should be ascertained for commonly used radionuclides and appropriate correction factors computed if variations are significant, i.e., greater than $\pm 2\%$ (even though correction factors may be provided by the manufacturer, the accuracy of these should be checked).

To measure variation with volume of liquid, a 30 ml vial containing 2 mCi of Co-57 or other appropriate radionuclide in a volume of 1 ml will be used:

1. Assay vial at the appropriate instrument setting and subtract background level to obtain net activity.

2. Increase volume of liquid in vial in Steps 2, 4, 8, 10, 20 and 25 ml by adding the appropriate amount of water or saline. After each addition, gently shake vial to mix contents and assay as in Step 1.

3. Select one volume as a standard (such as the volume of reference standard used in performing the test for instrument accuracy) and calculate the ratio of measured activities for each volume to the reference volume activity. This represents the volume correction factor.

Example: If activities of 2.04, 2.02 and 2.00 mCi are measured for 4, 8, and 10 ml volumes and 10 ml is the reference volume selected, then:

$$4 \text{ ml volume CF} = \frac{2.00}{2.04} = 0.98$$

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4. Plot the correction factors against the volume on linear graph paper. Use this graph to select the proper volume correction factors for routine assay of that radionuclide.

5. The true activity of a sample is calculated as follows:

$$\text{True activity} = \text{measured activity} \times \text{CF}$$

Where the CF used is for the same volume and geometrical configuration as the sample measured.

6. Similarly, the same activity of Co-57 in a syringe may be compared with that of 10 ml in a 30 ml vial and a correction factor calculated.

7. It should be noted that differences of 200% in dose calibrator readings between glass and plastic syringes have been observed for lower energy radionuclides such as iodine-125. Hence, adequate correction factors must be established for this syringe type. An alternate to providing syringe calibration factors is to simply assay the stock vial before and after filling the syringe. The activity in the syringe is then the difference in the two readings (with a volume correction, if significant).

5. Describe your training requirements for individuals using materials in applications other than human use. This training should be at least equivalent to that described in 10 CFR Part 33, Section 33.15(b):

Response: Individuals approved for use of byproduct materials in applications other than for human use by the VA Medical Center New Orleans Radioisotopes and Radiation Safety Committee will either have a Bachelors, Masters or Doctoral degree in physical or biological sciences or they will have a Medical degree. They will have received training and instructions in the safe handling of the radioactive material they will be using either from formal university courses or an on-the-job training by an experienced and qualified investigator. In any case, employees at the New Orleans VA Medical Center, will be interviewed and instructed by the Radiation Safety Officer before working with radioactive materials. He will determine the level of his/her experience and will give instructions in the safe handling, procurement procedure and the use and disposal of byproduct materials; particularly where deficiencies

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are evident in their knowledge. He will also supervise the use and disposal of nuclear materials and approve the purchase of the same for use in the research laboratories

6. Item 12. of your application discusses personnel training all of which we presume to be radiation safety training. If this is not the case, describe your radiation safety training program and address the items identified on page 8 of RG 10.8:

Response: The radiation safety training program in force at this medical center includes:

a. Review of radiation safety procedures for nuclear medicine personnel during staff meetings and walk-through inspections by the Radiation Safety Officer.

b. Each calendar month, all new nursing and associated personnel, such as licensed practical nurses, respiratory assistants, etc., are instructed in radiation safety by the Radiation Safety Officer during a one-hour class. This is a mandatory requirement by Nursing Service.

c. Each calendar month, a second mandatory review class is held by the Radiation Safety Officer on radiation safety for the medical center nursing staff. Each individual in Nursing Service must attend one of these review classes yearly. Also see supplementary sheet, Item 12 of our license renewal application.

7. Describe the areas to be used for waste storage. If you intend to dispose of radioactive waste by decay-in-storage, you must monitor the material with all shielding removed to assure decay to background level prior to disposal. Please confirm (refer to 10 CFR 20.201):

Response: At the present time, we have no plans to dispose of radioactive waste by decay-in-storage. The radioactive waste is collected for disposal by ADCO Services, Incorporated, 7225 Duvan Drive, Tinley Park, Illinois, 60477. See supplementary sheet, Item 18 of our license renewal application.

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3. Describe the safety procedures to be employed during iodinations and indicate the flow rate of hoods used for these procedures. Provide calculations to substantiate that radionuclide concentrations in roof exhausts will be less than the values listed in Appendix B, Table II, of 10 CFR 20:

Response: The hoods in each of the research and clinical laboratories of the VA Medical Center New Orleans produce an air flow rate of 1375 cfm. Each hood is vented to the roof of the 8th floor building. There are no buildings near this roof (within 200').

For iodination, 1 mCi is taken from a rubber stoppered vial using a Hamilton Syringe or equivalent. If by some freak accident, this 1 mCi should be spilled into the hood and vented to the roof (through evaporation and sublimation), within a ten minute period the quantity of radioactive iodine in the air at the roof of the building will be as follows:

Assume that 100 uCi iodine-125 is sublimated into the hood each minute; then at a blower rate of 1375 cfm, the concentration of iodine-125 in the blower exhaust will be 2.57×10^{-6} uCi/ml/min:

$$\frac{100 \text{ uCi/min}}{1375 \text{ cu ft} \times 28300 \text{ ml/cu ft}} = 2.57 \times 10^{-6} \text{ uCi/ml/min}$$

The roof of the 8th floor is approximately 144 sq ft and, therefore, has a total area of 20736 square feet. Assuming the exhaust from the blower is distributed throughout the roof area at a height of 4 ft, the total volume for dilution is 2.35×10^9 and dilution of iodine-125 will be 1.09×10^{-15} uCi/min:

$$\frac{2.57 \times 10^{-6} \text{ uCi/ml/min}}{4 \text{ ft} \times 144 \text{ ft}^2 \times 28300 \text{ ml/cu ft}} = 1.09 \times 10^{-15} \text{ uCi/ml/min}$$

In 10 minutes, the concentration in air of iodine-125 in the hypothetical spill will be 1.09×10^{-14} uCi/ml.

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10 CFR Part 20, Appendix B: "Concentrations in air and water above natural background", Table 1, Column 1 states that no more than 5×10^{-9} uCi/ml iodine-125 shall be present in air in an unrestricted area. The requirement is greatly exceeded by the dilution calculated above.

9. Provide area survey procedures that are equivalent to Appendix I of RG 10.8. Also describe the additional survey procedures to be employed when Group IV, V, and VI therapy materials are used:

Response: See supplementary sheet, Item 17 "Area Survey Procedures" and Item 20 "Therapeutic Uses of Sealed Sources" of the license renewal application.

10. Submit your procedures for leak testing sealed sources. Identify associated analytical instruments and reference standards that will be used to measure contamination levels to 0.005 microcuries for each type of sealed source you possess:

Response: Sealed sources are swabbed by wetted cotton tip applicators and counted in a well counter. The well counter used is the dose calibrator (see paragraph 4 above) which contains internal standardization which may be used to calibrate the sealed sources (i.e. a window for americium-241 and iodine-125). Americium-241 and iodine-125 are the only sealed sources (not integral with certain instruments) in the VA Medical Center New Orleans possession. The sealed sources used for calibration of the dose calibrator (Co-57 and Ba-133) are also swab tested annually and the results recorded.

11. Confirm that you will maintain a personnel bioassay program in accordance with RG 8.20 (enclosed) for all personnel using radioiodine:

Response: Personnel bioassay program is in force in accordance with the recommendations of RG 8.20

12. Confirm that licensed materials used for human use are procured only from distributors meeting the qualifications described in 10 CFR Part 35, Section 35.14(b)(1) and 35.14(b)(3):

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Response: The licensed materials in use (for human use) are obtained by the following distributors. All meet the qualifications described in 10 CFR Part 35, Section 35.14(b)(1) and 35.14(b)(3):

Nuclear Pharmacy, Inc.(NPI) (formerly Texatope
Pharmacy)
2603 L & A Rd.
Metairie, LA 70004

Cadema Medical Products, Inc.
P.O. Box 250
Middletown, New York 10940

Abbott Laboratories
Diagnostic Division
Abbott Park AP-8
North Chicago, Ill. 60064

Clinical Assays
Division of Travenol Laboratories
620 Memorial Dr.
Cambridge, MA 02139

Bio-Rad Laboratories
Clinical Division
32nd & Griffin
Richmond, CA 94804

Micromedics Systems, Inc.
102 Witmer Rd.
Horsham, PA 19044

Squibb
P.O. Box 16503
Atlanta, GA 30321

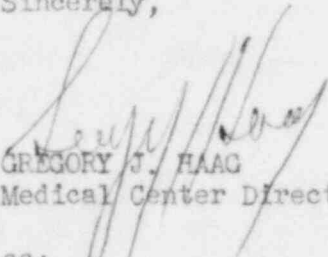
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Becton-Dickerson Immunodiagnostics
Mountain View
Orangeburg, New York 10962

Included with this letter are our amended NRC Form 313M and Nuclear Medicine Service Dose Schedule. Also new users qualification information (preceptor statements and curriculum vitae). Please add to our license renewal application.

If you require any further information, please contact us.

Sincerely,



GREGORY J. HAAG
Medical Center Director

cc:
Director, Nuclear Medicine Service (115)
VA Central Office
810 Vermont Avenue, N.W.
Washington, D. C. 20420

NRC FORM 313M (9-81) 10 CFR 35	U.S. NUCLEAR REGULATORY COMMISSION APPLICATION FOR MATERIALS LICENSE – MEDICAL	Approved by OMB 3150-0041
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INSTRUCTIONS – Complete Items 1 through 26 if this is an initial application or an application for renewal of a license. Use supplemental sheets where necessary. Item 26 must be completed on all applications and signed. Retain one copy. Submit original and one copy of entire application to: Director, Office of Nuclear Materials Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. Upon approval of this application, the applicant will receive a Materials License. An NRC Materials License is issued in accordance with the general requirements contained in Title 10, Code of Federal Regulations, Part 30, and the Licensee is subject to Title 10, Code of Federal Regulations, Parts 19, 20 and 35 and the license fee provision of Title 10, Code of Federal Regulations, Part 170. The license fee category should be stated in Item 26 and the appropriate fee enclosed.

