DRAFT INSPECTION REPORT FORM

1. Name and address of licensee
Veterans Administration Hospital
Wilshire and Sawtelle Boulevards
Los Angeles, California 90073

2. Date of Inspection 9/28/73

3. Type of Inspection Announced Reinspection

4. License number(s), docket number (s), number and date of last amendment for each license. Category and Priority of each licensee.

04-00181-04, Amendment No. 61, March 20, 1973, G(1), II

5. Date of previous inspection February 3, 1972

6. Proprietary information None

7. Scope of inspection if other than routine Routine

8. Participants (Licensee representatives and titles, State representatives, etc.)

Mr. L. Wettereau, Physicist, Nuclear Medicine Service, RSO

9. Management Interview (Information required for N/C cases)

W. H. Blahd, M.D., Chief, Nuclear Medicine Service
Mr. L. Wettereau, RSO

10. Action and Date: Letter to Licensee

AEC-591 Clear September 28, 1973

AEC-591 N/C

11. Recommend reinspection date September 28, 1974

12. H. S. North (Inspector) 10/16/73 (Date of Report)

H. E. Book (Reviewer) 10/16/73 (Date of Review)

Attachment to Section 1010

Veterans Administration Hospital
Los Angeles, California 90073
License No. 04-00181-04

13. Inspection Summary

The inspection of September 28, 1973 disclosed no items of non-compliance or health and safety significance. The inspector did observe that the licensee is operating under difficult conditions due to space limitations resulting from the closure of Wadsworth Hospital. At the time of the inspection, Wadsworth Hospital had been razed, and excavations are in progress for a new 800-bed hospital. The inspection was concluded with the issuance of a Form AEC-591 reflecting no items of noncompliance. The previous inspection disclosed no items of noncompliance and resulted in the issuance of a clear AEC-591.

14. Summary of Licensed Program

The licensee operates, under a broad license, a program of nuclear medicine diagnosis and therapy with major activities in various fields of research. A nuclear pharmacy is presently active. Summaries of the licensee's Nuclear Medicine Service are contained in the Nuclear Medicine Service Report for Fiscal Year 1973, which is attached to this draft report as Appendix A. This report notes that a total of 7,434 procedures were performed which included approximately 1,800 in-vitro tests. The licensee also treated

ten cases of hyperthyroidism and one case of thyroid CA using iodine-131 and made therapeutic use of phosphorus-32 in five cases. The personnel associated with the use of licensed materials in the Nuclear Medicine Service are described on Page 7 of Appendix A of this report. In addition, the Research Service has staffs that operate in various laboratories under the direct supervision of specifically authorized supervising individuals. The licensee estimated that procurement of licensed material by the hospital is in the range of approximately 25 curies per year, mostly technetium-99m. The licensee is currently using no generators and is buying all technetium in precalibrated form. On the basis of discussion with the licensee and as a result of the examination of records, it appeared that the use of materials was as authorized by the license.

15. Organization and Administration

The current hospital Director is Mr. John Cox, who at the time of the inspection was a patient in the hospital. The Assistant Director, Joseph Burmingham, was acting for Mr. Cox. Reporting to the Director as the Administrative Service is Doctor Ed Wright, Chief of Staff. Reporting to Dr. Wright are various medical services, plus the Research Service, who use radioactive material in medical and biological research. Also reporting to Dr. Wright

is Dr. Blahd as the Chief of the Nuclear Medicine Service. Mr. Wettereau, RSO, reports to Dr. Blahd. Mr. Wettereau of the Nuclear Medicine Service is identified on Page 7 of Appendix A. The VA Hospital is continuing a program of residency and technician training, and this program is described on Page 11 of Appendix A. Mr. Wettereau, as RSO, provides training for users of radioactive materials on a continuing basis. This activity requires approximately 5% of his time. The training course repeats quarterly, and attendance may be a prerequisite to ~~these~~ licensed materials based on the decision of the Isotopes Committee. Attendance at the course is open to users of licensed materials _____ for refresher training. In addition to the training program described, Mr. Wettereau devotes approximately 10% of his time to the training of resident physicians and nuclear medicine technologists. It is noted that the principal user of licensed material at this facility, based on curies or quantity of materials handled, is the Nuclear Medicine Service. The Research Service, which encompasses a much larger number of individuals, actually uses relatively small quantities of materials in the form of tracer activity. Mr. Wettereau's duties include supervision of receipt, possession and use of licensed materials and has authority to ~~check on~~ terminate activities in the case of radiation safety problems. The licensee has a Radioisotopes Committee that consists of the individuals named in an attachment to the licensee's application of January 21, 1965, with the exception of Dr. James Davis who has been replaced by Dr. Otis H. True, Chief,

Radiotherapy-Radiology Service. Mr. Wettereau is not a member of the Committee but is in an advisory capacity through Dr. Blahd. The licensee has in fact two separate Committees, the Radioisotope Committee and the Human Use Committee, both of which must evaluate proposals for use of materials in humans. The Radioisotope Committee also approves use of materials in connection with research activities, which do not involve human use. The licensee maintains well documented files reviewing Committee actions on proposed uses and users. It appeared that the Committee is actively carrying out its responsibilities as described in the Radioisotcpe Committee Administrative Procedures attachment to t[illegible] application of January 21, 1965.

16. Facilities

The licensee's clinical facilities consist of two clinical areas on the hospital grounds which provide space for the radiopharmaceutical administration and patient counting facility, a nuclear pharmacy and the old hot lab in Building 114, which is used to handle iodine-131. In addition, the licensee maintains one thyroid clinic as a part of the Nuclear Medicine Service. The licensee has approximately 24 laboratories using small quantities of materials in in-vitro and small animal research. These activities are located in Buildings 114, 115 and T85. During the inspection, the inspector toured the Radioisotope

Research Laboratories in Building 114, where the licensee was using tri[illegible] liquid scintillation counting systems for analysis of low level samples, and labeled organics and biological materials were stored in two different refrigerators or freezers. The whole body counter is in a small building adjacent to Building 114, which is presently equipped with 5 x 8 inch NaI detector and a Nuclear Data 512 Channel Analyzer. The Nuclear Medicine Service facilities in Building 213 include dual probe and electrolinear scanner and uptake equipment in addition to the scintillation camera and Cianicon Computer. The facility also has a dual opposed three-inch NaI scintillation detector, TCBOR counter scaler and apparatus to perform xenon-133 pulmonary studies. The licensee maintains control of access to locations where licensed materials are stored or used by means of personal surveillance or lock and key.

