

DEPARTMENT OF VETERANS AFFAIRS

Medical Center Batavia, N.Y. 14020

January 28, 1991

in Reply Reter to: 513/115

U. S. Nuclear Regulatory Commission Region 1 475 Allendale Road King of Prussia, PA. 19406 License No. 31-08946-02

SUBJ: Reply to A Notice of Violation

In reply to your letter dated December 28, 1990, the attached information is submitted documenting the specific actions taken to correct the issues identified in the NRC inspection conducted on September 18, 1990.

WILLIAM H. MANLEY

Medical Center Director,

Atts.

7507 111

REPLY TO A NOTICE OF VIOLATION Veterans Administration Medical Center Batavia, New York 14020 January 18, 1991 9204 RE: Docket No. 030-0924 License No. 31-08946-02 EA 90-184 Violation: Item 12 of the application dated June 9, 1978, (Personnel Training Program and Frequency) states, in part, that all trainees are licensed and registered radiological technologists and that each trainee is gives 40 hours of didactic lectures on subjects related to radiation safety before being allowed to participate in the handling and preparation of isotopes and patient studies. Contrary to the above, between June 1988 and July 1989, a licensee trainee was not a licensed and registered radiologic technologist, nor did the trainee receive 40 hours of didactic lectures on subjects related to radiation safety before being allowed to participate in the handling and preparation of isotopes and patient studies. This is a Severity Level IV violation. (Supplement VI) Reason for the violation: 1. It is true that the current technician did not have any formal previous training. The nuclear medicine technologist position was vacated in 1988 and a licensed and registered replacement could not immediately be found. Consequently, an existing employee of Batavia VAMC was transferred to this line and was provided on-the-job training. Her training started from the day she was assigned to the Nuclear Medicine department. It was an ongoing, on-the-job training which included basics and fundamentals of a small-size nuclear medicine imaging department. She received on-the-job instructions and supervision not only from the outgoing Nuclear Medicine Technician, but also from the Nuclear Medicine physician. She was also rotated through VAMC Buffalo, which is a bigger nuclear medicine facility, for further orientation and learning. 2. Radiation safety topics were discussed with her by the nuclear medicine physician. For a period of one year, the outgoing technologist demonstrated various aspects of radiation safety at the time the current technician was assigned to the department. In addition to the training that was provided on the job at Batavia/Buffalo VAMC's, the current technician was sent to attend

Batavia VAMC Reply - January 18, 1991

lectures on radiation safety at the State University of New York at Buffalo, Given the circumstances and the background knowledge of the current technician, we were of the opinion that it would be best for her to get une-to-one instructions before going to any didactic lectures. She did receive some didactic lectures as documented in Attachment 1.

Corrective steps that have been taken and the results achieved:

She will attend an additional 5 hours on February 21, 28, and March 7, 1991. Ongoing teaching sessions (of at least 40 total hours) are currently being presented by the Batavia VAMC nuclear medicine physicias.

The VAMC has approved recruitment of a certified nuclear medicine technologist. We are currently advertising the new position.

Corrective steps that will be taken to avoid further violations:

We will continue to provide required site-specific training to the current as well as any new employee, while an active search for a trained CNMT or ARRT with nuclear background is underway.

Date when full compliance will be achieved:

Currently, there is a nationwide shortage of available nuclear medicine technologists and no applicants have so far responded to our advertisements. We hope that there may be some response from the graduating class of nuclear medicine technology program of June 1991. In the event the position is not filled with a CNMT/ARRT by June 1991, the option would be to continue on-the-job training and provide required didactics to the current technician.

B. Violation:

The licensee's letter dated March 28, 1979 states, in part, that ancillary medical center employees, (nursing, clerical, housekeeping, security, etc.) will be included in the radiation safety training program which includes annual refresher training.

Contrary to the above, as of September 18, 1990, the licensee clerical staff had never received the annual radiation safety refresher training.

This is a Severity Level IV violation. (Supplement VI)

Reason for the violation:

We were not aware that clerical staff should be included in the training of ancillary personnel.

Corrective steps that have been taken and the results achieved:

A training lecture was presented to the clerical staff on October 25, 1990. This included a question and answer period at the end of the lecture (Attachment 1).

Corrective steps that will be taken to avoid further violations:

The ancillary personnel, including clerical staff, will receive annual refresher training in radiation safety and their attendance will be documented and included in RSC minutes for continued monitoring.

Date when full compliance will be achieved:

The corrective steps noted above have already been implemented.

C. Violation:

Item 2 of the licensee's letter dated December 10, 1985 states, in part, that the procedures described in Appendix D of Regulatory Guide 10.8, Revision I (dated October 1980) will be followed. Appendix D, Section 1, Paragraph A.2 of this Regulatory Guide requires that survey meters shall be calibrated at least annually and after servicing.

Contrary to the above, two survey meters (a Victoreen 491 survey meter and a Keithley 36100 survey meter) were not calibrated annually in that neither meter was calibrated in 1989.

This is a Severity Level IV violation. (Supplement VI)

Reason for the violation:

Calibration of Survey Meters annually: Survey meters were sent out for calibration every year. In 1989, Victoreen survey meter was sent for calibration on September 27, 1989, but was returned to us in February 1990. In March 1990, after receiving the Victoreen, the backup instrument (Keithley) was sent for calibration. Because of this delay in calibration by the vendor, and the paper work pertaining to calibration, there was an overlap (Attachment 2).

Corrective steps that have been taken and the results achieved:

We will have our survey meters calibrated locally at the State University of New York at Buffalo, by an individual licensed by the New York State Department of Health to perform this service; thereby, avoiding delays due to paperwork, shipping, etc. The previous arrangements of sending survey meters for calibration to outside vendors will be utilized as a backup, in the event there are problems locally.

Corrective steps that will be taken to avoid further violations:

We have taken measures to initiate paper work at least 4 months prior to the date of calibration to avoid such overlaps and delays in

Batavia VAMC Reply - January 18, 1991 the future.

In addition, meters will be calibrated locally. Due dates will coincide with semi-annual audit visits by the consulting University health physicists thus ensuring ongoing monitoring.

Date when full compliance will be achieved:

The survey meters have already been sent for calibration for 1991 and currently we are using the loaner survey meter. The corrective steps noted above have been fully implemented.

D. Violation:

Item 2 of the licensee's letter dated December 10, 1985 states, in part, that the procedures described in Appendix B of Regulatory Guide 10.8, Revision 1, will be followed. Appendix B (Medical Isotopes Committee), Section 9 (Duties), requires that the Medical Isotopes Committee ensure that the byproduct materials license is amended, when necessary, prior to any changes in facilities or personnel as specified in the license.