1.a. NAME AND MAILING ADDRESS OF APPLICANT (institution, firm, clinic, physician, etc.) INCLUDE ZIP CODE VETERANS ADMINISTRATION MEDICAL CENTER #629 1601 Perdido Street New Orleans, LA 70146 TELEPHONE NO.: AREA CODE (504) 568 0811	1.b. STREET ADDRESS(ES) AT WHICH RADIOACTIVE MATERIAL WILL BE USED (If different from 1.a.) INCLUDE ZIP CODE SAME
2. PERSON TO CONTACT REGARDING THIS APPLICATION OLGA A. CORREA, M. D. (115) Chief, Nuclear Medicine Service TELEPHONE NO.: AREA CODE (504) 589 5297	3. THIS IS AN APPLICATION FOR: (Check appropriate item) a. <input type="checkbox"/> NEW LICENSE b. <input type="checkbox"/> AMENDMENT TO LICENSE NO. _____ c. <input checked="" type="checkbox"/> RENEWAL OF LICENSE NO. 17-01322-07
4. INDIVIDUAL USERS (Name individuals who will use or directly supervise use of radioactive material. Complete Supplements A and B for each individual.) To be used by individuals designated by the Radioisotopes and Radiation Safety Committee, Dr. Olga A. Correa, Chairman.	5. RADIATION SAFETY OFFICER (RSO) (Name of person designated as radiation safety officer. If other than individual user, complete resume of training and experience as in Supplement A.) ROBERT DIXON MC AFEE, Ph.D. Radiation Safety Officer

6.a. RADIOACTIVE MATERIAL FOR MEDICAL USE					
RADIOACTIVE MATERIAL LISTED IN:	ITEMS DESIRED	MAXIMUM POSSESSION LIMITS	ADDITIONAL ITEMS:	MARK ITEMS DESIRED	MAXIMUM POSSESSION LIMITS
	"X"	(In millicuries)		"X"	(In millicuries)
10 CFR 31.11 FOR IN VITRO STUDIES	"X"	200 mCi	IODINE-131 AS IODIDE FOR TREATMENT OF HYPERTHYROIDISM	"X"	30 mCi
10 CFR 35.100, SCHEDULE A, GROUP I	"X"	AS NEEDED	PHOSPHORUS-32 AS SOLUBLE PHOSPHATE FOR TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA AND BONE METASTASES	"X"	20 mCi
10 CFR 35.100, SCHEDULE A, GROUP II	"X"	AS NEEDED	PHOSPHORUS-32 AS COLLOIDAL CHROMIC PHOSPHATE FOR INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS.		
10 CFR 35.100, SCHEDULE A, GROUP III			GOLD-198 AS COLLOID FOR INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS.		
10 CFR 35.100, SCHEDULE A, GROUP IV	"X"	AS NEEDED	IODINE-131 AS IODIDE FOR TREATMENT OF THYROID CARCINOMA	"X"	300 mCi
10 CFR 35.100, SCHEDULE A, GROUP V	"X"	AS NEEDED	XENON-133 AS GAS OR GAS IN SALINE FOR BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES	"X"	1.5 Ci
10 CFR 35.100, SCHEDULE A, GROUP VI	"X"	SEE BELOW			

6.b. RADIOACTIVE MATERIAL FOR USES NOT LISTED IN ITEM 6.a. (Sealed sources up to 3 mCi used for calibration and reference standards are authorized under Section 35.14(d), 10 CFR Part 35, and NEED NOT BE LISTED.)

ELEMENT AND MASS NUMBER	CHEMICAL AND/OR PHYSICAL FORM	MAXIMUM NUMBER OF MILLICURIES OF EACH FORM	DESCRIBE PURPOSE OF USE
Americium-241	Sealed source	90 mCi	used in bone mineral analysis
Co-57	Source	480 mCi	for calibration of instrument
Ba-133	Source	259 uCi	" " " "
Xe-133	Gas	1.5 Ci	for lung ventilation imaging
Ce-137	Sealed source*	165 mCi	survey meter calibration
*on order, not yet received!			

SUPPLEMENTARY SHEET - NRC -313M - APPLICATION FOR MATERIALS LICENSE - MEDICAL:

DETAILED DESCRIPTION OF ALL THE INFORMATION REQUESTED IN ITEMS 7 THROUGH 23:

ITEM 7: MEDICAL ISOTOPES COMMITTEE:

a. Names and Specialties:

OLGA A. CORREA, M. D., Chairman
Nuclear Medicine and Internal Medicine

ROBERT DIXON MC AFEE, Ph.D., Radiation Safety Officer
Research, Microwave

GEORGE R. MECKSTROTH, Ph.D., Consultant Physicist
Radiation Physics

OLGA M. GARCIA, M. D., Member
Pathology and Nuclear Medicine

SAM A. THREEFOOT, M. D., Member
Research, Vascular

SALEM SAYEGH, M. D., Member
Thoracic and Vascular Surgery

KARL TORNOS, M. D., Member
Internal Medicine and Hematology

THOMAS J. WEATHERALL, M. D., Member
Radiology and Radiotherapy

ROBERT E. BURCH, M. D., Member
Nutrition and Research

HENRY HAHN, Ph.D., Member
Research Chemist

RICHARD DONLON, Member
Administrative Assistant to Chief of Staff

BRIAN KARR, M. D.
Chief, Radiology Service, Member

SALVADOR VELAZQUEZ, M. D., Member
Internal Medicine, Nuclear Medicine and Cardiology

PATRICK ROONEY, Member
Chief, Nursing Service

NOTE: Curriculum vitae attached for members
who are other than authorized users!!

ITEM NO. 7
DATE: 01/31/84

SUPPLEMENTARY SHEET - NRC-312M - APPLICATION FOR MATERIALS LICENSE - MEDICAL:

DETAILED DESCRIPTION OF ALL THE INFORMATION REQUESTED IN ITEMS 7 THROUGH 23:

ITEM 7: MEDICAL ISOTOPES COMMITTEE:

a. Names and Specialties:

PHILIP LINDSAY CARRUTH, B.S., Ph., D.D.S., F.A.G.D.
Chief, Dental Service
Member

ITEM NO. 7
DATE: 07/15/85

ATTACHMENT - FORM NRC-313M (Application for Materials License - Medical):

ITEM 6.a.: RADIOACTIVE MATERIAL FOR MEDICAL USE contd:

<u>NUCLEAR MEDICINE SERVICE DOSE SCHEDULE</u>			
<u>Isotope</u>	<u>Chemical Form</u>	<u>Maximum Possession</u>	<u>Authorized Use & Dosage Rates</u>
I-131 or I-125	Iodide	530 mCi	Thyroid function, 25-50 uCi; thyroid scan, 10-100 uCi; hyperthyroid therapy, 4-10 mCi; cardiac dysfunction therapy, up to 30 mCi; thyroid cancer, up to 200 mCi
I-125	IHSA	15 mCi	Blood volume, 10 uCi
I-131 or I-125	Labelled renal function compounds sodium iodo-hippurate	15 mCi	Renal function studies & scanning, 250 uCi
I-131 or I-125	Rose Bengal	10 mCi	Liver scanning: I-131, 100-125 uCi; I-125: 200-300 uCi
Au-198	Colloidal	150 mCi	Liver scanning, up to 100 uCi; pleural effusions and chest, 75 mCi; ascites therapy, abdomen, 100-125 mCi
Cr-51	Sodium Chromate	5 mCi	Red cell survival, 125 uCi; red cell mass determination, 50-100 uCi
Fe-59	Citrate	2 mCi	Ferrokinetics studies, 10-15 uCi
P-32	Soluble Phosphate	10 mCi	Treatment of polycythemia vera and leukemia, 2-6 mCi
Tc99m	Pertechnetate		Venography, 8-10, 20-30 mCi; aortagram, 8-10 mCi; heart pool scanning, 8-10 mCi; brain scanning, 15-30 mCi
Tc99m	Diphosphonate		Bone scanning, 10-20, 20-30 mCi; brain scanning, 15-30, 20-30 mCi
Tc99m	Glucosheptonate		Renal scanning, 5-10 mCi
Tc99m	Microspheres, macro-aggregate (human albumin)		Lung scanning, 2-5 mCi

ATTACHMENT - FORM NRC-313M (Application for Materials License - Medical):

ITEM 6.a.: RADIOACTIVE MATERIAL FOR MEDICAL USE cont'd:

NUCLEAR MEDICINE SERVICE DOSE SCHEDULE, cont'd

<u>Isotope</u>	<u>Chemical Form</u>	<u>Maximum Possession</u>	<u>Authorized Use & Dosage Rates</u>
Tc-99m	Sulfur colloid		Liver scanning, 2-3, 3-4 mCi; m-dullary scanning, 3-5, 4-6 mCi
Tc-99m	Diethylene triamine pentaacetic acid		Renal scanning, 2-10, 10-20 mCi
Xe-133	Gas	1.5 Ci	Lung ventilation studies, blood flow studies, pulmonary function studies, 10-20 mCi
I-131	6-Iodocholesterol	10 mCi	Adrenal gland scanning, 2 mCi
Tc-99m	Pyrophosphate	100 mCi	Myocardial infarction study, 20-25 mCi
Tc-99m	Disofenin	45 mCi	Hepatobiliary scanning, 6-12 mCi
Yb-169	DTPA	500 uCi	Cisternographic imaging, 500 uCi

NOTE: Although the following are cyclotron-produced and are not NRC regulated, we do use them:

Thallium-201	Chloride	6 mCi	Myocardial perfusion imaging, 1.5-2.7 mCi
Ga-67	Citrate	50 mCi	Total body scanning for neoplastic or inflammatory localization, 3-6 mCi
In-111	Diethylene triamine pentaacetic acid	5 mCi	Cisternographic imaging, 500 uCi
In-123	Sodium Iodide	5 mCi	Thyroid imaging, 100-250 uCi
In-111	Oxine or chloride	5 mCi	Autologous leukocyte labelling, 1 mCi

APPENDIX A

RADIOISOTOPES & RADIATION SAFETY COMMITTEE MEMBERS

Addresses and telephone numbers:

<u>NAME</u>	<u>ADDRESS OR VA MEDICAL CENTER ROOM #</u>	<u>TELEPHONE (BUSINESS, HOME, RADIOPHONE)</u>
Olga A. Correa, M.D. Chief, Nuclear Medicine Service Chairman	Room 2A06	589-5297 (Office) Ext. 5098 or 5099 246-2892 (Home)
Robert D. McAfee, Ph.D. Senior Scientist, Research Radiation Safety Officer	Room 2E05L	568-0811 (Office) Ext. 5074 or 5279 242-6427 (Home)
Olga M. Garcia, M.D. Staff Physician, Nuclear Medicine Service Member	Room 2A11	589-5297 (Office) Ext. 5098 or 5099 455-2341 (Home)
George R. Meckstroth, Ph.D. Radiation Physicist Member	1430 Tulane Ave. New Orleans, LA	486-2582 (Home) 588-5485 or 588-5495 (Office)
Salem Sayegh, M.D. Staff Surgeon Member	Room 6C08	589-5260 (Office) Ext. 5260 737-9932 (Home)
Sam A. Threefoot, M.D. Chief of Staff Member	Room 1W22	589-5214 (Office) Ext. 5214 861-1224 (Home)
Karl Tornyo Chief, Hematology Service Member	Room 7C07	568-0811 (Office) Ext. 5724 288-5842 (Home)
Richard Donlon Administrative Assistant to the Chief of Staff Member	Room 1W27	589-5213 (Office) Ext. 5213 394-7295 (Home)
Robert E. Burch, M.D. ACOS Research Member	Building 3D	589-5279 (Office) Ext. 5279
Thomas J. Weatherall, M.D. Radiotherapist Member	2800 Napoleon Ave. New Orleans, LA	899-7404 (Office) 865-1531 (Home)
Phillip Carruth, D.D.S. Chief, Dental Service Member	Room 3H34	589-5247 (Office) 626-4776 (Home)

Patrick Rooney, RN
Chief, Nursing Service
Member

Room 7E26

589-5151 (Office)
394-0259 (Home)

Salvador Velazquez, M.D.
Staff Physician
Nuclear Medicine Service
Member

Room 2A11

589-5297 (Office)
393-9181 (Home)

Brian M. Karr, M.D.
Chief, Radiology Service
Member

Rm. 2N27

589-5061 (Office)
368-6181 (Home)

BRIAN M. KARR

Born 7/4/52 Perth Amboy, New Jersey

EDUCATION

Univ. of Virginia, Charlottesville 9/70-6/74 B.A. with distinction
Univ. of Virginia, Charlottesville 9/74-6/78 M.D.