17. Equipment

A listing of the equipment available to the Nuclear Medicine Service is contained in Appendix A, Page 8, under "Equipment, Present Inventory." In addition, the licensee has a number of freezers and refrigerators used for storage of licensed materials in the research programs, as well as liquid scintillation counting equipment. At the time of the inspection, the licensee's inventory was stated to be as reported in the document dated September 28, 1973, which is attached as Appendix B.

18. Radiological Safety Procedures

The licensee's procedures remain as identified in Paragraphs 21 and 23 of the license. The procedures had not been changed without prior approval of DOL. Mr. Wettereau stated that when an individual first receives approval to use licensed materials they are required to complete a Form AEC-4, at which time they are provided with a copy of the procedures and invited to attend the Health Physics Radiation Safety Training Course. Attendance at this course may be a prerequisite to receiving permission to utilize materials unless the Radioisotopes Committee is satisfied concerning the level of training and proficiency of the individual. It was noted that Forms AEC-3 were posted at all facilities visited during the inspection. The licensee had attached to each AEC-3 a small typewritten notice informing the readers that copies of the AEC license and the licensing procedures were available for review as were the AEC's regulations in compliance with 10 CFR 19 at a specified location. The location was Mr. Wettereau's office, and his name and office location were provided.

19. Personnel Monitoring and Exposure to External Radiation

The licensee uses monthly film badges supplied by Radiation Detection Company. The licensee maintains records of exposure in terms of dose per month and per quarter. Information

equivalent to Forms AEC-5 are maintained. Finger rings are used by individuals who are likely to receive high extremity exposures, principally due to handling technetium. Pocket dosimeters are available but are not routinely used. During 1972, the high quarterly whole body exposure was 480 millirem, and the finger ring measured high exposure was 1560 millirem. During 1973 through August, the maximum quarterly whole body exposure was 225 millirem. The maximum finger ring measured exposure was 1850 millirem. The average exposure ranges from approximately 25 to 50 millirem per month.

The licensee has a requirement placed by Condition 18 which requires the performance of bioassays on individuals using at one time more than 100 millicuries of tritium in an uncontained form. The licensee stated that no such use of tritium had occurred, and no bioassays had been performed for tritium. The licensee does perform spot check bioassays on radioisotope technicians, however, the results of the spot checks have been negative.

20. Exposure of Employees to Airborne Radioactive Materials

The only significant potential for exposure to airborne activities would be in the case where patients are administered xenon-133 for pulmonary studies. Mr. Wettereau stated that a gas is administered

in a saline solution by injection and that the patient's exhaled breath is collected in a Douglass bag and vented through a chemical fume hood in one of the counting facility laboratories.

21. Effluents to Unrestricted Areas

This licensee makes no intentional sewer disposals of radioactive materials. Some small disposal probably occurs during washing of glassware. This licensee has in the past buried waste at their facility. There have been no recent burials. Waste is disposed by transfer to California Salvage Company. Since the last inspection, the licensee has disposed of a total of 53, 55-gallon barrels of waste which contained 629.8 millicuries of activity. The licensee maintains records of disposal in the form of disposal company ~~supply~~ records.

22. Miscellaneous Surveys, Evaluations and Records

Mr. Wettereau stated that he performs surveys for record of activity using licensed materials at this facility. He stated that he also instructs and advises users of materials to contact him in the event of any problems. Mr. Wettereau maintains a log-book which records the results of surveys and problems. These records include the date, dose rates or measured maximum contamination, the results of ~~sewer~~ tests, with space for remarks. The

frequency of visits to the laboratories varies from weekly to approximately every few month depending upon the use of materials at that facility. Most of the surveys indicate no significant levels. Wettereau makes a particular point of conducting thorough surveys of vacated facilities including plumbing and records the results for future reference. The survey records indicated that ~~four~~ surveys had been performed and were well documented.

23. Special License Conditions

None.

24. Posting and Labeling

A tour of the licensee's facilities disclosed that locations of use and storage were posted in accordance with Regulatory requirements. A spot check of materials in storage disclosed that containers were labeled in accordance with Regulatory requirements. Forms AEC-3 and notices relating to Part 19 requirements were posted in each facility or laboratory where licensed materials were used.

25. Independent Measurements

None.

26. Operations Observed

None.

27. Incidents, Overexposures, Theft or Loss, Equipment Malfunction

Mr. Wettereau maintains a log of problems and unusual occurrences. From this record, the following items of interest were noted:

A shipment from Cambridge Nuclear Pharmaceutical Corporation, P. O. Box 528, Princeton, New Jersey 3540 -- A packing slip from this supplier dated March 21, 1972, identified the shipment as sodium chloride-24, $NaCl^{24}$, at 2.2 millicuries per milliliter containing two milliliters with the activity shipped as 0.4 millicuries. The licensee's receipt analysis showed that the shipment contained 22 millicuries of sodium-24. A telephone call by Wettereau to Cambridge Nuclear did not result in an appropriate response according to Wettereau.

In a second case, a shipment from Isomed was stated to contain 50 millicuries technetium-99 and was labeled as of April 5, 1972; however, the material was actually shipped April 17, 1972 and on that date contained 47.9 millicuries.

Mr. Wettereau noted one occurrence on April 19, 1973, in which a resident physician preparing to do a Bolus IV injection of 15 millicuries technetium-99 pertechnetate inserted the needle in the patient's arm after having applied a tourniquet above the injection site, verified the presence of veinous blood, removed the tourniquet, removed the hypodermic from the patient's arm and ejected the contents of the hypodermic on the patient rather than injecting the material into the vein as intended. Mr. Wettereau stated that the particular resident physician in question was a pathologist who he stated apparently had had insufficient contact with living patients. Wettereau was notified and, with the assistance of the physician and the nursing staff, the patient was decontaminated. The resident physician terminated his training program without completion.

On September 10, 1973, a sink overflowed in a carbon-14 lab resulting in localized flooding. Wettereau participated in the cleanup of the facility and surveyed the floor and made certain that it was decontaminated to background levels.

Mr. Wettereau stated that there had been no unreported incidents or unusual occurrences which he felt were necessary to report to the Commission.

28. Other Information or Continuation From Previous Paragraphs

Addition to Paragraph 23 -

The licensee has two sealed sources, a Model R-30 cobalt-60 source and a Model RA-1A strontium-90 Medical Applicator. The licensee performs leak tests at regular intervals. Records of leak tests are maintained. Leak tests have been performed at the required intervals, and the records disclosed no evidence of leakage.

Attachments:
1. Appendix A
2. Appendix B

RCS 10-108

NUCLEAR MEDICINE SERVICE REPORT

VA WADSWORTH HOSPITAL CENTER, Los Angeles, Calif. 90073

CHIEF William H. Blahd, M. D.