Contrary to the above, the Medical Isotopes Committee did not ensure that the byproduct materials license is amended, when necessary, prior to any changes in facilities or personnel as specified in the license, as evidenced by the following examples:

- 1. The licensee changed radiation safety officers in 1980 and 1988; however the Medical Isotopes Committee did not ensure that the license was amended to reflect the change in personnel; and
- 2. In the latter part of 1988 through June 1989, the Nuclear Medicine scan room and Hot Lab were relocated from the location described in the license application dated June 9, 1978; however, the Medical Isotopes Committee did not ensure that the license was amended to reflect the changes in the facility.

This is a Severity Level IV violation. (Supplement VI)

Reason for the violation:

1. Dr. Dare was added to the license as an authorized user (Amendment #9) in June 1980. Although Dr. Puri was added to the license (Amendment #10) as an authorized user, Dr. Dare remained the RSO from May 1980 until June 1988 when replaced by Dr. Husain. VA Central Office (VACO), Washington, D.C., was notified at that time). Dr. Husain was appointed as a staff physician in nuclear medicine on January 31, 1988, under the supervision of Dr. Puri. He was appointed RSO on June 3, 1988. VACO was notified at that time. As Batavia had previously provided VACO the notification of Dr. Husain as RSO, this fact was not included on the request dated July 1990, that he be added as an authorized user. We were unaware that apparently there had been no communication between VACO and the NRC. It is our understanding that the staff of NRC Directorate of Licensing requested

that all matters germane to the use of radionuclides be referred to VACO initially rather than direct to NRC. Although Batavia VA made the necessary notifications to VACO, we acknowledge that the NRC was not in receipt of the notifications. Supporting documentation is contained in Attachment 3.

2. Since the relocation of the camera and hot lab were within the existing nuclear medicine department, it was not apparent to the Radiation Safety Committee that license amendment was required.

During 1988-1989, remodeling of the existing Nuclear Medicine Department was done to accommodate the new SPECT camera. The generator and dose calibrator were moved to the adjacent room within the department facing outside walls. Although no formal close out survey report was done, the areas in question were survey daily and the survey records of the old department and Rooms 303 and 307 are on file and did not exceed the permissible limits (Attachment 3).

Failure to obtain a license amendment for renovation and alteration of the department was certainly an oversight.

Corrective steps that have been taken and the results achieved:

- 1. License amendments have already been sent to the NRC through Director Nuclear Medicine VA Central Office. In addition, a copy was sent directly to the NRC.
- 2. The Radiation Safety Committee and the RSO are informed that all planned changes in the nuclear medicine facility must receive prior license amendment approval before implementation.

Corrective steps that will be taken to avoid further violations:

- 1. The names of RSO and the membership of RSC will be a check list item on RSC meetings and annual ALARA audit report. The corrective steps are the same as noted above.
- 2. The need to obtain prior approval has been added to a mandatory engineering preconstruction check list (Attachment 4).

Date when full compliance will be achieved:

The corrective steps noted above have been implemented and an amendment to this effect has been sent to NRC.

E. Violation:

The Model ALARA Program dated February 10, 1982, paragraph B states, in part, that licensee management will perform a formal annual review of the radiation safety program including ALARA considerations. This shall include reviews of operating procedures and past exposure records, inspections and consultations with the radiation protection staff and outside consultants.

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Contrary to the above, as of September 18, 1990 the formal annual reviews of the radiation safety program including ALARA considerations, were inadequate in that the licensee failed to identify numerous violations of their license commitments.

This is a Severity Level IV violation. (Supplement VI)

Reason for the violation:

We acknowledge the NRC inspection did identify 10 violations. We are of the opinion that none of the violations posed a serious health or safety concern. Most of the violations centered around methods of documentation that were used which were different than the methods prescribed by NRC. Other violations occurred because of the small size of the staff (one physician, one tech and one clerical person) and the limited number of pieces of equipment to be surveyed (i.e. one survey meter with one back up).

Corrective steps that have been taken and the results achieved;

The hospital will use the services of one of its consulting health physicist to conduct semi-annual audits of the Nuclear Medicine Department. This semi-annual audit will include a formal ALA...A reviewed in the prescribed format.

Corrective steps that will be taken to avoid further violations:

A detailed written report of the audit findings will be prepared by the health physicist and submitted to the RSO for action. These external audit reports and planned corrective action will be presented to the Radiation Safety Committee for continuous monitoring.

Date when full compliance will be achieved:

The consulting health physicist is scheduled to conduct an external audit during January 1991.

F. Violation:

Item 2 of the licensee's later dated December 10, 1985 states, in part, that the procedures described in Appendix I of Regulatory Guide 10.8, Revision 1 will be followed. Appendix I, (Area Survey Procedures), Section 5 requires that a permanent record be kept of all survey results including an identification of the survey equipment used, with the serial number and pertinent counting efficiencies and the name of the person performing the survey.

Contrary to the above, as of September 18, 1990, area survey records did not contain all of the required information. Specifically, the survey records did not include an identification of the survey equipment used including the serial number and pertinent counting efficiencies, and the name of the person performing the survey.

This is a Severity Level V violation. (Supplement VI)

Batavia VAMC Reply - January 18, 1991 Reason for the violation: 1. Most of the time we use only one survey meter (Victoreen) except when it is sent out for calibration. Only then do we use our backup survey meter (Keithley). 2. The Nuclear Medicine Department is a small department consisting of one physician and one tech with the same person performing the survey. Because the person performing the survey was self evident to the two members of the department, the requirement to record the information was an oversight. Corrective steps that have been taken and the results achieved: 1. A new survey record form has been adopted which contains all of the required information, including the serial numbers of survey equipment used, counting efficiencies, and the name of the person performing the survey. This form is included in the new forms attachment No 10. 2. The results of the calculations for Efficiency of the Packard Multiprias 2 Well Counter is dated October 11, 1990 (Attachment 4) and shows a TC-99m/co-57 window efficiency for cobalt 57 and 97.5% and open window efficiency for Cobalt 57 at \$9.1%. Retrospectively, it is comforting to note, the conversion of cpm to dpm will be below 11,000 leak NRC limit. Corrective steps that will be taken to avoid further violations: All new forms will be checked by RSO and reviewed at RSC meetings to assure that all required elements are appropriately documented. Date when full compliance will be achieved: We are currently using the new survey record form G. Violation: Item 2 of the licensee's letter date. December 10, 1985 states, in part, that the procedures described in Appendix D of Regulatory Guide 10.8, Revision 1 will be followed for calibration of the dose calibrator. 1. Appendix D. Section A.4 requires that a geometrical variation test be performed at the time of installation of the dose calibrator. Contrary to the above, a geometrical variation test was not performed at the time the dose calibrator was installed. This is a Severity Level V violation (Supplement VI) 2. Appendix D. Section C.6 requires that for dose calibrator constancy testing, a graph will be plotted to indicate the predicted activity of each source based on decay calculations and the + 5 percent Batavia VAMC Reply - January 18, 1991

limit on the graph.