POST GRADUATE TRAINING

Univ. of Missouri, Columbia 7/78-8/79 Internal Medicine
Univ. of Missouri, Columbia 9/78-6/80 RadioTogy
Louisiana State Univ., New Orleans 7/80-6/83 Radiology

ACCREDITATION

American Board of Radiology, 6/83

LICENSURE

MO.(inactive), LA., PA

PROFESSIONAL SOCIETIES

American College of Radiology
Radiologic Society of North America
Louisiana State Radiology Society
New Orleans Radiologic Society

EMPLOYMENT

L.S.U. School of Medicine, Assistant Professor, 7/83-present
Charity, Meadowcrest, Jo Ellen Smith Hospitals, visiting staff 7/83-present

CONTINUING EDUCATION

Society of Thoracic Radiology course, 3/17/84-3/23/84
NORS Spring Conference, 6/14/84-6/17/84
R.S.N.A. annual convention and ultrasound course, 11/25/84-12/1/84

CURRICULUM VITAE

PHILIP LINDSAY CARRUTH, B.S.Ph., D.D.S., F.A.G.D.

DATE: July 1, 1984

DATE OF BIRTH: November 30, 1939

SOCIAL SECURITY NUMBER: 439-54-9296

MARITAL STATUS: Married: June 4, 1967
Wife: Lessie Edwina Whitmann Carruth
Children: Julia Kathryn Carruth
Laura Anne Carruth

HOME ADDRESS: #4 St. Jean DeLuz Dr.
Mandeville, Louisiana 70448

Phone: (504) 626-4776

OFFICE ADDRESS: Dental Service
V.A. Medical Center
1601 Perdido Street
New Orleans, Louisiana 70146

Phone: (504) 589-5247

LSU DATE OF APPOINTMENT: November 3, 1982

PRESENT ACADEMIC RANK: Assisant Professor

EDUCATION:

Elementary: St. Joseph Catholic School, Ponchatoula, Louisiana
1945-1948

Ponchatoula Elementary School, Ponchatoula, Louisiana
1948-1953

Secondary: Chamberlain-Hunt Academy, Port Gibson, Mississippi
1953-1957, H.S. Diploma

Undergraduate: Northeast Louisiana University, Monroe, Louisiana
B.S. in Pharmacy, 1966

Professional: University of Tennessee Medical Units, Memphis,
Tennessee
Doctor of Dental Surgery, 1970

Internship: V.A. Medical Center, New Orleans, Louisiana,
1971-1972 (12 months) Rotating

Residency: V.A. Medical Center, San Diego, California,
1973-1975 (24 months) General Practice

MILITARY SERVICE:

1958-1962 United States Navy, Petty Officer Second Class,
qualified as aircraft radio operator in P5M-2
aircraft, served in Patrol Squadron 44 and USS Kitty
Hawk (CVA-63).

1962-1964 United States Naval Reserve, inactive.

1969-1977 United States Naval Reserve, active, honorably
discharged as Lieutenant Commander, Dental Corps.

1977-present United States Army Reserve, Major, Dental Corps.
Current Assignment: 4010th USA Hospital (1000B)

LICENSURE:

1966 Louisiana Pharmacy License #9090
1970 Tennessee Dental License #DS2203
1971 Mississippi Dental License #1439-71
1971 Louisiana Dental License #2482

PROFESSIONAL BOARDS:

V.A. Board of General Dentistry (oral and written) 1979

CURRENT PROFESSIONAL DUTIES:

Chief, Dental Service, V.A. Medical Center, New Orleans, Louisiana,
effective December 1, 1982.

COLLATERAL DUTIES:

Chairman, Dental Professional Standards Board
Member, Clinical Executive Board
Member, Pharmacy and Therapeutics Committee
Member, Quality Assurance Committee
Member, Training and Education Committee

PAST PROFESSIONAL EXPERIENCE:

June 1977 to November 1982, Assistant Chief, Dental Services, VAMC,
New Orleans, Louisiana
July 1976 to June 1981, Program Director, General Practice
Residency, and Staff Dentist, V.A. Medical Center, New Orleans,
Louisiana
July 1975 to June 1976, Program Director, General Practice
Residency; Instructor, Dental Hygiene Program, and Staff
Dentist, V.A. Medical Center, Nashville, Tennessee
July 1973 to June 1975, Resident, V.A. Medical Center, San Diego,
California
July 1972 to June 1973, Staff Dentist, V.A. Medical Center,
Alexandria, Louisiana
July 1971 to June 1972, Intern, V.A. Medical Center, New Orleans,
Louisiana
January 1971 to June 1971, Private Practice, associated with Dr. Roy
W. White, Millington, Tennessee

TEACHING EXPERIENCE:

Course Director, "Periodontics for Dental Hygienists", taught to
second year students in a program sponsored jointly by
Vanderbilt University, Aquinas Junior College, and the V.A.
Medical Center, Nashville, Tennessee, 1975-1976
Special Denture Techniques - 1984
Introduction to Complete Dentures - 1983
Conjoint Dental Materials 1982-83

RESEARCH:

"The effect of zinc-free amalgam on periapical tissue following
retrograde filling procedures and comparison of the apical seal
by radio-isotope and crystal violet dye" Co-investigator,
1974-1975
Local coordinator in VA wide research project, "Hepatitis in
Dentistry", 1979-1981
Tarnish of Alternate Gold Alloys - Clinical Study currently in
progress. Co-Investigator

PROFESSIONAL PAPERS PRESENTED:

"The Two Year General Practice Residency Program", given at the annual meeting of the Association of Military Surgeons of the United States, October 1974, San Diego, California.

PROFESSIONAL ORGANIZATIONS:

American Dental Association
Psi Omega Fraternity
Tennessee State Dental Association
Memphis Dental Society
Academy of General Dentistry
National Association of VA Dentists

ORGANIZATIONAL COMMITTEES:

Academy of General Dentistry Ad-Hoc Committee on General Practice Residency Curriculum, appointed 1979
Academy of General Dentistry Fellowship Examination Committee, appointed to six year term, 1980

ACADEMIC AND PROFESSIONAL HONORS:

Dean's Honorary Odontological Society, University of Tennessee, 1969
Dentsply Award for Excellence In Prosthetic Dentistry, 1970
C.V. Mosby Scholarship Award, 1970
V.A. Special Advancement for Performance, 1977
V.A. Special Advancement for Achievement, 1979
Fellow of the Academy of General Dentistry, 1979

POSTGRADUATE SHORT COURSES:

July 12, 1971, Occlusion, LSU Dental School
November 1, 1971, Facial Trauma, New Orleans Charity Hospital
January 21-22, 1972, Implants, LSU Dental School
April 8, 1972, Occlusion, LSU Dental School
April 21-22, 1972, Crown and Bridge, East Baton Rouge Dental Society
May 5, 1972, Oral Surgery, LSU Dental School
September 8-9, 1972, Pin Retention, LSU Dental School
September 10-12, 1973, Removable Partial Dentures, Naval Dental Center
October 1-3, 1973, Fixed Partial Dentures, Naval Dental Center
October 15-17, 1973, Endodontics, Naval Dental Center
November 12-14, 1973, Operative Dentistry, Naval Dental Center
December 3-5, 1973, Occlusion, Naval Dental Center
January 7, 1974, Oral Diagnosis, Naval Dental Center
January 28-30, 1974, Complete Dentures, Naval Dental Center
February 4-6, 1974, Maxillofacial Prosthetics, Balboa Naval Hospital
March 18-20, 1974, Oral Surgery, Balboa Naval Hospital
January 13-14, 1975, Oral Pathology, VA Hospital, Long Beach, CA
January 28-30, 1975, Oral Pathology, Balboa Naval Hospital

March 10-11, 1975, Oral Surgery, VA Hospital, Long Beach, CA
September 5-6, 1975, Four-handed Dentistry, VA RMEC, Birmingham, AL
November 19-20, 1976, Occlusion, LSU Dental School
January 20, 1978, Pharmacology, LSU Dental School
April 6-7, 1978, Periodontics, LSU Dental School
April 24-28, 1978, Periodontic-Endodontic Relationship, VA Dental
Training Center
June 25, 1979, Interceptive Orthodontics, Academy of General
Dentistry Meeting
June 27, 1979, Basic Sciences, Academy of General Dentistry Meeting
May 19-21, 1979, Pharmacology, VA Dental Training Center
September 19, 1980, Occlusion, VA Medical Center, New Orleans, LA
March 20, 1981, Nutrition, LSU Dental School
May 8, 1981, Periodontics, LSU Dental School
September 18, 1981, Removable Partial Dentures, VA Medical Center,
New Orleans, LA
December 7-11, 1981, Fixed Prosthodontics, Letterman Army Hospital
March 26, 1982, Soft Tissue/Pocket-Flap Surgery, LSU Dental School
April 2, 1982, Soft Tissue/Pocket-Flap Surgery, LSU Dental School
August 4, 1982, Operative Dentistry, VA Medical Center, New Orleans,
LA
September 10, 1982, Local Anesthesia, LSU Dental School
September 12-16, 1983, Dental Program Management, VA Dental
Education Center, Washington, DC
September 19-23, 1983, Restorative Dentistry and Fixed
Prosthodontics, Walter Reed Drug Medical Center, Washington, DC
February 24,25, 1984, Endodontic Gumbo, LSU Dental School

SUPPLEMENTARY SHEET - NRC-313M - APPLICATION FOR MATERIALS LICENSE -

MEDICAL:

DETAILED DESCRIPTION OF ALL THE INFORMATION REQUESTED IN ITEMS 7 THROUGH 23:

ITEM 8: TRAINING AND EXPERIENCE:

a. Authorized User (s):

Olga A Correa, M. D.

Olga M. Garcia, M. D.

Salvador Velazquez, M. D.

Tommie W. Redding

Abba Kastin, M. D.

Henry Hahn, Ph.D.

James Zadina, Ph.D.

William Banks, M. D.

H. Thomas Pretorius, M. D.

Karl Torrey, M. D.

Robert Dixon Mc Afee, Ph.D.

Thomas J. Weatherall, M. D.

b. Radiation Safety Officer:

Robert Dixon McAfee, Ph.D.