FISCAL YEAR 1973

DUE 10 working days after receipt of this form

I. DIAGNOSIS

	FORM	PURPOSE	DOSAGE RANGE	TOTAL 7,446 NO. OF PTS. VISITS	TOTAL 7,434 NO. OF PROCEDURES OR SCANS
		By-product Material			
		131-Iodine			
1.1	Iodide	Thyroid function (uptake)	2-10 µCi	625	206
1.2	Iodide	Thyroid scan	100-500 µCi	101	101
1.3	IHSA	Plasma volume	10-15 µCi	392	196
1.4	IHSA	Cardiac scan-output			
1.5	IHSA	Cisternography	100 µCi	111	37
1.6	MAA	Lung scan			
1.7	MAA	Liver scan			
1.8	Rose Bengal	Liver function	250 µCi	1	1
1.9	Hippuran	Kidney function	250 µCi	74	74
1.10	Hippuran	Kidney scan	250 µCi	73	73
1.11	Fats/Fatty Acids	GI absorption			
1.12	T-3	In vitro			
1.13	T-4	In vitro			
1.14	Iodide	Thyroid function ½-life	2-5 µCi	108	18
1.15	Iodide	Thyroid & chest scan	5 mCi	38	19
1.16					
1.17					

Appendix C

	FORM	PURPOSE	DOSAGE RANGE	NO. OF PTS. VISITS	NO. OF PROCEDURES OR SCANS
		125-Iodine			
2.1	Iodide	Thyroid function (uptake)			
2.2	Iodide	Thyroid scan			
2.3	IHSA	Plasma volume			
2.4	T-3	In vitro	In vitro	-----	1451
2.5	T-4	In vitro	In vitro	-----	241
2.6	Digoxin	In vitro	In vitro	------	118
2.7	Insulin	In vitro			
2.8	Renin	In vitro			
2.9	Australian Antigen	In vitro			
2.10	RISA	Blood Volume	5 µCi	15	15
2.11					
2.12					
		99m Technetium			
3.1	Pertechnetate	Brain scan	15-20 mCi	1454	1454
3.2	Pertechnetate	Thyroid scan	1-6 mCi	6	6
3.3	Pertechnetate	Thyroid uptake			
3.4	Pertechnetate	Cerebral blood flow	15-20 mCi	953	953
3.5	Pertechnetate	Renal blood flow			
3.6	Pertechnetate	Joint scan			
3.7	Pertechnetate	Cardiac scan			
3.8	Pertechnetate	Arterial flood flow			
3.9	Pertechnetate	Cardiac blood flow			
3.10	Pertechnetate	Brain blood flow			
3.11	Pertechnetate	Parotid scan	10 mCi	1	1
3.12	Sulphur Colloid	Liver scan	500 µCi-2.5 mCi	862	862
3.13	Sulphur Colloid	Spleen scan	500 µCi-2.5 mCi	50	50
3.14	Sulphur Colloid	Bone marrow scan	10 mCi	10	10
3.15	Sulphur Colloid	Cardiac scan	8 mCi	4	4
3.16	Sulphur Colloid	Lymphangiogram			
3.17	Sulphur Colloid	Stomach & Duodeum			
3.18	Albumin	Cardiac scan			
3.19	Albumin	Cysternogram			
3.20	Human Serum Albumin Microspheres	Lung scan	3 mCi	424	424
3.21	Antimony-sulphur Colloid	Aerosol lung scan			
3.22	Sulfur Colloid	Vena Cava	2-4 mCi	42	42
3.23	Tc DTPA	Kidney Scan	1-3 mCi	63	63
3.24	Sulfur Colloid MA	Venagram	2 mCi	1	1
3.25	TcO_4 Meckle's Diverticulum		10 mCi	2	2
	Tc-POP	Bone	15 mCi	279	279
	Tc-DIP	Bone	15 mCi	10	10

	FORM	PURPOSE	DOSAGE RANGE	NO. OF PTS. VISITS	NO. OF PROCEDU OR SCAN
		51-Chromium			
4.1	Sodium Chromate	RBC Survival	75-150 µCi	117	18
4.2	Sodium Chromate	Spleen scan			
4.3	Sodium Chromate	RBC volume	50-75 µCi	72	24
4.4	Sodium Chromate	Spleen sequestration	75-150 µCi	150	15
4.5	Sodium Chromate	G.I. bleeding			
4.6	Sodium Chromate	Liver/Spleen ratio			
4.7	Sodium Chromate	Platelet survival			
4.8	Albumin	GI protein loss			
4.9					
4.10					
4.11					
		59-Iron			
5.1	Chloride	Iron turnover			
5.2	Chloride	Body distribution, external counts			
5.3	Citrate	Iron turnover	<20 µCi	90	6
5.4	Citrate	Plasma clearance	<20 µCi	90	6
5.5	Sulphate	Iron absorption			
5.6	Amomonium Citrate In vitro	Iron binding capacity			
5.7					
5.8					
5.9					
5.10					
		197 or 203-Mercury			
6.1	Chlormerodrin	Kidney			
6.2	Chlormerodrin	Brain scan			
6.3					
6.4					
		198-Gold			
7.1	Colloid	Liver scan			
7.2	Colloid	Lymph node scan			
7.3					
7.4					
7.5					

	FORM	PURPOSE	DOSAGE RANGE	NO. OF PTS. VISITS	NO. OF PROCEDU OR SCAN
		111-Indium			
8.1	Transferin	Lymph node scans			
8.2	DTPA	Cisternogram	500 µCi	204	68
8.3					
8.4					
		113^{m}-Indium			
9.1	Colloid	Liver scan			
9.2	Colloid	Lung scan			
9.3	Colloid	Cardiac scan-output			
9.4					
9.5					
		57-Cobalt			
10.1	Vit. B_{12}	Absorption (P.A.)	0.5-1 µCi	114	57
10.2	Vit. B_{12}	Absorption (G.I.)			
10.3	Vit. B_{12}	Serum binding capacity			
10.4					
10.5					
		58 or 60-Cobalt			
11.1	Vit. B_{12}	Absorption (P.A.)			
11.2	Vit. B_{12}	Absorption (G.I.)			
11.3					
11.4					
11.5					
		85-Strontium			
12.1	Nitrate	Bone scan			
12.2	Chloride	Bone scan			
12.3					
12.4					
12.5					