Contrary to the above, as of September 18, 1990, the dose calibrator constancy test did not include a graph indicating the predicted activity of each source based on decay calculations and the \pm 5 percent limits on the graph.

This is a Severity Level V violetion. (Supplement VI)

3. Appendix D, Section B.4 requires, that for dose calibrator linearity testing, a graph of the measured net activity versus the calculated activity will be plotted.

Contrary to the above, as of September 18, 1990, a graph of the measured net activity versus the calculated activity was not plotted for the dose calibrator linearity test.

This is a Severity Level V violation. (Supplement VI)

Reason for the violation:

- 1. It was believed that geometry test data was supplied by the manufacturer at the time of purchase/installation.
- 2. The constancy decay values and ±5 percent limits were logged but not graphed. NRC regulatory guide 10.8, Revision 2, dated August 1987, appendix C3c states, "For each source used, either plot on graph paper or og in a book the background level for each setting checked and the net activity of each constancy source."
- 3. The linearity test records were tabulated every quarter. All values were within the ± 5% limit. The lack of the dose calibrator constancy test to include a graph represents an oversight.

Corrective steps that have been taken and the results achieved:

- 1. A geometry variation test has since been carried out and found to be in compliance (Attachment 5).
- 2. We will follow Regulatory Guide 10.8, Revision 2, Section C.3.d, regarding constancy data, which permits one to "Plot or log the results"... we will log the results. This is now included in the procedure manual.
 - 3. Linearity data has been graphed.

The above results were achieved (Attachment 5).

Corrective steps that will be taken to avoid further violations:

The records of these dose calibrator tests will be reviewed each quarter by the RSO and semi-annually by the consulting health physicist to assure compliance with Appendix C of Regulatory Guide 10.8, Revision 2. The findings will be reviewed by RSC on a quarterly basis.

Batavia VAMC Reply - January 18, 1991

Date when full compliance will be achieved:

The corrective steps noted above have been implemented.

H. Violation:

10 CFR 35.59(d) requires, in part, that a licensee in possession of any sealed source shall retain leakage test records which contain the model number and serial number (if assigned), of each source tested, the estimated activity, the measured activity expressed in microcuries and a description of the method used to measure each test sample.

Contrary to the above, the sealed source leakage test records did not include all the required information. Specifically, the records did not include:

- 1. the model number and serial number of each source tested;
- 2. the estimated activity of the sealed source;
- 3. the measured activity of the sealed source expressed in microcuries; and
 - 4. a description of the method used to measure each test sample.

This is a Severity Level IV violation. (Supplement VI)

Reason for the violation:

- 1. The sealed sources were identified by a unique number on our records. It is acknowledged that this number was not the serial number
- 2. The estimated activity of the sealed source was being calculated (Attachment 6). Inadvertently this documentation may have been overlooked by the NRC inspector.
- 3. Conversion of cpm to dpm had been discussed by he RSO with the physicist. They agreed the issue of significance of converting cpm to dpm, especially when dealing with such low count rates, was indeed an academic exercise. This conversion was delayed until the physicist could bring the necessary equipment and demonstrate to him the method of conversion.
- 4. The leak test activity was being measured in gamma well counter with appropriate sensitivity. However, we didn't convert CPM to DPM because of the very low counts.

Corrective steps that have been taken and the results achieved:

A new form has been adopted to quarterly record the required information and is included in the new forms Attachment 7.

Batavia VAMC Reply - January 18, 1991 Since the inspection, the conversion of cpm to dpm has been implemented. We have established and implemented the model procedure for leak testing sealed sources that was published in Appendix H to Reg. Guide 10.8, Revision 2.

Corrective steps that will be taken to avoid further violations:

All new leak test forms will be checked every six months by RSO to assure that the required elements are included. In addition, leak tests will be reviewed during the scheduled audit of our consulting health physicist during January 1991 and information forwarded to the Radiation Safety Committee for review and continuous monitoring.

Date when full compliance will be achieved:

The new form is already being used and desired information recorded.

I. Violation:

10 CAR 35.59(g) requires, in part, that a licensee in possession of a sealed source shall conduct a quarterly physical inventory of all such sources in its possession.

Contrary to the above, as of September 18, 1990, the physical inventory of sealed sources in the licensee's possession was not being conducted quarterly. Specifically, the sealed source inventories were conducted annually.

This is a Severity Level IV violation. (Supplement VI)

Reason for the violation:

Sealed sources were being counted for leak test every quarter instead of semi-annually. Formal physical inventory was recorded on a separate record annually. We thought that quarterly leak test record would suffice for the purpose of quarterly physical inventory.

Corrective steps that have been taken and the results achieved:

A separate record of quarterly sealed source inventory is being maintained. Supporting documentation is contained in New Forms Attachment No. 7.

Corrective steps that will be taken to avoid further violations:

On going monitoring will be accomplished by quarterly review of this record by the RSO and Paliation Safety Committee. In addition semi-annually review will be performed by the consulting health physicist.

Date when full compliance will be achieved:

The corrective steps noted above have been implemented.

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J. Violation:

10 CFR 20.201(b) requires that each licensee make such surveys as may be necessary to comply with the requirements of Part 20 and which are reasonable under the circumstances to evaluate the extent of radiation hazards that may be present. As defined in 10 CFR 20.201 (a), "survey" means an evaluation of the radiation hazards incident to the production, use, release, disposal, or presence of radioactive materials or other sources of radiation under a specific set of conditions.

Contrary to the above, the licensee did not make surveys to assure compliance with 10 CFR 20.105(b) which limits radiation levels in unrestricted areas. Specifically, as of September 18, 1990, the licensee did not survey a rest room wall (an unrestricted area) adjacent to the hot lab waste storage closet.

This is a Severity Level IV violation. (Supplement VI)

Reason for the violation:

1. At the time of the inspection radiation levels in the nuclear medicine imaging room, hot lab and rest room were measured. The hot lab and imaging room levels were found to be near background. The inspector located one small area along the back wall of the rest room which measured 0.15 - 0.20 mR/hr. This wall is adjacent to the hot lab waste storage closet. The low exposure level and the occupancy of the rest room indicate no regulatory limit was being exceeded at the time of the inspection. The rest room is located within the Nuclear Medicine Department and therefore was considered to be a restricted area.