SEE ATTACHED SUPPLEMENTS A & B (Preceptor Statement)

ITEM NO. 8

DATE: 07/02/85

PRECEPTOR STATEMENT

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

1. APPLICANT PHYSICIAN'S NAME AND ADDRESS			KEY TO COLUMN C PERSONAL PARTICIPATION SHOULD CONSIST OF: 1-Supervised examination of patients to determine the suitability for radioisotope diagnosis and/or treatment and recommendation for prescribed dosage. 2-Collaboration in dose calibration and actual administration of dose to the patient including calculation of the radiation dose, related measurements and plotting of data. 3-Adequate period of training to enable physician to manage radioactive patients and follow patients through diagnosis and/or course of treatment.
FULL NAME			
JAMES E. ZADINA, PH.D.			
STREET ADDRESS			
1601 PERDIDO ST.			
CITY	STATE	ZIP CODE	
NEW ORLEANS	LA	70146	

2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
I-131 or I-125	DIAGNOSIS OF THYROID FUNCTION		Dr. Zadina's use of radionuclides will be for research and not for clinical uses.
	DETERMINATION OF BLOOD AND BLOOD PLASMA VOLUME		
	LIVER FUNCTION STUDIES		
	FAT ABSORPTION STUDIES		
	KIDNEY FUNCTION STUDIES		
	IN VITRO STUDIES		
OTHER			
I-125	DETECTION OF THROMBOSIS		
I-131	THYROID IMAGING		
P-32	EYE TUMOR LOCALIZATION		
Se-75	PANCREAS IMAGING		
Yb-169	CISTERNOGRAPHY		
Xe-133	BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES		
OTHER			
Tc-99m	BRAIN IMAGING		
	CARDIAC IMAGING		
	THYROID IMAGING		
	SALIVARY GLAND IMAGING		
	BLOOD POOL IMAGING		
	PLACENTA LOCALIZATION		
	LIVER AND SPLEEN IMAGING		
	LUNG IMAGING		
	BONE IMAGING		
OTHER			

PRECEPTOR STATEMENT (Continued)

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

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
P-32 (Soluble)	TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA, AND BONE METASTASES		On the job training supervised by A.J. Kastin, M.D. and R.D. McAfee, Ph.D. (Radiation Safety Officer).
P-32 (Colloidal)	INTRACAVITARY TREATMENT		
I-131	TREATMENT OF THYROID CARCINOMA		
	TREATMENT OF HYPERTHYROIDISM		
Au-198	INTRACAVITARY TREATMENT		
Co-60 or Cs-137	INTERSTITIAL TREATMENT		
	INTRACAVITARY TREATMENT		
I-125 or Ir-192	INTERSTITIAL TREATMENT		
	TELE THERAPY TREATMENT		
Sr-90	TREATMENT OF EYE DISEASE		
	RADIOPHARMACEUTICAL PREPARATION		
Mo-99/ Tc-99m	GENERATOR		
Sn-113/ In-113m	GENERATOR		
Tc-99m	REAGENT KITS		
Other			

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

0

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

a. NAME OF SUPERVISOR

A.J. Kastin, M.D.

b. NAME OF INSTITUTION

NEW ORLEANS VETERANS ADMINISTRATION

c. MAILING ADDRESS

1601 PERDIDO ST.

d. CITY

NEW ORLEANS, LA 70146

5. MATERIALS LICENSE NUMBER(S)

6. PRECEPTOR'S SIGNATURE

[Handwritten Signature]

7. PRECEPTOR'S NAME (Please type or print)

JAMES E. ZADINA, PH.D.

8. DATE

7/15/85

CURRICULUM VITAE

PERSONAL: Name: James E. Zadina

Address: Veterans Administration
Medical Center
Research Service (151)
1601 Perdido Street
New Orleans, LA. 70146

Telephone: (504) 568-0811 x5894 x5388
x5884

PRESENT POSITION: Research Neurophysiologist
Veterans Administration, New Orleans
(1981-Present).

Assistant Professor
Department of Medicine
Tulane University School of Medicine
New Orleans, LA
(1982 - Present).

PAST POSITIONS: Research Associate
Neuroendocrine Laboratory
Veterans Administration, New Orleans
(December, 1978 - September, 1981).

Instructor
Tulane University School of Medicine
New Orleans
(November, 1978 - June, 1982).

Laboratory Instructor and
Coordinator for all laboratory sections,
Physiological Psychology
Tulane University Department of Psychology
(1975-1977).

Consultant in Statistics and Computer Science.
Consultations for: Departments of Psychology,
Social Work, Pharmacology, Ochsner Foundation
Hospital, New Orleans Day Developmental Training
Center.
(1976-1977).

EDUCATION: Ph.D. (Physiological Psychology) December, 1978.
Tulane University, New Orleans, La.

M.S. (Physiological Psychology) August, 1976.
Tulane University

B.A. (Psychology) May, 1973.
University of Nebraska, Omaha, Nebraska.

RESEARCH INTERESTS: Peptides: Mechanism of action, receptors, role in central nervous system development and function, behavioral effects. Endorphin, enkephalin, CRF, Tyr-MIF-1, LHRH.

AWARDS: Research grant award in natural, medical or engineering sciences, Tulane Chapter of Sigma Xi Research Society, 1978.

National Research Service Award, National Institute of Child Health and Human Development, 1979-1980.

Tulane University Medical School
Biomedical Research Support Grant
for research on long-term effects of
perinatal administration of beta-endorphin on Mu
and Delta opiate receptors, analgesia and behavior
in the rat. 1981-1982.

PROFESSIONAL
AFFILIATIONS:

President-Elect: Greater New Orleans Chapter,
Society for Neuroscience.

Society for Neuroscience

Sigma Xi Scientific Research Society
of North America.

American Association for the
Advancement of Science.

American Society of Zoologists

New York Academy of Sciences

EDITORIAL AND
CRITICAL REVIEW
EXPERIENCE:

Papers submitted to Peptides; Physiology
and Behavior; Pharmacology, Biochemistry and
Behavior; Brain Research Bulletin;
Neuroendocrinology.

GRADUATE STUDENT
ADVISING AND
THESIS COMMITTEES:

Six M.Sc., five Ph.D.

PUBLICATIONS (Exclusive of Published Abstracts):

1. Dunlap, J.L., Zadina, J.E. and Gougis, G.G. Prenatal Stress Interacts With Prepuberal Social Isolation to Reduce Male Copulatory Behavior. *J. Physiol. Behav.* 21: 873-875, 1978.
2. Zadina, J.E., Gerall, A.A. and Dunlap, J.L. Modification in Male Reproductive Organs and Behavior Induced by Neonatal Exogenous Steroids. *J. Comp. Physiol. Psych.* 93(2): 314-322, 1979.
3. Schally, A.V., Comaru-Schally, A.M., Zadina, J.E. and Kastin, A.J. LH-RH and its Stimulatory and Inhibitory Analogs: Clinical studies. In: *Psychoneuroendocrinology in Reproduction*. L. Zichella and P. Pancheri, eds. Elsevier Press, Amsterdam, pp. 9-18, 1979.
4. Kastin, A.J., Zadina, J.E., Coy, D.H., Schally, A.V. and Sandman, C.A. Hypothalamic Peptides Affect Behavior After Systemic Injection. In: *Polypeptide Hormones*, R.F. Beers, Jr. and E.G. Bassett, eds., Raven Press, New York, pp. 223-234, 1980.
5. Yehuda, S., Zadina, J.E., Kastin, A.J. and Coy, D.H. D-Amphetamine-induced Hypothermia and Hypermotility in Rats: Changes After Systemic Administration of Beta-endorphin. *Peptides*, 1:179-185, 1980.
6. Kastin, A.J., Nissen, C. Zadina, J.E., Schally, A.V. and Ehrensing, R.H. Naloxone-like Actions of MIF-1 Do Not Require the Presence of the Pituitary. *Pharmacol. Biochem. Behav.* 13:907-912, 1980.
7. Kastin, A.J., Coy, D.H., Schally, A.V. and Zadina, J.E. Dissociation of Effects of LH-RH Analogs on Pituitary Regulation and Reproductive Behavior. *Pharmacol. Biochem. and Behav.* 13:913-914, 1980.
8. Kastin, A.J., Zadina, J.E. and Schally, A.V. Foundations of the Clinical Use of LH-RH: Early Studies with the Porcine Hypothalamic Hormone. *Materia Medica Polona* 12:33-36, 1980.
9. Kastin, A.J., Olson, R.D., Sandman, C.A., Coy, D.H., Zadina, J.E., Schally, A.V. and Ehrensing, R.H. CNS Actions of Peripherally Administered Peptides: Some Unresolved Issues. In: *Changing Concepts of the Nervous System*, A. Morrison and P. Strick, eds., Academic Press, New York, pp. 757-768, 1982.
10. Zadina, J.E., Kastin, A.J., Fabre, L.A. and Coy, D.H. Facilitation of Sexual Receptivity in the Rat by an Ovulation-inhibiting Analog of LHRH. *Pharmacol. Biochem. Behav.* 15(6): 961-964, 1981.

11. Luciano, M.G., Zadina, J.E., Kastin, A.J. and Coy, D.H. Mu and Delta Opiate Receptors in Rat Brain are Affected by GTP but not by MIF-1. *Brain Res. Bull.* 7(6): 677-682, 1981.

12. Graf, M., Zadina, J.E. and Schoenenberger, G.A. Amphetamine-induced Locomotor Behavior of Mice is Influenced by DSIP. *Peptides*, 3(5): 729-731, 1982.

13. Zadina, J.E., Kastin, A.J., Krieg, E.F. and Coy, D.H. Characterization of Binding Sites for N-Tyr-MIF-1 (Tyr-Pro-Leu-Gly-NH₂) in Rat Brain. *Pharmacol. Biochem. Behav.* 17: 1193-1198, 1982.

14. Kastin, A.J., Banks, W.A., Zadina, J.E. and Graf, M. Brain peptides: The Dangers of Constricted Nomenclatures. *Life Sci.* 32: 295-301, 1983.

15. Kastin, A.J., Vaudry, H., Zadina, J.E. and Olson, R.D. MIF-1-Tyr-MIF-1, and MSH: Control of MSH Release and Extrapiamentary Effects. *American Zoologist*, 23: 551-558, 1983.

16. Kastin, A.J., Zadina, J.E., Banks, W.A. and Graf, M. Misleading Concepts in the Field of Brain Peptides. *Peptides* 5 Suppl. 1: 249-253, 1984.

17. Kastin, A.J., Olson, G.A., Zadina, J.E., Olson, R.D. Disparate Effects of Peripherally Administered Endorphins and Enkephalins in Laboratory Animals. In: *Central and Peripheral Endorphins: Basic and Clinical Aspects*, edited by E.E. Muller and A.R. Genazzani, *Frontiers in Neuroscience Series*, Raven Press, New York, pp. 99-108, 1984.

18. Graf, M.V., Kastin, A.J., Coy, D.H. and Zadina, J.E. DSIP Reduces Amphetamine-induced Hyperthermia in Mice. *Physiol. Behav.*, 33:291-295, 1984.

19. Zadina, J.E. and Kastin, A.J. A Rapid Filtration Method for Receptor Binding: Characterization with Mu and Delta Opiate Receptors. *Pharmacol. Biochem. Behav.* 21(6):947-952, 1984.

IN PRESS:

1. Kastin, A.J., Zadina, J.E., Sandman, C.A., Olson, R.D. Perinatal Injections of Opiate and Other Peptides Exert Long Term Effects. *Raven Press*, In Press.

2. Zadina, J.E., Kastin, A.J., Coy, D.H., and Adinoff, B.H. Developmental, Behavioral, and Opiate Receptor Changes After Prenatal or Postnatal Beta Endorphin, CRF, or Tyr-MIF-1. *Psychoneuroendocrinology*, In Press.