	FORM	PURPOSE	DOSAGE RANGE	NO. OF PTS. VISITS	NO. OF PROCEDURES OR SCANS
		18-Fluorine			
13.1	Sodium fluoride	Bone scan	1-5 mCi	39	39
13.2					
13.3					
		133-Xenon			
14.1	Gas	Cardiac studies			
14.2	Gas	Pulmonary studies	5-10 mCi	2	2
14.3	Saline	Muscle blood flow	2-10 mCi	72	72
14.4	Saline	Cerebral blood flow			
14.5					
14.6					
14.7					
		3-H Tritium			
15.1	Digoxin	In vitro			
15.2					
15.3					
		Other			
16.1	Methionine Se 75	Pancreas Scan	250 µCi	30	30
16.2	Hydrogen 3 (Tritium)	Total Body Waters	150-200 µCi	28	14
17.1	Bromine 82	Extracellular Water	25 µCi	28	14
17.2	Sodium 24	Exchangeable Sodium	150-200 µCi	28	14
17.3	K 40	Total Body Potassium	-----	31	31
17.4	Gallium 67	Gallium	4-5 mCi	342	114
	-----	Ultrasound	----	168	168
18.1	-----	TSH studies	10 units	45	15
18.2		Thyroid Followup		61	
18.3					
19.1					
19.2					
19.3					

II. THERAPY

	FORM	PURPOSE	DOSAGE RANGE	NO. OF PTS. VISITS	NO. OF PROCED OR SCA
		131-Iodine			
20.1	Iodide	Hyperthyroidism	2-20 mCi	10	10
20.2	Iodide	Thyroid CA	50-150 mCi	1	1
20.3	Iodide	Heart Disease			
		198-Gold			
21.1	Colloid	Intercavitary CA			
21.2	Colloid	Interstitial CA			
		32-Phosphorous			
22.1	Phosphate	Polycythemia Vera			
22.2	Phosphate	Leukemia			
22.3	Phosphate	Bone CA			
22.4	Colloidal chromic	Intercavitary CA			
22.5	Phosphate	Interstitial CA	10-50 mCi	1	1
	Phosphate	Interstitial (Arthritis)	500 µCi	24	4

III. Scope of Services

1. Coverage: 40 hrs per week, plus emergency callback capability

2. Sites: There are 38 locations within our hospital where radioactive materials were used for any purpose.

IV. Cost

1. Personnel (Name, Position Title, Grade, State Licensure, Certification or Registration)

W. H. Blahd, M. D.
Chief, Nuclear Medicine Service (DM&S 15)
California license
Certified in Nuclear Medicine, and Internal Medicine
Fellow, American College of Physicians

M. A. Winston, M. D.
Assistant Chief, Nuclear Medicine Service (DM&S 14)
California license
Certified in Nuclear Medicine, and Internal Medicine

G. T. Krishnamurthy, M. D.
Staff Physician, Nuclear Medicine Service (DM&S 14)
Licensed in California and Washington
Certified in Nuclear Medicine
Fellow, American College of Physicians

J. H. Pritchard, M. D.
Staff Physician, Nuclear Medicine Service (DM&S 14)
California license
Certified in Nuclear Medicine

L. W. Wetterau, B. A., Physicist, GS-12

Manuel Tubis, Ph. D., Clinical Radiobiochemist, GS-15

Panchita B. Thomas, B. S., Biologist, GS-11

Robert J. Huebotter, B. A., Biologist, GS-11

Jerome J. Gambino, Ph. D., Biologist (Instructor), GS-13

Carol F. Walsh, Health Technician (Instructor), GS-9, ARRT(RT Nucl Med)

Billie Jean Kinney, Health Technician, GS-9

Shirley N. Stichler, Health Technician GS-7, ARRT (RT Nucl Med)

IV. Cost

1. Personnel (continued)

Vacancy to be filled - Health Technician, GS-7

Kazuko Endow, Secretary-Steno, GS-6

Ruth V. Adams, Dictation Machine Transcriber, GS-4

TOTAL SALARY COST: $ 237,112

2. Supplies: $ 60,000

3. Equipment

3.1. Purchase cost: $ 59,998

3.2. Repair cost: 8,300

V. Special Items

1. Personnel needs: GS-4 Clerk-typist (new position)

2. Equipment

2.1. Present inventory

2.1.1. Imaging equipment

Nuclear-Chicago, Pho/Gamma Scintillation Camera System, Model HP, 1972

Nuclear-Chicago, Pho/Gamma III Scintillation Camera System, Model 6403, 1969

Searle Nuclear-Chicago, Clincom, Model PDS-3, 1973

Radx, 70 mm camera, Model M-600, 1972

2.1.2. Scanners

Picker Nuclear, Magnascanner II, 3" crystal, Model 6184-D, 1964

Picker Nuclear, Magnascanner 500, 3" crystal, Model 2806-K, 1970

Picker Nuclear, Magnascanner III, 5" crystal, Model 2852, 1972

V. Special Items

2. Equipment

2.1.2. Scanners (continued)

Picker Nuclear Magnascanner 500, 5" crystal, Model 500, 1969

Nuclear-Chicago, Pho/Dot V, 5" crystal, Model 1775, 1973

2.1.3. Probes

Nuclear-Chicago Probe-Scaler Assembly, Model 820582, 1970

Nuclear-Chicago Probe-Scaler Assembly, Model 8725, 1971

2.1.4. Other equipment

Picker Renogram Assembly Dual Analyzer/Ratemeter, Model 620-085, 1966

Nuclear-Chicago Auto/Gamma Spectrometer, Model 1085, 1971

Packard Tri/Carb Liquid Scintillation Spectrometer, Model 3320, 1971

Kodak X-Omat Dry Film Processor, Model M6A-N, 1970

Kodak X-Omat Dry Film Processor, Model M6A-N, 1972

Picker Nuclear Ultrasonoscope, Model 1020-2, 1972

Olivetti Desk Programmer, Model 101, 1969

Whole-Body Counter (constructed in 1959)

5" steel chamber

4" x 8" crystal

Nuclear Data 512-Channel Analyzer System, Series 2200, 1971

V. Special Items

2. Equipment (continued)

2.2. Needs

2.2.1. Initial equipment

Nuclear Chicago 2-channel, 3" Automatic Gamma Counter with eye-level control, Model 1185D	$ 14,500
Nuclear Chicago Model 09009 Dual Isotope Analysis Display for H.P. Camera	4,500
Nuclear Chicago Whole-body Scanning Table	22,000
Refrigerated Centrifuge - International PR-J with 8-place head	2,544
Van Waters & Rogers, Sterilizer, Steri Quick, #58626-007	650
Van Waters & Rogers, Waterbath, Shaker, #13300-007 with Tray, #13301-065	770
Total Cost	$ 44,964