Corrective steps that have been taken and the results achieved:

To ensure compliance with the dose rate limits established in 10 CFR 20.105 the patient's rest room has been added to the areas to be surveyed. This has been accomplished by the implementation of a new form which includes the patient's lavatory. This form is included in the new forms Attachment 7.

Corrective steps that will be taken to avoid .urther violations:

The RSO/Chief of Nuclear Medicine will review periodically daily survey results. Continuous monitoring will be done by the Radiation Safety Committee through period review of findings.

Date when full compliance will be achieved:

The corrective steps noted above have been implemented.

ATTACHMENT #1
Training Quality of Personnel

Molly Jankowski Training Hours

Date	<u>Subject</u> <u>Training</u>	Hours
07/88 08/04/88 08/11/88	Radiation Safety - Bill Quin 2 Radiation Safety - Bill Quin 2 Radiation Safety - Bill Quin 2	
04/26/89	Proper Use Of Well Counter 4	
04/10/89	-04/14/89 Instrumentation Gamma Camera System 40	
07/31/89	Review of Various Nuclear Medicine 8 Procedures VAMC Buffalo	
08/04/89	Personnel and Laboratory Monitoring 2 Proper Handling, Preparation and Counting of Radioactivity. Conduct Contamination Surveys Perform Decontamination Disposal Procedures	
08/11/89	Survey Meter Calibration 2	
09/26/89	Working With Capintec Dose Calibrator - Operational Review VAMC Buffalo	
10/04/90	Operating Procedures - Dr. Husain 2 Radiation Safety Committee Personnel Monitoring Radioactive Material Package Receipt Package Return To Supplier Radionuclide Use Waste Disposal Instrument Calibration and Maintenance	
10/25/90	Radiation Safety Lecture - Dr. Husain 2	
11/19/90	Geometry and Accuracy of Dose Calibrator 1	
12/10/90	Review of Radiation Safety Procedures 1	

Dr. Husain discussed the following topics with Molly Jankowski on 10/4/90.

- 1) Documents and Notices files.
- () Derating Procedures
- 1) Radiation Safety Committee
- Personnel Monitoring
- f) Procedures Performed and Incumented as Required
- a) Radioactive Material Passage Receipt
- Fackage Seturn to Supplier
- -) Radionuclide Use
- aste listosal
- 101 Instrument Calibration and Maintenance
- 11 Health Physics Zoufpment

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N.M. Technology - Lessons Education Unlimited

TRAINING/INSERVICE

4/10/89 - Picker applications coordinator - Gamma Camera system - Dr. Husain to 4/14/89

4/26/89 Ron Koral held inservice training session to familiarize the proper use of Well Counter (Packard Co.) from 1:00pm to 4:00pm. Dr. Husain and Molly Jankowski attended.

MOLLY JANKOWSKI

7/31/89 - 8 hrs. at VAMC, Buffalo, NY.

Training given by Matt S. on Computer and TOMO

Training given by Judy D. - paperwork, reviewed tests that should be done, record keeping, reviewed Schilling Test.

8/4/89 - 2 hrs at Univ. of Buffalo

Laboratory Session I - Personnel and Laboratory Monitoring - to learn proper handling techniques, prepare and count radioactive samples, conduct urine and thyroid bioassays, conduct contamination surveys, and perform decontamination and disposal procedures.

8/11/89 - 2 hrs. at Univ. of Buffalo - Survey Meter Calibration - to become familiar with the common use and calibration of radiation survey meters.

9/26/89 1:00pm - 4:00pm training program with Judy D. Reviewed Capintec Dose Calibrator different tests that should be performed. (At VAMC, Buffalo, NY)

GMA

nistration

anuary 19, 1989

Memorandum

Chief, Nuclear Medicine Service

Authorization for M. Jankowski to go to VAMC, Buffalo for training. Richard Droske, Acting, Medical Center Director Chief of Staff

THRU:

inno. Chief of Stati

Molly Jankowski is currently being trained to perform basic functions of a nuclear medicine technician. She had no previous experience or training in a nuclear medicine department. In order to provide her a broader exposure and interaction with experienced and trained nuclear medicine technologists. I would like her to spend a few days at VAMC, Suffalo and possibly some other hospitals with a busy nuclear medicine department.

The initial orientation arrangements for Molly Jankowski have already been made with the Chief of Nuclear Medicine and the Chief Nuclear Medicine Technologist at VAMC, Buffalo. She will be going to Buffalo VAMC on Friday, January 20, 1989, and this will be done on a continuing basis once & week for the next few weeks.

It is expected that the above rangements will help in providing some of the basic educational and training needs for Mrs. Molly Jankowski. Your approval to carry out this training objective is requested.

SYED S. HUSAIN, M.D. Chief, Nuclear Medicine

APPROVE/DISAPPROVE

RICHARD DROSKE



Veterans Administration

January 19, 1989

ir Reply Refer To 513/115

J. Gona, M.D. Chief, Nuclear Medicine Service VAMC, Buffalo, NY

Dear Dr. Gona,

Thank y very much for allowing Molly Jankowski to spend a few days in your department and observe various procedures being performed by the technologists. Mrs. Jankowski has been working in VAMC, Batavia, NY for quite some time as a EKG Technician, and now is being cross trained to perform some of the basic functions in the department of Nuclear Medicine. at Batavia under my direct supervision. It is expected that she will have an opportunity to observe and assimilate some of the basic functions performed by the nuclear medicine technologists in your department. Once again, thank you for your help and cooperation.

SYED S. HUSAIN, M.D. Chief, Nuclear Medicine VAMC, Batavia, NY 14020

erans aministration

Memorandum

October 22, 1990

Chairman, Radiation Safety Committee

Radiation Safety Lecture

As Indicated Below

On Thursday, October 25, 1990, I will present a Radiation Safety Lecture at 9:00am in the Medical Conference Room on 2nd floor, Building #2. The Lecture is being given as per Nuclear Regulatory Commission Rules and Regulations and it is imperative that as many employees attend as possible. Your cooperation is appreciated.

SYED S. HUSAIN, M.D.

cc: Chief, Building Management / Housekeeping Staff

Chief, Nursing Service

Chief, Engineering Service

Chief, Radiology Service

Chief, Police Section

Chief, Laboratory Service Chief, Medical Service

Chief, Pharmacy Service

Bruce Elliott, Associate Chief. Nursing Education

Chief, Dental Service-

Clerical and Ancillary Staff in Nuclear Medicine/Radiology Service

V.A.M.C. BATAVIA, N.Y.