3. Zadina, J.E. and Kastin, A.J. Multi-Independent Actions of Peptides: LHRH, MIF-1, Tyr-MIF-1 and CRF. *American Zoologist*, In Press.

4. Kastin, A.J., R.D. Olson, J. E. Zadina, and W.A. Banks. Relationship of Clinical to Basic Research with Peptides as Illustrated by MSH. Plenum Press, In Press.
5. Kastin, A.J., J.E. Zadina, G.A. Olson, and W.A. Banks. Considerations Regarding Some Peptides Involved in Biorhythms, Reproduction, Stress, and Pineal Function. In: Health Psychology and Behavioral Medicine, edited by P. Pancheri and L. Zichella, McGraw-Hill, In Press.
6. Zadina, J.E. and A.J. Kastin. Developmental and Long-Term Effects of Stress and Stress Peptides. In: Health Psychology and Behavioral Medicine, edited by P. Pancheri and L. Zichella, McGraw-Hill, In Press.
7. Kastin, A.J. and Zadina, J.E. Peptides: Multiple independent actions. In: Encyclopedia of Neuroscience, edited by G. Adelman, Birkhauser Press, Boston, In Press.
8. Kastin, A.J., Zadina, J.E. and Banks, W.A. Hormones and the Normal Brain. In: Principles and Practice of Endocrinology and Metabolism edited by K.L. Becker, Lipincott Press, Chapter 188, In Press.
9. Kastin, A.J., Stevens, E. Zadina, J.E., Coy, D.H., and Fischman, A.J. Tyr-MIF-1 identified in brain tissue and its analogs are active in two models of antinociception. Pharmacol. Biochem. Behav. In Press.

Submitted:

1. Zadina, J.E. and Kastin, A.J. Interactions of Tyr-MIF-1 and beta-casomorphin-like peptides at binding sites labeled by ¹²⁵I-Tyr-MIF-1 and ¹²⁵I-morphiceptin.
2. Zadina, J.E. and Kastin, A.J. Neonatal peptide effects in young rats: beta-endorphin alters analgesia and opiate receptors, CRF alters corticosterone levels.

PUBLISHED ABSTRACTS:

1. Zadina, J.E., Gerall, A.A. and Dunlap, J.L. The Effect of Neonatal EB and TP on the Development of Male Reproductive Tissues and Behavior. Eastern Conference on Reproductive Behavior. Saratoga Springs, New York, 1976.
2. Zadina, J.E., Dunlap, J.L. and Gougis, G.G. The Interaction of Prenatal Stress and Early Social Stimulation on the Development of Male Reproductive Behavior. Greater New Orleans Chapter, Neuroscience Society Research Symposium, 1976.

3. Zadina, J.E. and Dunlap, J.L. Male Reproductive Development After Neonatal Steroids. American Psychological Association, San Francisco, 1977.
4. Zadina, J.E., Turkelson, C.M. and Pedroza, E. The Influence of Neonatal Androgens on Reproductive Behavior and Cytoplasmic and Nuclear Estrogen Receptors in the Rat Brain. 61st Annual Meeting, Endocrine Society, Anaheim, CA, 1979.
5. Turkelson, C.M., Zadina, J.E. and Pedroza, E. Correlation of Hypothalamic Nuclear and Cytosol Estradiol Receptors With Receptivity in Rats of Various Ages and Neonatal Androgen Treatments. Eastern Conference on Reproductive Behavior, New Orleans, LA 1979.
6. Kastin, A.J., Zadina, J.E. and Banks, W.A. Brain Behavioral Relationships of Neuropeptides. Proc. XII International Congress of the International Society of Psychoneuroendocrinology, 1982.
7. Zadina, J.E., Kastin, A.J., Krieg, E.F. and Coy, D.H. Characterization of a Receptor for Tyr-Pro-Leu-Gly-NH₂. Soc. Neurosci. Abstr. 8: 979, 1982.
8. Kastin, A.J., J.E. Zadina, W.A. Banks, and M. Graf. Misleading Concepts in the Field of Brain Peptides are Being Changed. Brain Endocrine Interaction V Symposium, p.11, 1983.
9. Kastin, A.J., J.E. Zadina, C.A. Sandman, and M. Graf. Perinatal or Adult Injections of Neuropeptides Affect Behavior. Neuro Endocrinology Lett. 5(3): 137, 1983.
10. Zadina, J.E., Kastin, A.J., Adinoff, B.H., and Coy, D.H. Perinatal Administration of Corticotropin Releasing Factor (CRF), Tyr-Pro-Leu-Gly-NH₂ (Tyr-MIF-1) and Beta-endorphin; Effects on Development Behavior and Opiate Receptors in the Rat. Neuroendocrinology Lett. 5(3): 189, 1983.
11. Kastin, A.J., J.E. Zadina, R.D. Olson, C.A. Sandman, and D.H. Coy. Behavioral and Analgesic Effects of Peripherally Injected Opiate Peptides. Central and Peripheral Endorphins: Basic and Clinical Aspects, p. 24, 1983.
12. Zadina, J.E., Kastin, A.J. and Coy, D.H. Developmental, Behavioral, and Opiate Receptor Changes after Pre- or Postnatal Beta-endorphin (BE), Corticotropin Releasing Factor (CRF), or Tyr-Pro-Leu-Gly-NH₂ (Tyr-MIF-1). Central and Peripheral Endorphins: Basic and Clinical Aspects, 1983.
13. Kastin, A.J., W.A. Banks, A. Fischman, and J. Zadina. Ten Concepts for the field of Brain Peptides. VA Practitioner 1:65, 1984
14. Zadina, J.E. and A.J. Kastin. Perinatal CRF-induced Alterations in Development and Day 14 Corticosterone Levels in the Rat. Soc. Psychoneuroendocrinol. Abstr. 15: 141, 1984.

15. Kastin, A.J., J.E. Zadina. Leading and Misleading Concepts in Psychoneuroendocrinology. Psychoneuroendocrinol. Abstr. 15, 1984.
16. Zadina, J.E. and A.J. Kastin. An Improved, Rapid Filtration Technique for Receptor Binding Studies: Characterization with Mu and Delta Opiate Receptors and Tyr-MIF-1 Binding Sites. Soc. Neurosci. Abstr., 10: 216, 1984.
17. Kastin, A.J., R.D. Olson, J.E. Zadina, and W.A. Banks. Relationship of Clinical to Basic Research as Illustrated by MSH. Symposium on Peptides and Peptide Receptors, Washington, D.C., 1985.
18. Zadina, J.E. and A.J. Kastin. Developmental and Long-Term Effects of Stress and Stress Peptides. IVth International Symposium on Psychoneuroendocrinology in Reproduction: Biorhythms and Stress in the Pathophysiology of Reproduction. Verona, Italy, 1985.

INVITED ADDRESSES:

1. Round Table Discussion: "Endorphins' Role in the Regulation of Sexual Behavior." Rockefeller University, New York, 1980.
2. "Effects of LHRH and its Analogs on Female Sexual Behavior in the Rat." New Orleans Endocrine Journal Club, March, 1982.
3. "Tyr-MIF-1 (Tyr-Pro-Leu-Gly-NH₂): A Novel Brain Peptide and its Receptor." Department of Physiology, Tulane University, April, 1982.
4. "Characterization of Tyr-MIF-1 Binding Sites in Rat Brain." Laboratories for Molecular Neuroendocrinology and Diabetes (LMNED), New Orleans, September, 1982.
5. "Characterization of Tyr-MIF-1 Receptors in Rat Brain." Department of Pharmacology, Tulane University, November, 1982.
6. "Perinatal Peptide Administration: Effects on Development, Behavior and Opiate Receptors in the Rat." Winter Neuropeptide Conference, Breckenridge, Colorado, January, 1984.
7. "Perinatal Administration of Behaviorally Active Peptides: Effects on Development, Behavior, and Opiate Receptors." Greater New Orleans Chapter, Society for Neuroscience. Minisymposium: Neuropeptides and Behavior. May, 1984.
8. "Multi-Independent Actions of Peptides." Symposium on the Evolution of Hormone Diversity, American Society of Zoologists, Denver, Co. December, 1984.
9. "Developmental and Long-term effects of Perinatal Stress and Stress Peptides." IVth International Symposium on Psychoneuroendocrinology in

Reproduction: Biorythms and Stress in Physiopathology of Reproduction, Verona,
Italy, July, 1985.

PRECEPTOR STATEMENT

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

1. APPLICANT PHYSICIAN'S NAME AND ADDRESS

FULL NAME

WILLIAM A. BANKS, M.D.

STREET ADDRESS

1601 PERDIDO ST.

CITY

NEW ORLEANS

STATE

LA

ZIP CODE

70146

KEY TO COLUMN C

PERSONAL PARTICIPATION SHOULD CONSIST OF:

1-Supervised examination of patients to determine the suitability for radioisotope diagnosis and/or treatment and recommendation for prescribed dosage.

2-Collaboration in dose calibration and actual administration of dose to the patient including calculation of the radiation dose, related measurements and plotting of data.

3-Adequate period of training to enable physician to manage radioactive patients and follow patients through diagnosis and/or course of treatment.

2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN

ISOTOPE	CONDITIONS DIAGNOSED OR TREATED	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.)
A	B	C	D
I-131 or I-125	DIAGNOSIS OF THYROID FUNCTION	5	Dr. Banks use of radionuclides will be for research and not for clinical uses.
	DETERMINATION OF BLOOD AND BLOOD PLASMA VOLUME	0	
	LIVER FUNCTION STUDIES	0	
	FAT ABSORPTION STUDIES	0	
	KIDNEY FUNCTION STUDIES	0	
	IN VITRO STUDIES	0	
OTHER			
I-125	DETECTION OF THROMBOSIS	0	
I-131	THYROID IMAGING	5	
P-32	EYE TUMOR LOCALIZATION	0	
Se-75	PANCREAS IMAGING	0	
Yb-169	CISTERNOGRAPHY	0	
Xe-133	BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES	0	
OTHER			
Tc-99m	BRAIN IMAGING	0	
	CARDIAC IMAGING	0	
	THYROID IMAGING	5	
	SALIVARY GLAND IMAGING	0	
	BLOOD POOL IMAGING	0	
	PLACENTA LOCALIZATION	0	
	LIVER AND SPLEEN IMAGING	0	
	LUNG IMAGING	0	
OTHER	BONE IMAGING	0	

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

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
P-32 (Soluble)	TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA, AND BONE METASTASES	0	On the job training supervised by A.J. Kastin, M.D. and R.D. McJee, Ph.D. (Radiation Safety Officer).
P-32 (Colloidal)	INTRACAVITARY TREATMENT	0	
I-131	TREATMENT OF THYROID CARCINOMA	5	
	TREATMENT OF HYPERTHYROIDISM	15	
Au-198	INTRACAVITARY TREATMENT	0	
Co-60 or Cs-137	INTERSTITIAL TREATMENT	0	
	INTRACAVITARY TREATMENT	0	
I-125 or Ir-192	INTERSTITIAL TREATMENT	0	
Co-60 or Cs-137	TELE THERAPY TREATMENT	0	
Sr-90	TREATMENT OF EYE DISEASE	0	
	RADIOPHARMACEUTICAL PREPARATION	0	
Mo-99/ Tc-99m	GENERATOR	0	
Sn-113/ In-113m	GENERATOR	0	
Tc-99m	REAGENT KITS	100	
Other 125	RADIOIMMUNOASSAYS	100	

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

0

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

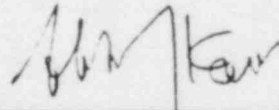
a. NAME OF SUPERVISOR
A.J. Kastin, M.D.

b. NAME OF INSTITUTION
NEW ORLEANS VETERANS ADMINISTRATION

c. MAILING ADDRESS
1601 PERDIDO ST.

d. CITY
NEW ORLEANS, LA 70146

6. PRECEPTOR'S SIGNATURE



7. PRECEPTOR'S NAME (Please type or print)

WILLIAM A. BANKS, M.D.