2.2.2. Replacement equipment

04-6493 Scanner, Ser. #196 - replacement requested is Ohio Nuclear Dual 3" Scanner, M.C. price	$ 33,000
18-0614 Camera, Osc. Trace - replacement requested is Riverside Bio Engineering 70 mm camera M-800	1,795
04-2214 Counter Prop Gas Flow Ser. #569 - replacement requested is Nuclear Chicago Model 8725	3,000
04-2240 Counter, Well Scintillation - replacement requested is Baird Atomic M-98810C	1,450
18-0470 Camera and Video Monitor - replacement requested is Shibaden HV-14 & Shiba VM-903	738
Total Cost	$ 39,983

V. Special Items

2. Equipment (continued)

2.3. Repairs

2.3.1. 24 repair service calls

2.3.2. Down time, inpatient-hours/week: 1 hr/week

2.3.3. Service is readily available

2.3.4. Service is not by VA personnel.

3. No untoward reactions to any clinical procedures.

4. Space used for clinical activities:

4.1. Total space in square feet: 4,000 sq ft

4.2. Number of rooms: 20

4.3. Service is not situated in one geographic area

5. Training and Education Activities

The Nuclear Medicine Service offers training at three levels: physician, radiopharmacist, and technologist. Physicians seeking eligibility for certification by the American Board of Nuclear Medicine take a two-year program. During this time, resident physicians receive instruction in the theoretical and practical aspects of diagnostic and therapeutic nuclear medicine. Didactic and laboratory instruction is provided in relevant basic sciences, including medical nuclear physics, radiation biology, radiation protection, instrumentation, radiopharmaceuticals, and statistics. In the second year of training, emphasis is on independent investigation, and the residents' responsibility in the nuclear medicine clinics is progressively increased. The program is structured so as to provide balanced training in the clinical and research applications of radionuclides.

The radiopharmacist training program provides one year of training to qualified licensed pharmacists. Trainees attend the University of Southern California for two academic semesters, receiving didactic and laboratory training. Upon completion of the academic portion of the program, trainees intern for a three-month period at VA Wadsworth Hospital Center. Their internship provides practical experience in the Nuclear Medicine Service Radiopharmacy Laboratory where they participate in the preparation of radiopharmaceuticals used in routine clinic procedures, observe the performance of clinical procedures, and also participate in developmental research in radiopharmaceuticals. During this period, the trainees attend many of the same lectures and seminars attended by physicians in training.

V. Special Items

5. Training and Education Activities (continued)

The Technologist Training Program offers one year of training, including both theory and practice. Trainees attend and participate in many of the same lectures, laboratories, conferences, and seminars that the physicians in training attend. In addition, the technologists receive ample practical experience under the supervision of the training staff in the Nuclear Medicine Clinics and in vitro laboratories.

The Training Program in Nuclear Medicine at Wadsworth Hospital Center was implemented in May of 1969. During the period of time the Program has been in effect, a total of 10 physicians, 10 technologists, and 8 radiopharmacists have been or are being trained.

6. Research Activities - title of research project and investigator(s)

Treatment of Thyrotoxicosis in Graves' Disease
(W.H. Blahd and M.A. Winston)

A Comparison of Radioiron and Indium 111 Chloride
(W.H. Blahd, H.G. Berger)

Radiolabeled Anti-CEA for External Detection of GI Tumors
(W.H. Blahd, J.H. Pritchard, M. Tubis, and J.J. Gambino)

Body Composition Changes in Radiation Therapy of Malignancy
(W.H. Blahd and J.J. Gambino)

Urecholine, Glucagon, to Aid Pancreatic Scans
(M.A. Winston)

^{32}P Chromic Phosphate for Recurring Synovial Effusions
(M.A. Winston and R. Bluestone)

Detection of Increased Iron Absorption Using ^{57}CO
(M.A. Winston and P. Guth)

Technetium 99m-Penicillamine for Cholescintigraphy
(G.T. Krishnamurthy, M. Tubis, W.H. Blahd, and J.S. Endow)

Kinetics of Technetium-Labeled Skeletal Radionuclides
(G.T. Krishnamurthy, W.H. Blahd, and M. Tubis)

Gamma Camera Study of Venacaval Obstruction without Syndrome
(G.T. Krishnamurthy, M.D. Kehr, Z. Piotrkowicz, and W.H. Blahd)

Tc 99m and I 131-Labeled Metronidazole for Liver Imaging
(M. Tubis, W.H. Blahd, G.T. Krishnamurthy, and R. Suwanik)

V. Special Items

6. Research Activities (continued)

Indium 113m Sulfide Macroaggregate for Lung Scanning
(M. Tubis, M. B. Cohen, and C. D. Gilliam)

Technetium 99m-Penicillamine-Acetazolamide for Scanning
(M. Tubis and W. H. Blahd)

Indium 111 Colloid for Lymph Node Imaging
(H. G. Berger and W. H. Blahd)

7. Notable advance made in Nuclear Medicine Service within the past year

7.1. The Nuclear Medicine Service has recently acquired a Clincom system that will become an integral part of one of our scintillation cameras. It is anticipated that this dedicated computer system will provide improved diagnostic services and new avenues for clinical investigation.

7.2. Ultrasound B mode scanning has been used extensively during the past year as a complementary modality to nuclear medicine imaging procedures. It has greatly augmented our diagnostic capabilities and it is hoped that this technique will have even greater application during the coming year.

7.3. Two new radiopharmaceuticals have been devised during the past year. One of these, I 131 labeled-metronidazole, will be used for the detection of amebic abscesses of the liver. A second radiopharmaceutical, Tc 99m penicillamine, has been developed for imaging of the gallbladder.

7.4. A technique has been developed to improve imaging of the pancreas, involving the use of urecholine and pancreazymin. Early results using this technique have been encouraging.

7.5. The metabolism and distribution of a new radioisotope tracer, Indium 111, has been investigated. Preliminary studies suggest that this tracer may be extremely useful for bone marrow imaging, and for the evaluation of patients with hematologic disease associated with disordered bone marrow function.

VI. Significant Administrative Problems and Future Plans

1. Administrative Problems

1.1. One important problem has developed as a result of the earthquake of 1971 necessitating the relocation of the Nuclear Medicine Service into two clinical areas. It has been impossible to obtain through Administration, clerical help in one of these clinical areas. As a result, the efficiency of the Service operation in this area has been greatly hampered since Nuclear Medicine technicians have been required to perform clerical and secretarial work.