RADIATION SAFFTY LECTURE OCTOBER 25, 1990

Presented by S. Husain, M.D., Radiation Safety Officer

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Claren Don	PONCE.
B. C. Boyan	Pacica
KON FIRZZA	QA Coordinator
Donn Bigger (Seale	of nuclear med.
Mrs. 1	Red Michae

There was a question and answer period following the lecture.

ATTACHMENT #2

Instruments

Victoreen Survey Meter

Work order made out and submitted to Engineering Service (who sent to Bio-Med) on 9/27/89,

Received by Mr. Hise and paperwork started on 10/19/89 (with a return date of 10/26/89 requested).

Date obligated by A&MM 11/2/89 (unit cannot be sent out until money is obligated)

Unit received back at VAMC, Batavia, NY on 2/15/90

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TRANSACTION NUMBER	DATE OF	DATE	DATE	DATE
	REQUEST	COMMITTED	OBLIGATED	RECEIVED
VENDOR:	ATOMIC PRODUC	TS		
513-87-2-118-0019	JAN 26.1987	JAN 25,1987	FEB 6.1987	APR 10,1987
513-88-2-118-0056	JAN 8.1988	JAN 8,1988	JAN 11.1988	FEB 26,1988
513-89-3-118-0091	APR 5.1989	APR 5,1989	APR 12.1989	JUL 6,1989
313-90-4-118-0116	AUG 20.1990	AUG 20,1990	SEP 28.1990	Pending
VENDOR:	KEITHLEY INST	TRUMENTS		
513-89-1-118-0016	ACG 23.1988	AUG 23.1988	DEC 5.1988	DEC 6.1988
513-90-2-118-0054	MAR 1.1990	MAR 1.1990	MAR 12.1990	APR 16,1990
VENDOR:	VICTOREEN, L	NC.		
\$13-87-2-118-0018	JAN 26.1987	JAN 26,1987	FEB 11.1987	MAR 16.1987
513-88-3-118-0102	APR 18.1988	APR 28,1988	MAY 3.1988	JUN 27.1988
513-90-1-118-0018	OCT 19.1989	OCT 19,1989	NOV 2.1989	FEB 15,1990
	September	27, 89		



CAPINTEC INSTRUMENTS INC.

	REPORT OF C	ALIBRATION	
Model CRC-30 BC Fad	ioisotope Calibr	ator	serial no. <u>30759</u>
Chamber: E845	8		
Power Supply Tested	1	EMPERATURE SECTION	
Iometer Tested		SCHOOL SECTION	
Bias Battery Teste	4	-	
Calibration Calibration standa	rds used for Ins	trument Calibr	ation.
			Instrument
Radionuclide	Astivity	Accuracy	Reading
Co=60	99.89 uci	+1.8 %	set*
Co+57	2550 uci	+1.9 %	set*
CS-137	.7/2 mCi	+2.3 %	.7/6 TCi
* Co-57 and Co	-60 standards are	e used to set	the cal ation.
LINEARITY TEST (c	pticnal)		
Linearity of the outputs for high the standard cham	activity and low	d by comparing activity Tc-9	the ratio of chamber 9m samples to that from
A Supplementation of the Control of	< 5%	saturation at	2 Ci
Section Review and American Africans	> 5%	saturation at	: 2 Ci
		^	
DATE:	2-89	_ Gion	Test Engineer
Pemarks on Back	•		

A SUBSIDIARY OF CAPINTET, INC. / 540 Alona Crive . Pittsburgh, Pennsylvania 15238 . (412) 963-1986



CAPINTEC INSTRUMENTS, INC.

REPORT OF CALIBRATION

Model CPG-30 BC Fadi	oisotope Calibra	itor	serial no. 307	59
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Calibration				
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Padionuclide	partirity	ACCT*T/	Reading	
Co-60	114.5	±1.8 %	set*	
Co-57	.548 CL	±1.9 %	set*	
C3-117	7297	±2.3 %	.733 mci	
* Co-37 and Co	-60 standards are	used to set	the calibration.	
LINEARITY TEST (C				
Linearity of the outputs for high the standard char	Something and	by comparing activity To-S	the ratio of chamber 9m samples to that fro	m
	< 53	saturation a	: 2 Ci	
	> 53	saturation a	: 2 Ci	

DATE: 6/27/88

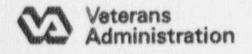
Frank P Popies / Test Engineer

Remarks on Back -

ATTACHMENT #3
License Ammendments

and Surgery

ATTCH SENT #3



January 9, 1986

In Reply Refer To: 115

Director (00/115) VA Medical Center Batavia, NY 14020

SUBJ: Amendment #12 to NRC License #31-08946-02 re your application dated March 27, 1984 (Renewal thru 12/31/90)

- 1. The U.S. Nuclear Regulatory Commission, Region I, bas forwarded the above lice se emendment to us: we send it to you for appropriate action.
- 2. Because some hospitals and individuals communicate with them directly, the staff of the NRC Directorate of Licensing has requested that all applications for licenses, renewal of licenses, and other matters germane to the use of radionuclides, be referred to our office initially rather than directly to them.
- 3. An occasional hospital sends in a single copy of its NRC request: an original and three copies should be submitted.
- 4. Please be assured of our earnest desire and readiness to assist you in problems pertaining to Nuclear Medicine.

Sincerely,

Jan prestation MARK W. WOLCOTT, M.D. ACMD for Clinical Affairs

Enclosure

Hay 29, 1980

Director, Engineering Service (10A4A5) VA Central Office Washington, D. C. 20420

Subj: Radio ogical Safety Officer

- 1. Norman Dare, M. D., Chief, Radiology Service, is appointed Padiological Safety Officer at this hospital as required by MP-s, Part III, paragraph 32.32 a.
- 2. Please cancel designation of June 7, 1978, app in ing Alan R. Winterberger, M. D.

P. J. FLAETHTY Medical Center Director

cc: Director, Nuclear Medicine (115)

Sent to wer Engineery Visco at Visco

NRC on Dir. Muchan Mud

June 3, 1988

513/11

Director, Facilities Engineering Service (085) VA Central Office Washington, DC 20420

SUBJ: Radiation Safety Officer

- 1. Syed Busain, M.D., Acting Chief, Nuclear Medicine Service, is appointed Radiation Safety Officer at this medical center as required by MP-3, Part III, paragraph 32.32a.
- 2. Please cancel the designation of January 8, 1985, appointing Savita Puri, M.D.