8. DATE

7/15/85

5. MATERIALS LICENSE NUMBER(S)

William Allen Banks, M.D.

Born: June 9, 1954 - Bloomfield, Missouri.

Education:

B.A. in Biology, University of Missouri, St. Louis, 1975.

M.D., University of Missouri, Columbia, 1979.

Training:

7/79 - 6/80: Medical Intern, Tulane Affiliated Hospitals.

7/80 - 12/81: Medical Resident, Tulane Affiliated Hospitals.

1/82 - 12/82: Fellow in Endocrinology Veterans Administration
Medical Center, New Orleans.

12/82 - Present (12/85): Research Associate, Veterans
Administration Medical Center, New Orleans.

1/84 - Present: Clinical Assistant Professor, Dept. of Medicine,
Tulane University School of Medicine, New Orleans.

Bibliography:

PAPERS

1. Averett, J.E., W.A. Banks and D.E. Boehme. Negative allelopathic effects of rutin and quercetin on fourteen soil and enteric microbes. *Biochemical Systematics and Ecology* 6: 1-3, 1978.
2. Guzman, S., J.A. Chayvialle, W.A. Banks, P.L. Rayford and J.C. Thompson. Effect of vagal stimulation on pancreatic secretion and on blood levels of gastrin, cholecystokinin, secretin, vasoactive intestinal peptide and somatostatin. *Surgery* 8t: 329-336, 1979.
3. Rayford, P.L., S. Guzman, M. Miyata, W.A. Banks and J.C. Thompson. Evidence for vagal inhibition of gastrin release. *Surgical Forum* 30: 380-382, 1979.
4. Banks, W.A. Evidence for a cholecystokinin gut-brain axis with modulation by bombesin. *Peptides* 1: 347-351, 1980.
5. Kastin, A.J., W.A. Banks, N. Marks and R.D. Olson. Dissociative effects of CNS peptides with some unusual applications of RIA. In: Physiological Peptides and New Trends in Radioimmunology, Ch. A. Bizollon (ed.), Elsevier, pp. 89-99, 1981.
6. Kastin, A.J., P.F. Castellanos, W.A. Banks and D.H. Coy. Radioimmunoassay of DSIP-like material in human blood: possible protein binding. *Pharmac. Biochem. Behav.* 15: 969-974, 1981.
7. Banks, W.A., A.J. Kastin and D.H. Coy. Delta sleep-inducing peptide crosses the blood-brain barrier in dogs: some correlations with protein binding. *Pharmac. Biochem. Behav.*, 17:1009-1014, 1982.

8. Kastin, A.J., W.A. Banks, P.F. Castellanos, C. Nissen, and D.H. Coy. Differential Penetration of DSIP peptides into Rat Brain. *Pharmac. Biochem. Behav.* 17:1187-1191, 1982.
9. Kastin, A.J., W.A. Banks, J.E. Zadina, and M. Graf. Brain peptides: dangers of constricted nomenclatures. *Life Sci.* 32:295-301, 1983.
10. Banks W.A., A.J. Kastin and D.H. Coy. Delta sleep-inducing peptide is absorbed from the gastrointestinal tract in the neonatal rat. *Life Sci.* 33:1587-1597, 1983
11. Banks, W.A. and A.J. Kastin. Aluminium increases permeability of the blood-brain barrier to labelled DSIP and β -Endorphin: possible implications for senile and dialysis dementia. *The Lancet* ii:1227-1229, 1983.
12. Banks, W.A. and A.J. Kastin. CSF-plasma relationships for DSIP and some other neuropeptides. *Pharmacol. Biochem. and Behav.* 19:1037-1040, 1983.
13. Kastin, A.J., J.E. Zadina, W.A. Banks and M.Graf. Misleading concepts in the field of brain peptides. *Peptides* 5(Suppl.1): 249-253, 1984.
14. Banks, W.A., A.J. Kastin and D.H. Coy. Evidence that ¹²⁵I-N-Tyr-delta-sleep-inducing peptide crosses the blood-brain barrier by a non-competitive mechanism. *Brain Res.* 301:201-207, 1984.
15. Banks, W.A., A.J. Kastin, E.G. Biglieri and A.E. Ruiz. Primary adrenal hyperplasia: a new subset of primary hyperaldosteronism. *JCEM* 58:783-785, 1984.
16. Banks, W.A. and A.J. Kastin. A brain-to-blood carrier-mediated transport system for small, N-tyrosinated peptides. *Pharmac. Biochem. Behav.* 21:943-946, 1984.
17. Banks, W.A. and A.J. Kastin. Aluminum alters permeability of the blood-brain barrier to some non-peptides. *Neuropharm.* 24:407-412, 1985.
18. Banks, W.A. and A.J. Kastin. The aluminum induced increase in blood-brain barrier permeability to DSIP occurs throughout the brain and is independent of phosphorus and acetylcholinesterase levels. *Psychopharm.* (in press).
19. Banks, W.A. and A.J. Kastin. Permeability of the blood-brain barrier to neuropeptides: The case for penetration. *Psychoneuroendocrinology* (in press).
20. Kastin, A.J. and W.A. Banks. Peptides and the blood-brain barrier. *Encyclopedia of Neuroscience* (in press)

21. Banks, W.A. and A.J. Kastin. Aging, peptides and the blood-brain barrier: Implications and speculations. In: Treatment Development Strategies for Alzheimer's Disease, (in press).
22. Banks, W.A., A.J. Kastin, and J. Selznick. Modulation of immunoactive levels of DSIP and blood-brain barrier permeability by lighting and diurnal rhythm. J. Neurosci. Res. (in press).
23. Banks, W.A., A.J. Kastin, D.H. Coy, and E. Angulo. Differential penetration of analogs and delta sleep-inducing peptide across the dog blood-cerebrospinal fluid barrier: The role of plasma half-life and protein binding (submitted).
24. Banks, W.A., A.J. Kastin, and E. Michals. The carrier-mediated transport of thyroxine across the blood-brain barrier is directed primarily from the brain to the blood (submitted).
25. Banks, W.A. and A.J. Kastin. Peptides and the blood-brain barrier: Lipophilicity as a predictor of permeability. Brain Res. Bull. (in press).
26. Kastin, A.J., R.D. Olson, J.E. Zadina, and W.A. Banks. Relationship of clinical to basic research with peptides as illustrated by MSH (submitted).
27. Kastin, A.J., J.E. Zadina, G.A. Olson, and W.A. Banks. Considerations regarding some peptides involved in biorhythm, reproduction, stress, and pineal function (submitted).
28. Banks, W.A. and A.J. Kastin. Aging and the blood-brain barrier: Changes in the carrier-mediated transport of peptides (submitted).
29. Banks, W.A., A.J. Kastin and D.H. Coy. Structural requirements and metabolic parameters for peptide transport in the brain (in preparation).
30. Banks, W.A. and A.J. Kastin. Transport of Arginine-Vasopressin across the blood-brain barrier (in preparation).
31. Banks, W.A., A.J. Kastin, and E. Michals. Effect of TRH on blood-brain barrier transport of thyroid hormones (in preparation).
32. Banks, W.A. and A.J. Kastin. A technique for determining cerebral permeability coefficients for poorly permeable, rapidly degraded non-electrolytes (in preparation).
33. Banks, W.A. and A.J. Kastin. CSF-Plasma relationships for gut-brain axis hormones (in preparation).

ABSTRACTS

1. Kastin, A.J., W.A. Banks, R.D. Olson and D.H. Coy. Multiple independent effects of brain peptides. V International Symposium on Radioimmunology, Lyon, France, p. 13, 1981.
2. Kastin, A.J., J.E. Zadina, W.A. Banks, and M. Graf. Misleading concepts in the field of brain peptides are being changed. Schmitt Brain Endocrin Interaction V Symposium. Wurzburg, Germany p.11, 1983.
3. Kastin, A.J., W.A. Banks, A.J. Fischman, and J.E. Zadina. Ten concepts for the field of brain peptides. VA Practitioner, 1:65, 1984.
4. Banks, W.A. and A.J. Kastin. Effect of aluminum on BBB permeability to non-peptides. Clin. Res. 32:849A, 1984.
5. Banks, W.A. and A.J. Kastin. Effect of aluminum on phosphorus, acetylcholinesterase, and blood-brain barrier permeability to delta sleep-inducing peptide. Clin. Res. 32:850A, 1984.
6. Banks, W.A. and A.J. Kastin. The effect of plasma level, half-life, and binding on the differential entry of peptide analogs into dog CSF. Clin. Res. 32:853A, 1984.
7. Banks, W.A. and A.J. Kastin. A saturable transport system for small, N-tyrosinated peptides across the blood-brain barrier. Clin. Res. 32:872A, 1984.
8. Banks, W.A. and A.J. Kastin. Physiocochemical factors as predictors of blood-brain barrier penetrance of iodinated peptides. Clin. Res. 32:873A, 1984.
9. Kastin, A.J., R.D. Olson, J.E. Zadina, and W.A. Banks. Relationship of clinical to basic research with peptides as illustrated by MSH. Washington Spring Symposium, 1985.
10. Kastin, A.J., R.D. Olson, W.A. Banks, and J.E. Zadina. Peptides: Some controversial concepts exemplified by MSH. Nonmammalian Peptides. Rome, Italy, 1985.
11. Banks, W.A., A.J. Kastin, L. Hinton. Lithium decreases permeability of the blood-brain barrier to DSIP (in preparation).
12. Banks, W.A. and A.J. Kastin. Streptozotocin-induced diabetes alters blood-brain barrier permeability to DSIP (in preparation).

PRECEPTOR STATEMENT

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

1. APPLICANT PHYSICIAN'S NAME AND ADDRESS

FULL NAME

H. Thomas Pretorius

STREET ADDRESS

1601 PERDIDO ST.

CITY

STATE

ZIP CODE

NEW ORLEANS

LA

70146

KEY TO COLUMN C

PERSONAL PARTICIPATION SHOULD CONSIST OF:

1-Supervised examination of patients to determine the suitability for radioisotope diagnosis and/or treatment and recommendation for prescribed dosage.

2-Collaboration in dose calibration and actual administration of dose to the patient including calculation of the radiation dose, related measurements and plotting of data.

3-Adequate period of training to enable physician to manage radioactive patients and follow patients through diagnosis and/or course of treatment.