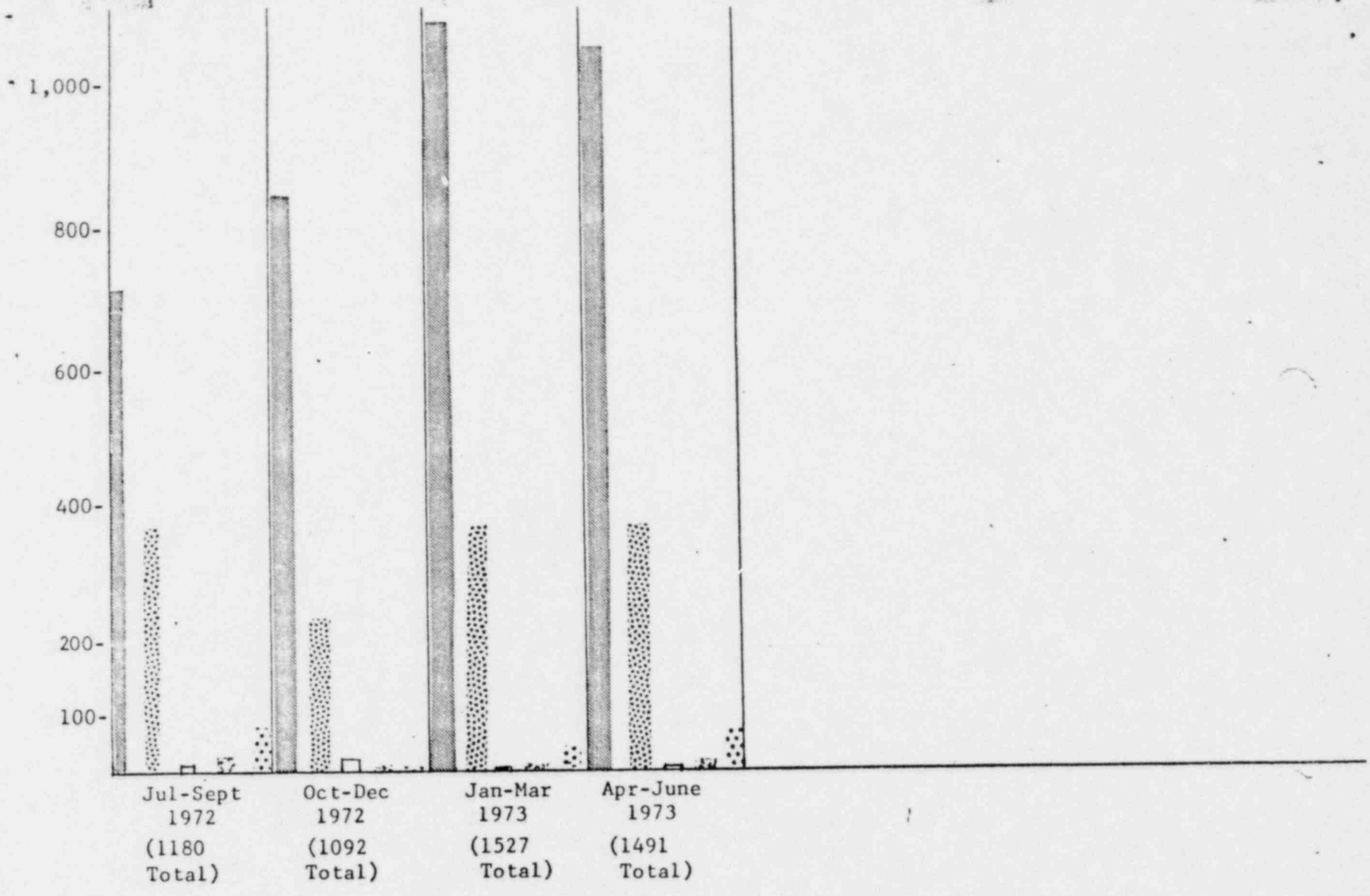
1.2. As a result of the increased workload and expanding activities of the Nuclear Medicine Service during the past several years requiring the handling and preparation of numerous and large quantities of radiopharmaceuticals, there has developed an urgent need for a radiopharmacist. Despite numerous appeals, it has not been feasible to obtain the services of such an individual despite the fact that he would play a major role in increasing the efficiency and productivity of Service operations.

1.3. The Service operates a scintillation camera in each of its two clinical areas. In one area an older camera is in use that urgently requires overhauling and upgrading, such that its performance will be comparable to the current standards of scintillation camera operation. The cost to upgrade the above instrument is approximately $12,000. Funds have been requested for this project but have not been forthcoming.

1.4. The Nuclear Medicine Service has need of replacement equipment funding as indicated above, and in particular, the need of a dual probe system to replace an existing rectilinear scanning instrument that would also improve and extend the efficiency and productivity of Service operations.

2. Future Plans

The Nuclear Medicine Service is implementing an In Vitro Laboratory for the performance of radioimmunoassay procedures. The Laboratory was constructed largely from surplus laboratory furniture and equipment, and is nearing completion. It is anticipated that the Laboratory will be functional within the next 30 days. According to present plans, a number of procedures will be immediately available, including T3, T4, and Digoxin analyses. Future plans include performance of other techniques, such as HAA, Vitamin B-12, TSH, and angiotensin. A major problem regarding this activity is the lack of adequate personnel. At the present time the Service has one high-level person who is assigned to this area on a part-time basis, who has available primarily the assistance of one or two technicians in training. Further personnel support for this Laboratory is urgently needed.



Key:
In-patients =
Out-patients =
Intermediate Care =
Patient-Member Svc. =
Brentwood Hospital =