R. L. WICHAM Medical Center Director

Sport to place of the NRC



Memorandum

Date: October 31, 1990

from Chief, Engineering Service

Subj Renovation of Nuclear Medicine

to Chief, Nuclear Medicine

Renovation of Nuclear Medicine, Proj. #513-85-103, began on 10/20/88 and was completed on 3/17/89.

ALBERT J. TAMICELI

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ENGINEERING PRECONSTRUCTION CONFERENCE CHECKLIST

- A. Name of V.A. Resident Engineer
- B. Name of Contractor's Foreman on job
- C. Hours of work and no work on holidays
- D. Parking of vehicles and trailers
- E. Storage area for equipment and materials
- F. Contractor's Daily Logs, submit weekly
- G. Submit Progress Curve and Schedule of Costs (4 copies) prior to starting
- H. Submit Payrolls (2 copies) weekly
- Submittals of literature/drawings, etc. (3 copies)
- J. All submittals will have a transmittal cover sheet.
- K. What is Contractor's intended start date
- L. Safety Precautions (if any, i.e. hardhats, safety barricades, dust protection, etc.)
- M. Submit Progress Payment in ice monthly by the 25th of the month and number each payment
- N. No blocking the access to fire-related areas or equipment (emergency exits, fire hoses, fire pull boxes, fire extinguishers, etc.)
- O. Asbestos
- P. If a restricted area or adjacent space undergoes construction, review NRC regulations with RSO has been conducted.

ATTACHMENT #4
Efficiency of Well Counter

Veterans Administration Medical Center of Batavia

Calculations for Efficiency of a Packard MultiPrias 2
Well Counter
October 11, 1990

MILMANIENI M

Open Window

The Packard MultiPrias 2 is internally calibrated with a I-129 source. The efficiency was calibrated for a Tc-99m/Co-57 window (80 - 165 Rev) and an open window (15 - 500 KeV) using Co-57. The following data is pertinant with regards to the calculations;

	ce: see				
Activity		0.115 uCi	Activity	-	0.115 uCi
Date of Calibration	**	04-08-88	Date of Calibration	**	04-08-88
Half-Life	-	271 days	Half-Life		271 days
DPM of Standard on 10-11-90	-	24499	DPM of Standard on 10-11-90		24499
Percent of Gamma Emission in window		96.2	Percent of Gamma Emission in window		96.2
DPM of Gamma Emission	***	23568	DPM of Gamma Emission	-	23568
CPM of Co-57 in 80 - 165 Window		22972	CPM of Co-57 in 15 -500 Window	-	23357
Efficiency for Cobalt 57	-	97.5%	Efficiency for Cobalt 57		99.1%

Note: The Open window should be used for wipe test measurements with an efficiency of 90%. This window setting will detect most nuclides found in nuclear medicine.

Also, please note since the Prias 2 has two detectors, both detectors were checked for efficiency with the same window and were found to be identical.

Performed by:

Daniel T. Guarasci, B.S.

Consulting Assistant Health Physicist

Tc-99m/Co-57 Window

WELL COUNTER EFFICIENCY

October 11, 1990 0.95 c CO-57 Window 15 - 500 Kev

Conversion of CPM to DPM: Subtract background from the sample counts and divide it by 0.95.

Sample Cts. 63
Skg. Cts. 5
Net Cts. 58 CPM e.g.

58 0.95 = 0. Oh!

frigger Level >, 11 000 DPM

ATTACHMENT #5
Geometry Testing

recidedo.

EXHIBIT 9

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5.31 mc1 of Co-57 Model: SN: 58221012-09 Calibration date: 9-14-90	first assay: 4.6/ mCi second assay: 4.6/ mCi third assay: 4.60 mCi average: 4.6/ mCi 4.63 mCi dev:	first assay: mC1 second assay: mC1 third assay: mC1 average: mC1 mC1 dev:
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EXH-16

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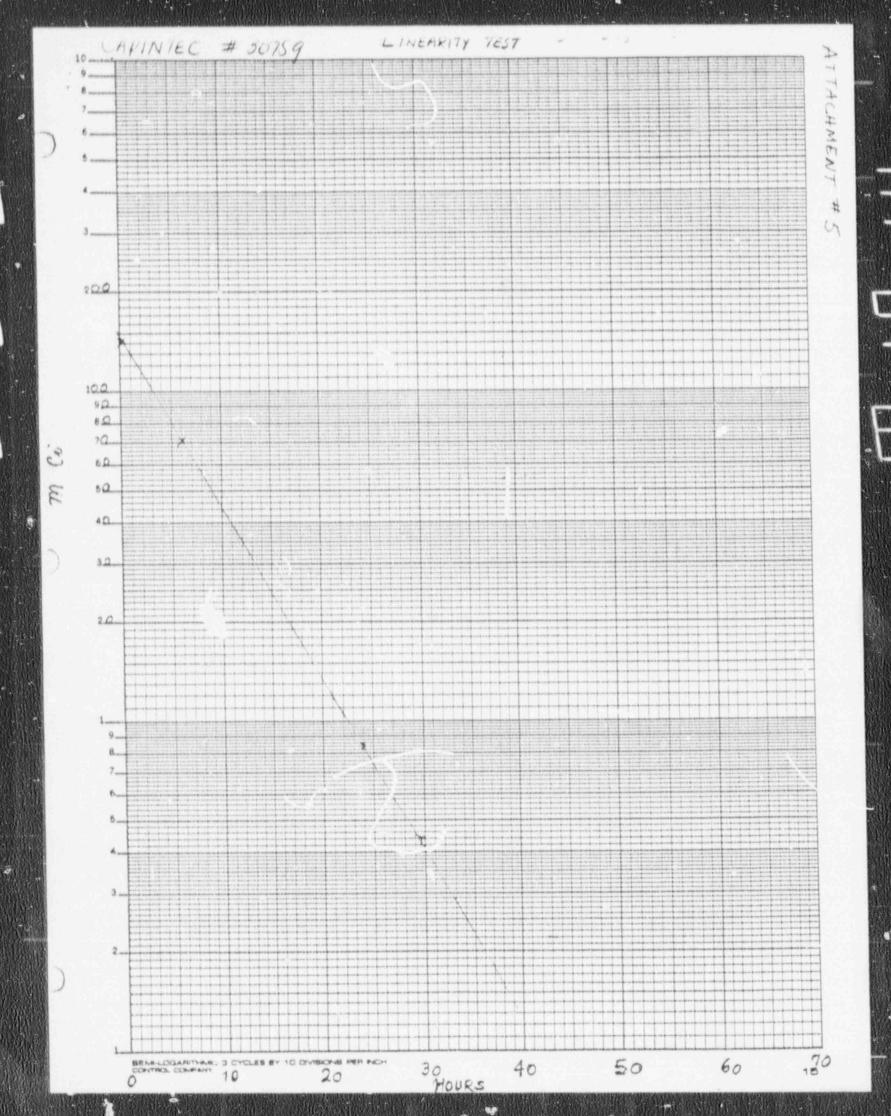
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VA 105 70516 DATA SHEET