2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
I-131 or I-125	DIAGNOSIS OF THYROID FUNCTION	500+	Many are ¹²³ I Thyroid scans
	DETERMINATION OF BLOOD AND BLOOD PLASMA VOLUME		
	LIVER FUNCTION STUDIES		
	FAT ABSORPTION STUDIES		
	KIDNEY FUNCTION STUDIES		
	IN VITRO STUDIES		
OTHER			
I-125	DETECTION OF THROMBOSIS		
I-131	THYROID IMAGING	500+	
P-32	EYE TUMOR LOCALIZATION		
Se-75	PANCREAS IMAGING		
Yb-169	CISTERNOGRAPHY		
Xe-133	BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES		
OTHER			
Tc-99m	BRAIN IMAGING		
	CARDIAC IMAGING		
	THYROID IMAGING	100+	
	SALIVARY GLAND IMAGING		
	BLOOD POOL IMAGING		
	PLACENTA LOCALIZATION		
	LIVER AND SPLEEN IMAGING		
	LUNG IMAGING		
	BONE IMAGING		
OTHER			

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

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
P-32 (Soluble)	TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA, AND BONE METASTASES		Further experience in staff position at Traves and Keesler USAF Medical Center
P-32 (Colloidal)	INTRACAVITARY TREATMENT		
I-131	TREATMENT OF THYROID CARCINOMA	40	
	TREATMENT OF HYPERTHYROIDISM	40	
Au-198	INTRACAVITARY TREATMENT		
Co-60 or Cs-137	INTERSTITIAL TREATMENT		
	INTRACAVITARY TREATMENT		
I-125 or Ir-192	INTERSTITIAL TREATMENT		
Co-60 or Cs-137	TELE THERAPY TREATMENT		
Sr-90	TREATMENT OF EYE DISEASE		
	RADIOPHARMACEUTICAL PREPARATION		
Mo-99/ Tc-99m	GENERATOR		
Sn-113/ In-113m	GENERATOR		
Tc-99m	REAGENT KITS		
Other			

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

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

a. NAME OF SUPERVISOR

A. J. KASTIN, M.D.

b. NAME OF INSTITUTION

VA MEDICAL CENTER

c. MAILING ADDRESS

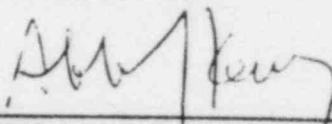
1601 PERDIDO ST.

d. CITY

NEW ORLEANS

5. MATERIALS LICENSE NUMBER(S)

6. PRECEPTOR'S SIGNATURE



7. PRECEPTOR'S NAME (Please type or print)

H. Thomas Pretorius

8. DATE

7-15-85

PRECEPTOR STATEMENT (Continued)

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

ISOTOPE	CONDITIONS DIAGNOSED OR TREATED	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.)
A	B	C	D
P-32 (Soluble)	TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA, AND BONE METASTASES		Dr Robbins actively took part in a research program involving thyroid cancer, which included: relation ¹³¹ I therapy after thyroidectomy and ¹³¹ I treatment of metastatic disease employing the dosimetry methods of Rall et al (Memorial-Sloan Kettering Cancer Center). He was directly involved in selection of patients for therapy and in design of the therapy dose.
P-32 (Colloid)	INTRACAVITARY TREATMENT		
I-131	TREATMENT OF THYROID CARCINOMA	~ 20	
	TREATMENT OF HYPERTHYROIDISM	~ 10	
Au-198	INTRACAVITARY TREATMENT		
Co-60 or Cs-137	INTERSTITIAL TREATMENT		
	INTRACAVITARY TREATMENT		
I-125 or Ir-192	INTERSTITIAL TREATMENT		
	TELE THERAPY TREATMENT		
Co-60 or Cs-137	TELE THERAPY TREATMENT		
	TREATMENT OF EYE DISEASE		
	RADIOPHARMACEUTICAL PREPARATION		
Mo-99 Tc-99m	GENERATOR		
	GENERATOR		
Tc-99m	REAGENT KITS		
Other			

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

On-the-job training from July 1978 to July 1981.
Approximately 25% of time was spent in clinical training, much of which involved thyroid disease patients.

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

a. NAME OF SUPERVISOR

JACOB ROBBINS, M.D.

b. NAME OF INSTITUTION

National Institutes of Health

c. MAILING ADDRESS

BLD 10 RM 8A315

d. CITY

BETHESDA, MD 20205

5. MATERIALS LICENSE NUMBER(S)

NRC Lic. #1900296-10

6. PRECEPTOR'S SIGNATURE

Jacob Robbins

7. PRECEPTOR'S NAME (Please type or print)

Jacob Robbins M.D.

8. DATE

8-21-81

TRAINING AND EXPERIENCE
AUTHORIZED USER OR RADIATION SAFETY OFFICER

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER H. Thomas Pretorius	2. STATE OR TERRITORY IN WHICH LICENSED TO PRACTICE MEDICINE Louisiana
---	---

3. CERTIFICATION

SPECIALTY BOARD A	CATEGORY B	MONTH AND YEAR CERTIFIED C
N/A		

4. TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES

FIELD OF TRAINING A	LOCATION AND DATE(S) OF TRAINING B	TYPE AND LENGTH OF TRAINING	
		LECTURE/ LABORATORY COURSES (Hours) C	SUPERVISED LABORATORY EXPERIENCE (Hours) D
a. RADIATION PHYSICS AND INSTRUMENTATION	Training throughout undergraduate courses in Biology and in medical school when applicable (e.g. section in radiology and nuclear medicine.		
b. RADIATION PROTECTION			
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY			
d. RADIATION BIOLOGY			
e. RADIOPHARMACEUTICAL CHEMISTRY			

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

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
^{125}I	10 mCi	VANO	5 yrs	Animal Experimentation
^{131}I	10 mCi			
^{14}C	1 mCi			
$^{99\text{m}}\text{Tc}$	10 mCi			
^3H	10 mCi			

TRAINING AND EXPERIENCE
AUTHORIZED USER OR RADIATION SAFETY OFFICER

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER

H. Thomas Pretorius

2. STATE OR TERRITORY IN
WHICH LICENSED TO
PRACTICE MEDICINE

3. CERTIFICATION

SPECIALTY BOARD
ACATEGORY
BMONTH AND YEAR CERTIFIED
C

N/A

4. TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES

FIELD OF TRAINING A	LOCATION AND DATE(S) OF TRAINING B	TYPE AND LENGTH OF TRAINING	
		LECTURE/ LABORATORY COURSES (Hours) C	SUPERVISED LABORATORY EXPERIENCE (Hours) D
a. RADIATION PHYSICS AND INSTRUMENTATION	Training throughout undergraduate courses in Biology and Psychology and in preparing for doctorate education.		
b. RADIATION PROTECTION			
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY			
d. RADIATION BIOLOGY			
e. RADIOPHARMACEUTICAL CHEMISTRY			

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

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
$^{125}_{53}\text{I}$	10 mCi	VARO	5 years	Animal Experimentation
^3H	10 mCi			

TRAINING AND EXPERIENCE
AUTHORIZED USER OR RADIATION SAFETY OFFICER

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER

H. Thomas Pretorious

2. STATE OR TERRITORY IN
WHICH LICENSED TO
PRACTICE MEDICINE
Louisiana

3. CERTIFICATION

SPECIALTY BOARD
ACATEGORY
BMONTH AND YEAR CERTIFIED
C

AMERICAN BOARD INTERNAL MED.

MEDICINE

OCT. 1981

4. TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES

FIELD OF TRAINING
ALOCATION AND DATE (S) OF TRAINING
B

TYPE AND LENGTH OF TRAINING

LECTURE/
LABORATORY
COURSES
(Hours)
CSUPERVISED
LABORATORY
EXPERIENCE
(Hours)
Da. RADIATION PHYSICS AND
INSTRUMENTATION

*NIH 1979

?

b. RADIATION PROTECTION

c. MATHEMATICS PERTAINING TO
THE USE AND MEASUREMENT
OF RADIOACTIVITY

d. RADIATION BIOLOGY

During NYU, Ph.D. Training
(Graduate School)e. RADIOPHARMACEUTICAL
CHEMISTRY

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

ISOTOPE

MAXIMUM AMOUNT

WHERE EXPERIENCE WAS GAINED

DURATION OF EXPERIENCE

TYPE OF USE

 ^{131}I

200 mCi

NIH, Keesler, Travis

7 years

 ^{131}I Therapy of
Hyperthyroidism
and Thyroid
Cancer

Curriculum Vitae

December 18, 1984

Name: Harold Thomas Pretorius

Social Security Number: 286-42-9645

Date and Place of Birth: February 26, 1950; San Antonio, Texas

Citizenship: United States

Addresses:

Telephones:

Work: Internal Medicine Department
Endocrinology Section
David Grant USAF Medical Center
Travis Air Force Base
Fairfield, California 94535

(707) 438-2523
(707) 438-5353

Home: 1700 East Tabor Avenue, No. B2
Fairfield, California 94533

(707) 425-6238

Education and Training:

West High School Torrance, California	Science and Math Major	Diploma	1967
University of Southern California, Los Angeles	Biochemistry Major	B.S.	1970
New York University New York City, New York	Microbiology, Biophysics,	M.S.	1974
Graduate School of Arts And Sciences	Biochemistry	Ph.D.	1976
New York University New York City, New York School of Medicine	Medicine	M.D.	1976
University of Texas San Antonio, Texas	Internship Internal Medicine	Certificate	1977
University of Texas San Antonio, Texas	Residency Internal Medicine	Certificate	1978
National Institutes of Health Bethesda, Maryland	Fellowship Endocrinology	Certificate	1981

Certification Examinations:

National Medical Boards, Parts I, II, III, and FLEX	1977
Diplomate of the American Board of Internal Medicine	1981

Medical Licenses: Louisiana, Maryland, Texas, and Virginia

Military Status: Active Duty United States Air Force
Grade O4 (Major) AFSC 9386E
Date of Separation: 4 July 1985

Current Position: Chief Endocrinology, David Grant USAF Medical Center

Awards and Honors:

Salutatorian High School Graduating Class
 National Merit Scholarship
 Alumni Federation Scholarship
 USAF Financial Assistance Grant
 American Board of Internal Medicine Approved Short Track
 In Internal Medicine Residency Training
 National Institutes of Health Medical Scientist Trainee
 National Institutes of Health Clinical Associate

Professional Organization Membership:

American College of Physicians
 Southern Medical Society

Academic Appointments:

Clinical Assistant Professor
 Tulane University School of Medicine
 Clinical Assistant Professor of Medicine
 University of South Alabama

Publications:

- Ramos-Gabatin A., Pretorius H.T. Ectopic Thyroid Glands with Radioiodide Turnover Studies. Accepted for publication in J. Nucl. Med.
- Robbins J., Pretorius H.T., Chu E.W., Ramacciotti C. Letter to the editor, accepted for publication in Archives of Internal Medicine.
- Ramacciotti C.E., Pretorius H.T., Chu E.W., Barsky S.H., Brennan M.F., Robbins J. Diagnostic Accuracy and Use of Aspiration Biopsy in the Management of Thyroid Nodules. Arch Intern Med 144:1169-1173, 1984.
- Pretorius H.T., Katikineni M., Kinsella T.J., Barsky S.H., Brennan M.F., Chu E.W., Robbins J. Thyroid Nodules after High-Dose External Radiotherapy: Fine-Needle Aspiration Cytology in Diagnosis and Management. J Amer Med Assoc 247:3217-3220, 1982.
- Ramacciotti C., Pretorius H.T., Line B.R., Goldman J.M., Robbins J. Ablation of Nonmalignant Thyroid Remnants with Low Doses of Radioactive Iodine. J Nucl Med 23:483-489, 1982.
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- Pretorius H.T., Nandi P.K., Lippoldt R.E., Keen J.H., Pastan I., Johnson M.L., Edelhoch H. in Membranes and Cytoskeleton: Role in Pathologic Processes. N.S. McNutt, S. Hoffstein (eds). Fed Proc 40:206-213, 1981.
- Pretorius H.T., Klein M. Day L.A. Gene V Protein of fd Bacteriophage. J Biol Chem 250:9262-9269, 1975.