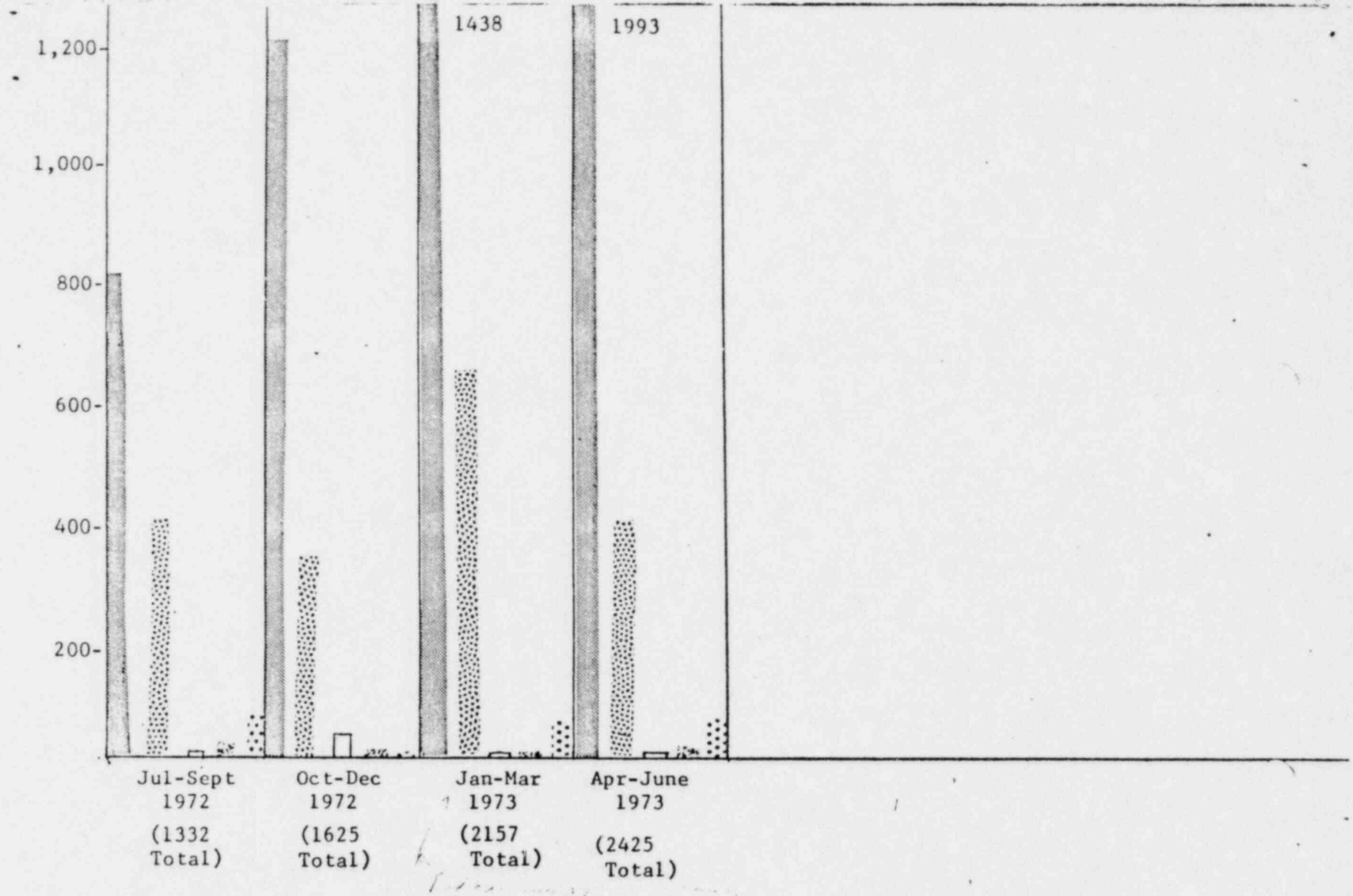
FY 1973

FY 1974

TOTAL PATIENT VISITS

NUCLEAR MEDICINE SERVICE

OPERATIONS PROFILE

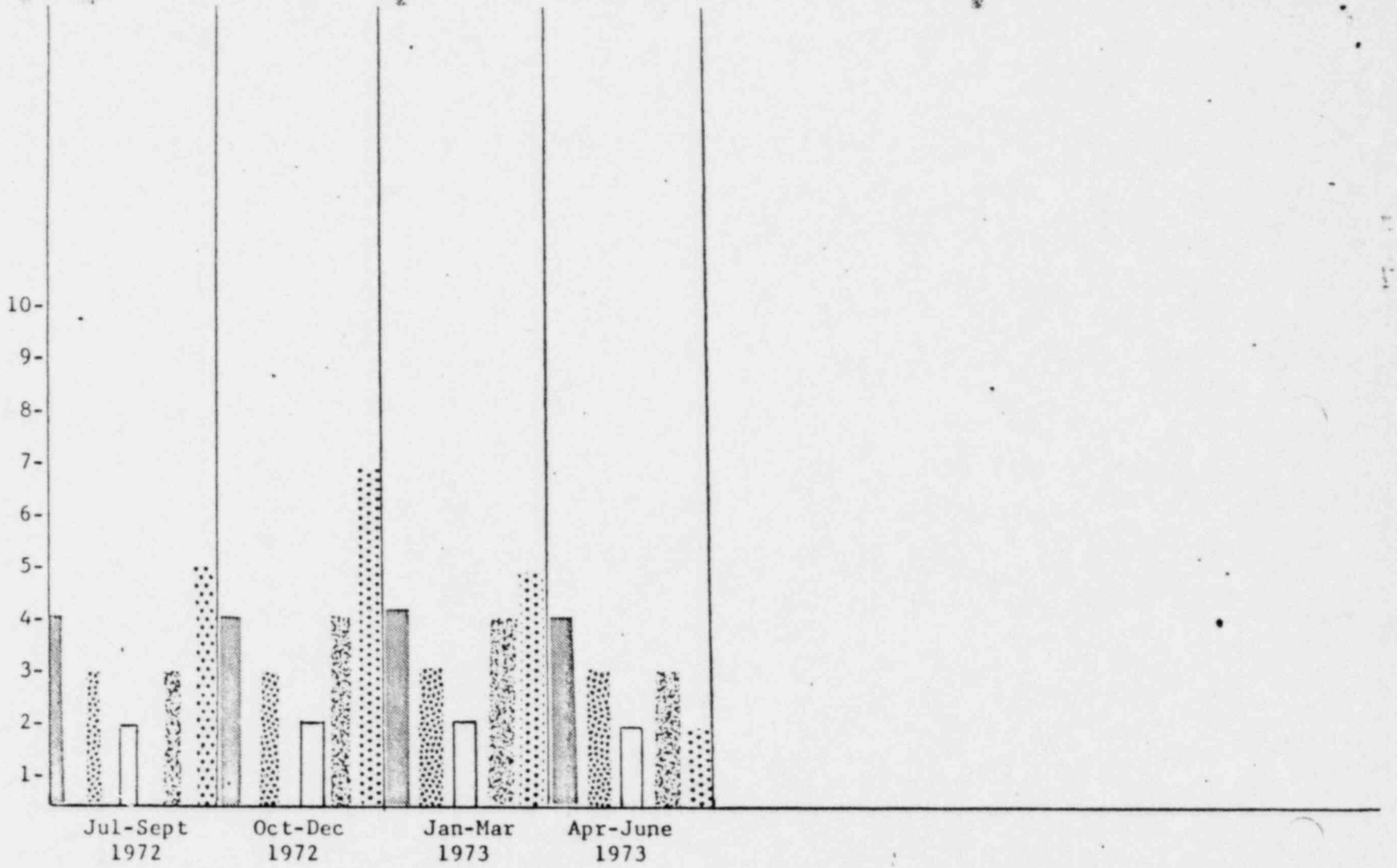


Key:
In-patients =
Out-patients =
Intermediate Care =
Patient-Member Svc. =
Brentwood Hospital =