U. S. GOVERNMENT PRINTING OFFICE : 1871 Q - 448-234



ATTACHMENT #6
Calculation of Seal Source Activity

ATTACHMENT #6

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129.6 No. 360 No. 271.7 41/82 12/82 ¹ 2744Ci 2534Ci 7.34.Ci

DOSE CALIBRATOR CONSTANCY CHECK

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DATA SHEET

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DATA SHELL

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SEPTEMBER 1990

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9	10	11	12	13	14	15
A 5.378mCi	A 5.364mCi	A 5.351mCi	A 5.337mCi	A 5.324mCi	A 5.310mCi	A 5.296mCi
16	17	18	19	20	21	22
A 5.283mCi	A 5.270mCi	A 5.256mCi	A 5.243mCi	A 5.229mCi	A 5.216mCi	A 5.203mCi
-23	24	25	26	27	28	29
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5.098mCi						

A Co_57 S8221012-09 5.310 mCi

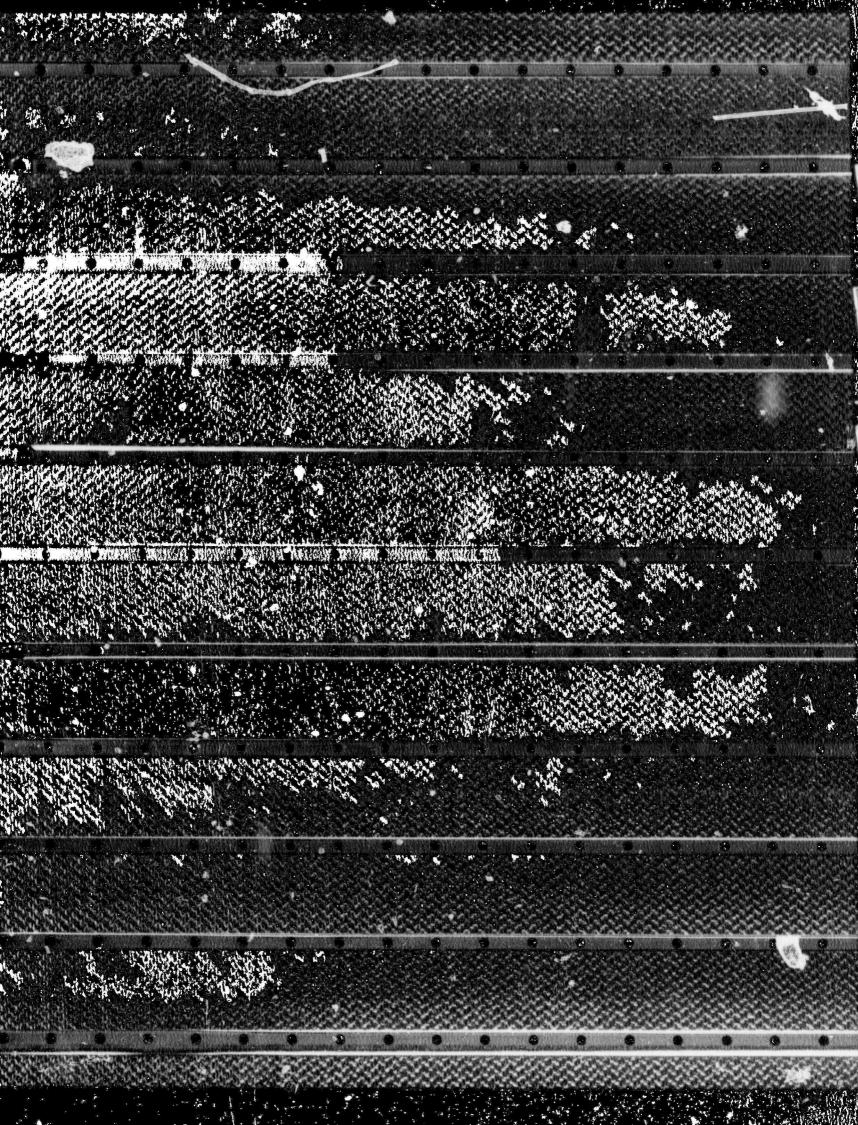
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: 4 - 129.6 Mo. 4 - 360 Mo. 11/82 11,'98 274 Uci 293 Uci 5.50Uci BA-133 CE-137 CO-57



ATTACHMENT #7
New Forms

DATE	TEST	Tc 99	MO	PPED. 57	ACTUAL Co ⁵⁷	PRED. Ballal	ACTUAL.	PRED. 137 Cm	ACTUAL Cs 137	67 Ga	99m Tc	iii in	HO	123	131 I	133 Xe	201 T1	OTHER
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BA-133	274uCi	11/82	3 -	129.6 Mo.
CS-137	253uCi	12/82	3	360 Mo.
Co-57	5.311Ci	9/90	3	271.7

DOSE CALIBRATOR	CONSTANCY	CHECK
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Source:	Calibration Date:	Activity:	
flonth:	Year:		

			Form
	RADIOACTIVE W	ASTE DISPOSAL	VARS - 1:
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Estimated Activity:	uCl mCl	Catimated Activity	uCl mCl
	- I Philadelphia		AND DESCRIPTION OF THE PARTY OF
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Container/Material:	-	Container/Material:	
Storage Date:	by:	Storage Date:	by:
Estimated Activity:	uCl mCl	Estimated Activity:	uCl mCl
	al Plannal		THE RESERVE OF THE PARTY OF THE
Disposal Date:	al Disposal	Material Dis	
	management of the second	Disposal Date:	py:
Surface Survey:	mR/hr	Surface Survey:	mR/hr
Background:	mR/hr	Background:	mR/hr
Instrument:		Instrument:	
Final Disposition:		Final Disposition:	
Materia	al Storage	Material Sto	1000
Container/Material:		Container/Material:	age
Storage Date:	by:	Storage Date:	by:
Estimated Activity:	uCl mCl	-	uCl
		Estimated Activity:	mCl
	al Disposal	Material Dis	
Disposal Date:	by:	Disposal Date:	by:
Surface Survey:	mR/hr	Surface Survey:	mR/hr
Background:	mR/hr	Background:	mR/hr
Instrument:		Instrument:	