Saroff H.A., Pretorius H.T. The Uniqueness of Protein Sequences. o-Uniqueness and Infrequent Peptides. Bull Mathematical Biol 45:117-138, 1983.

INVESTIGATOR'S BIOGRAPHIC SKETCH

NAME McAFEE, Robert D., Ph.D.		SOCIAL SECURITY NO. 489-34-4953
TITLE Research Scientist (Chemist)	ROLE IN PROGRAM Principal Investigator	
EDUCATION <i>(Begin with Baccalaureate; include post doctoral training; do not include Honorary Degrees)</i>		
NAME, LOCATION OF INSTITUTION AND TITLE OF COURSE OF TRAINING PROGRAM	DEGREE	YEAR AWARDED
Central Methodist College, Fayette, MO	B.A.	1948
University of Tennessee, Knoxville, TN	M.S.	1951
Tulane University School of Medicine, New Orleans, LA	Ph.D.	1954
Carnegie Institution of Washington, Washington, D.C. Dept. of Terrestrial Magnetism, Biophysics Section		1954
University of Copenhagen Radioisotope Department, Denmark		1957
MAJOR RESEARCH INTEREST (S) Transport - Sodium ion transport. Health Physics - Biological effects of microwave radiation.		
RESEARCH AND/OR PROFESSIONAL EXPERIENCE <i>(Work backwards from present appointment)</i>		
1959 - present	Senior Scientist, Research Service, VAMC, New Orleans, LA	
1978 - present	Radiation Safety Officer, VA Medical Center, New Orleans, LA	
1979 - present	Adjunct Professor, Dept. of Ophthalmology, Tulane University School of Medicine, New Orleans, LA	
1976 - present	Research Affiliate, Delta Regional Primate Research Center, Covington, LA	
1972 - present	Consulting Professor, Dept. of Electrical Engineering, College of Engineering, Univ. of New Orleans, LA	
1961 - 1970	Consultant in Physiology, Ochsner Foundation Hospital, New Orleans, LA	
1951 - 1974	Teaching Associate, Tulane University Medical School, Physiology Dept., New Orleans, LA	
1954 - 1959	Research Physiologist, Biophysics Program, Tulane University, New Orleans, LA	
1949 - 1951	Teaching Assistant, University of Tennessee, Zoology Department, Knoxville, TN	
HONORS AND AWARDS		

INVESTIGATOR'S BIBLIOGRAPHY

NAME McAFEE, Robert D., Ph.D.	SOCIAL SECURITY NO. 489-34-4953
PUBLICATIONS (Not to exceed three pages for each investigator.)	
<ol style="list-style-type: none"> 1. McAfee, R.D., and Nieset, R.T.: Studies of Amino Acid Metabolism in <u>Escherichia coli</u> with <u>15N</u>. <u>Biochem et Biophysics Acta</u> <u>31</u>: 365, 1959. 2. McAfee, R.D.: The Neurophysiological Effect of Microwave Irradiation. <u>Proc 3rd Annual Tri-Service Conference on Biological Effects of Microwave Radiating Equipment</u>, 1969. Rome Air Development Center Document TR-59-140, Griffis Air Base, Rome, NY 1959. 3. McAfee, R.D.: Neurophysiological Effect of 3 cm Microwave Radiation. <u>Am J Physiol</u> <u>200</u>: 192, 1961. 4. Fleming, J.D., Jr., Pinneo, L., Baus, R., McAfee, R.D.: Microwave Radiation in Relation to Biological Systems and Neural Activity. <u>Bio Effects of Microwave Radiation</u>, Vol. 1, Plenum Press, NY, 1961. 5. McAfee, R.D., Berger, C., Pizzolato, F.: Neurophysiological Effect of 3 cm Microwave Irradiation. <u>4th Ann Tri-Service Conf, Biol Effects of Microwave Radiation</u>, Vol. 1, Plenum Press, NY, 1961. 6. McAfee, R.D.: Physiological Effects of Thermode and Microwave Stimulation of Peripheral Nerves. <u>Am J Physiol</u> <u>203</u>: 374, 1962. 7. McAfee, R.D. and Locke, W.: Effects of Certain Steroids on the Bioelectric Current of the Isolated Frog Skin. <u>Am J Physiol</u> <u>200</u>: 797, 1961. 8. McAfee, R.D.: Microwave Stimulation of the Sympathetic Nervous System. <u>Proc 1st Natl Biomed Sci Instrumentation Symp. Biomed Sci Instrumentation</u>, Vol. 1, 167, Plenum Press, New York, NY, 1963. 9. McAfee, R.D. and Locke, W.: Effect of Angiotensin Amide on Sodium Isotope Flux and Short Circuit Current in Isolated Frog Skin. <u>Endocrinology</u> <u>81</u>: 1301, 1967. 10. McAfee, R.D. and Locke, W.: Effect of a Lipid Extract on Short Circuit Current and Sodium Transport of Isolated Frog Skin. <u>Biochem et Biophys Acta</u> <u>150</u>: 131, 1968. 11. McAfee, R.D.: The Neural and Hormonal Response to Microwave Stimulation of Peripheral Nerves. <u>Biol Effects Hlth Implication Microwave Radiation. Symp Proc</u>, Richmond, VA, Sept 17-19, 1969 (BRH/DBE 70-2) (PB 193 898). 12. McAfee, R.D.: The Action of Beta Adrenergic Site Stimulating Catecholamines on Isolated Frog Skin. <u>Biochem Biophys Acta</u> <u>203</u>: 104, 1970. 13. McAfee, R.D.: Analeptic Effect of Microwave Irradiation on Experimental Animals. <u>The Institute of Electrical and Electronic Engineers Special Issue on Microwave Theory and Techniques</u>, Vol. MMT-19, p. 251, Feb., 1971. 14. McAfee, R.D.: Low Power Density Behavior Effects of Microwave Irradiation of Experimental Animals: Real or Artifact? <u>J Microwave Power</u> <u>7</u>: 83, 1972. 15. McAfee, R.D.: Survival of <u>Rana Pipiens</u> in Deionized Water. <u>Science</u> <u>178</u>: 183, 1972. 16. McAfee, R.D., Baus, R., Jr., Fleming, J., Jr.: The Effect of 2450 MHz Microwave Irradiation of the Growth of Mice. <u>J Microwave Power</u> <u>8</u>: 111, 1973. 17. McAfee, R.D., Thurman, E., Mendez-Cordova, R., and Locke, W.: Adrenergic Blocking Agents Modify Catecholamine Stimulation of Short-Circuit Current in Isolated Frog Skin. <u>Proc Soc Exptl Biol and Med</u> <u>146</u>: 276, 1974. 18. McAfee, R.D., Cazenavette, L.L., and Shubert, H.A.: Thermistor Probe Error in an X-Band Microwave Field. <u>J Micorwave Power</u> <u>9</u>: 177-180, 1974. 19. McAfee, R.D., Cazenavette, L.L., and Holland, M.G.: Screening for Cataracts. <u>Conf on the Biologic Effects of Nonionizing Radiation, Annals of the New York Academy of sciences</u>, Vol. 247, p. 135-141, 1975. 20. Longacre, A., Jr., Elder, S.T., and McAfee, R.D.: A Blood Pressure Monitor/Conditioner. <u>IEEE Publication No. 77CHO Region III</u> p. 371-374, 1977. 	

INVESTIGATOR'S BIBLIOGRAPHY

<p>NAME</p> <p>McAFEE, Robert D., Ph.D.</p>	<p>SOCIAL SECURITY NO.</p> <p>489-34-4953</p>
<p>PUBLICATIONS (Not to exceed three pages for each investigator.)</p> <ol style="list-style-type: none"> 21. Elder, S.T., Longacre, A., Jr., Welsh, D.M., and McAfee, R.D.: Apparatus and Procedure for Training Subjects to Control Their Blood Pressure. <i>Psychophysiol</i> <u>14</u>: 68-72, 1977. 22. Elder, S.T., Welsh, D.M., Longacre, A., Jr., and McAfee, R.D.: Acquisition, discriminative stimulus control, and retention of increases/decreases in blood pressure of normotensive human subjects. <i>J App Behav Anal</i> <u>10</u>: 381-389, 1977. 23. Elder, S.T., Verzwylt, E.A., and McAfee, R.D.: Conditioned diastolic blood pressure as a function of induced masseter muscle tension. <i>Psychophysiology</i> <u>15</u>: 422-428, 1978. 24. Elder, S.T., Gamble, E.H., McAfee, R.D., and Van Veen, W.M.: Conditioned Diastolic Blood Pressure. <i>Physiol Behav</i> <u>23</u>: 875-880, 1979. 25. McAfee, R.D., Longacre, A., Jr., Bishop, R.R., Elder, S.T., May, J.G., Holland, M.G., and Gordon, R.: Absence of Ocular Pathology after Repeated Exposure of Unanesthetized Monkeys to 9.3 GHz Microwaves. <i>J Microwave Power</i> <u>14</u>: 41-44, 1979. 26. McAfee, R.D., Ortiz-Lugo, R., Bishop, R., Gordon, R.: Absence of Deleterious Effects of Chronic Microwave Radiation on the Eyes of Rhesus Monkeys. <i>Ophthalmology</i> <u>90</u>:1243-1245, 1983. 	

MS-16

NRC FORM 218 (4-76) NRCM 0240		U.S. NUCLEAR REGULATORY COMMISSION		DATE 7/10/85	
TELEPHONE OR VERBAL CONVERSATION RECORD				TIME 9	<input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.
<input checked="" type="checkbox"/> INCOMING CALL		<input type="checkbox"/> OUTGOING CALL		<input type="checkbox"/> VISIT	
PERSON CALLING Robert McAfee		OFFICE/ADDRESS VAMC / New Orleans		PHONE NUMBER FTS 682-5811	EXTENSION
PERSON CALLED Cain		OFFICE/ADDRESS		PHONE NUMBER	EXTENSION
CONVERSATION					
SUBJECT Request to delay response to deficiency letter					
SUMMARY The licensee requested that they be granted more time to respond to the 5/23/85 deficiency letter. They requested and were granted an extension to 8/1/85.					
REFERRED TO: 17-01322-07				<input type="checkbox"/> ADVISE ME OF ACTION TAKEN.	
ACTION REQUESTED				INITIALS	
				DATE	
ACTION TAKEN				INITIALS	
				DATE	

T2