TOTAL NUMBER OF TESTS PERFORMED

NUCLEAR MEDICINE SERVICE

OPERATIONS PROFILE

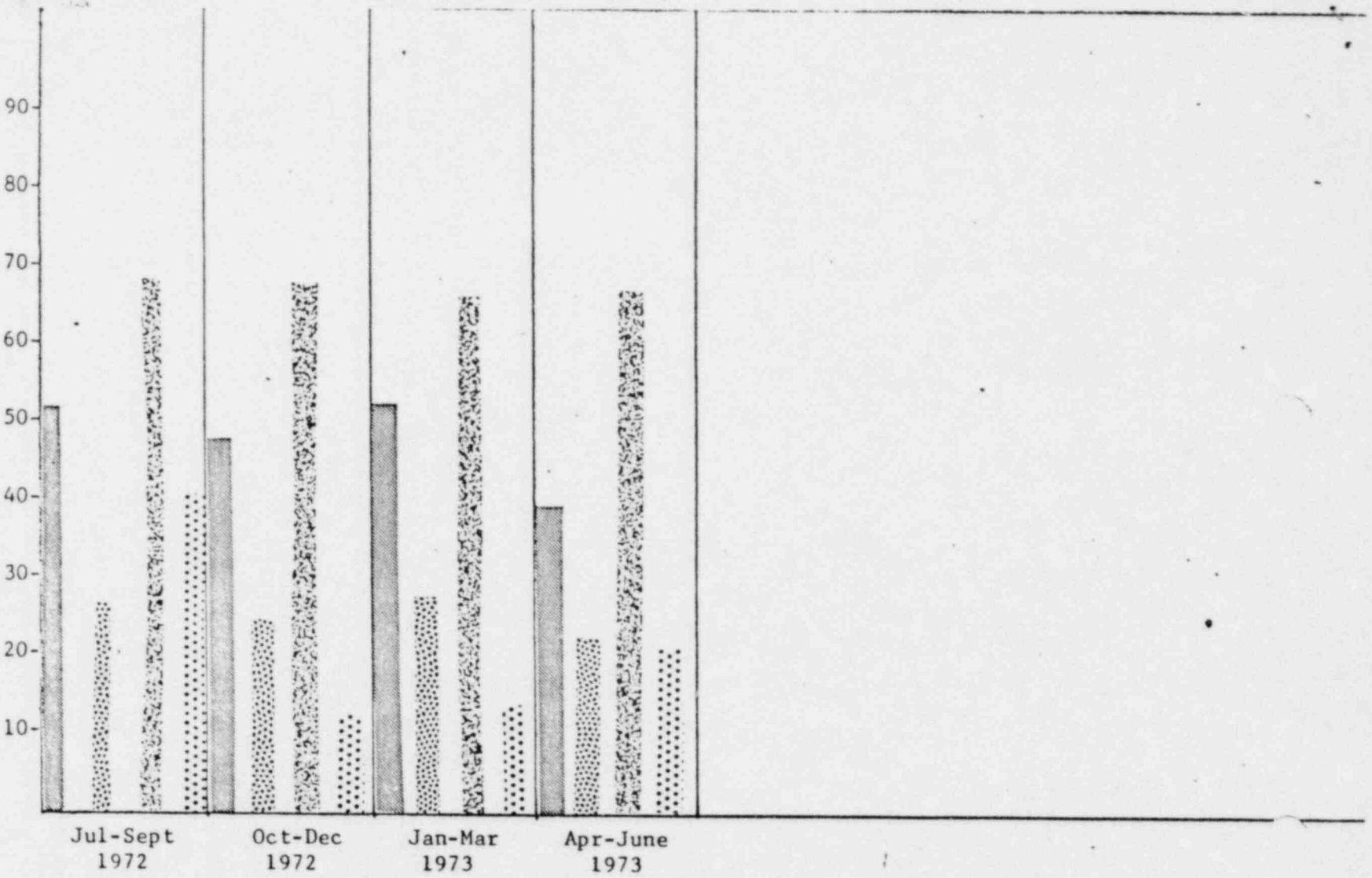


Key:
Physicians =
Radiopharmacists =
Technologists =
Residents (Other Services) =
Other Hadnurth Personnel =

NUMBER OF PERSONNEL IN TRAINING PROGRAM

NUCLEAR MEDICINE SERVICE

OPERATIONS PROFILE



Key:
Lectures = ▯
Seminars = ▯
Conferences = ▯
Laboratory Exercises = ▯

TRAINING ACTIVITIES IN HOURS

NUCLEAR MEDICINE SERVICE

OPERATIONS PROFILE

VETERANS ADMINISTRATION
WADSWORTH HOSPITAL CENTER
WILSHIRE AND SAWTELLE BOULEVARDS
LOS ANGELES, CALIFORNIA 90073

September 28, 1973

IN REPLY REFER TO: 691/172A

Mr. Harry North
U. S. Atomic Energy Commission

SUBJ: Radioisotope inventory as of 9-28-73 - License 04-00181-04

		Millicuries
^{3}H	as Labeled Compounds	158.520
^{14}C	as Labeled Compounds	18.127
^{35}S	as Labeled Compounds	0.675
^{45}Ca	as Labeled Compounds	0.495
^{51}Cr	as Labeled Compounds	2.100
^{59}Fe	as Labeled Compounds	0.138
^{57}Co	as Labeled Compounds	0.040
^{63}Ni	as Labeled Compounds	9.800
^{67}Ga	as Labeled Compounds	6.000
^{75}Se	as Labeled Compounds	1.500
^{99m}Tc	as Pertechnetate	400.000
^{99m}Tc	as Labeled Compounds	20.000
^{111}In	as Labeled Compounds	4.500
^{114}In	as Labeled Compounds	0.030
^{125}I	as Labeled Compounds	26.500
^{131}I	as NaI	27.970
^{131}I	as Labeled Compounds	5.200
^{133}Xe	as Gas in Saline	25.000
^{137}Cs	as Labeled Compounds	0.138

Show veteran's full name, VA file number, and social security number on all correspondence.

Appendix B

Mr. Harry North
U. S. Atomic Energy Commission

Sept. 28, 1973

		Millicuries
^{3}H	as Sealed Source-Varian Gas Chromatograph Model 02-0645 detector cell	199.000
^{60}C	as Sealed Source - Tracerlab Model R-30	0.060
^{90}Sr	as Sealed Source - eye therapy - Tracerlab Model RA-1A	24.900
	TOTAL	923.693 millicuries

L. W. Wetterau

L. W. WETTERAU
Radiation Safety Officer