Final Disposition		Final Disposition:	

Form VARS-8

AREA CONTAMINATION WIPES Month: Year: Use keyed drawing from VARS-7 Area Area Aree Area Area Ates 9 Date: Bkg CPM Wipe CPM Std CPM Std Act uCl Wipe uci Area Area Area Area Area AIBB 9 Date: Bkg CPM Wipe CPM Std CPM Std Act uCl Wipe uCl Area Arsa Area Area Alba Area Date: 6 9 Bkg CPM WIPS CPM Std CPM Std Act uCI Wipe uCl A/ 98 Area Area Area Area Area Date: 9. Bkg CPM Wipe CPM Std CPM Std Act uCl Wipe uCi Area Area Area Area Area Date: , 9 Bkg CPM Wipe CPM SIN CPM Std Act uCl Wipe uCl Action Level: >0.01 uCl / 100 sq. cm., clean up removeable activity and notity RSO

			DOSE (CALIBRATI	OR LINEAR	Y	***		Form VARS-3
Mfg:			Model:			Serial No):		
Start Date:		Performed	by:		Start Date:		Performed	by:	
Time:		Reviewed t	ov:	RSO	Time:		Reviewed t	ov:	RSO
Lapsed		Correction			Lapsed		Correction	Corrected	% Diff
Time (hrs)	Activity	Factor	Activity	(M-C)/C	Time (hrs)	Activity	Factor	Activity	(M-C)/C
0		32			0		32	P. 3 Marin	
6		16			6		16		
24		2			24		2	HE.	
30		1		0	30		1	Lating.	0
48		0.125			48		0.125		
54		0.0625			54		0.0625		
72		0.0078	O'DE SAMERANIA DE SE PE. SE		72		0.0078	**********	
78		0.0039			78		0.0039		
CONTRACTOR OF STREET,	Marketonia, manimi amen	-	-	A STATE OF STREET, STR	-	-		-	-
96		0.0005			96		0.0005		***************************************
96 Start Date		0.0005	by:	A CONTRACTOR AND ADDRESS OF THE PARTY OF THE	96 Start Date		Performed	l by:	
		Performed	***************************************	RSO	Start Date		Performed	THE RESERVE AND ADDRESS OF THE PARTY OF THE	PSO
Start Cate	Measured		by:	RSO % Diff (M-C)/C	Anniero de Antonio	Measured		by:	RSO % Diff (M-C)/C
Start Date Time:	Measured	Performed Reviewed Correction	by: Corrected	% Diff	Start Date Time: Lapsod	Measured	Performed Reviewed Correction	by: Corrected	% DHf
Start Date Time: Lapsed Time (hrs	Measured	Performed Reviewed Correction Factor	by: Corrected	% Diff	Start Date Time: Lapsod Time (hrs	Measured	Performed Reviewed Correction Factor	by: Corrected	% DHf
Start Date Time: Lapsed Time (hrs	Measured	Performed Reviewed Correction Factor	by: Corrected	% Diff	Start Date Time: Lapsod Time (hrs	Measured	Performed Reviewed Correction Factor	by: Corrected	% DHf
Start Date Time: Lapsed Time (hrs	Measured	Performed Reviewed Correction Factor 32	by: Corrected	% Diff	Start Date Time: Lapsod Time (hrs	Measured	Performed Reviewed Correction Factor 32	by: Corrected	% DHf
Start Date Time: Lapsed Time (hrs	Measured	Performed Reviewed Correction Factor 32	by: Corrected	(M-C)/C	Start Date Time: Lapsod Time (hrs	Measured	Performed Reviewed Correction Factor 32	by: Corrected	% DHf
Start Date Time: Lapsed Time (hrs	Measured	Performed Reviewed Correction Factor 32 16	by: Corrected	(M-C)/C	Start Date Time: Lapsod Time (hrs	Measured	Performed Reviewed Correction Factor 32 16	by: Corrected	% DHf
Start Date Time: Lapsed Time (hrs 0 6 24 30	Measured	Performed Reviewed Correction Factor 32 16 2	by: Corrected	(M-C)/C	Start Date Time: Lapsod Time (hrs 0 6 24 30	Measured	Performed Reviewed Correction Factor 32 16 2 1 0.125	by: Corrected	% DHf
Start Date Time: Lapsed Time (hrs 0 6 24 30 48	Measured	Performed Reviewed Correction Factor 32 16 2 1 0.125	by: Corrected	(M-C)/C	Start Date Time: Lapsod Time (hrs 0 6 24 30 48	Measured	Performed Reviewed Correction Factor 32 16 2 1 0.125	by: Corrected	% DHf
Start Cate Time: Lapsed Time (hrs 0 6 24 30 48	Measured	Performed Reviewed Correction Factor 32 16 2 1 0.125 0.0625 0.0078	by: Corrected	(M-C)/C	Start Date Time: Lapsod Time (hrs 0 6 24 30 48	Measured	Performed Reviewed Correction Factor 32 16 2 1 0.125 0.0625 0.0078	by: Corrected	% DHf

(

			(6 mon	th Intervale)			VARS-10
	Dete:	Test by:			Date:	Tool by:	
	isotope:	THE RESIDENCE AND ADDRESS OF PERSONS AND ADDRESS OF THE PERSONS AND ADDRESS			Isotope;		
	Source IO:		***************************************	Comme	Source ID:		
	Bkg. CPM:			A	Bkg. CPM:		
_	Wipe CPM:			8.	Wipe CPM:		
-	Std. CPM:			C.	Std. CPM:		
	Std. Act. (uCl)			D.	Std. Act. (uCf):		
-	Wipe Act. (L [(B - A) / (C - A		RSO	E.	Wipe Act. (ut		RS
	Date:	Test by:			Date:	Test by:	
	isotope:				Isotope:	Particular control of horse discounting as well	
Metal	Source ID:	THE REAL VOICE AND ADDRESS OF THE PARTY OF THE PARTY.	MANAGE MANAGEMENT OF THE PARTY	promo	Source 12		
i.	Bkg. CPM:	AMERICAN PROPERTY OF STREET	-	A	Bkg. CPM:		
	Wipe CPM:			В.	Wipe CPM:		
is a	Std. CPM:			C.	Std. CPM:		
).	Std. Act. (uCf):		D.	Std. Act. (uCf):		
i.	Wipe Act. (E.	Wipe Act. (u	ch:	
	[(B-A)/(C-A	4)] x D	RSO		[(8 - A) / (C - A)] x D	RS
	Date:	Test by:			Date:	Test by:	
	isotope:				isotope:		
TOTAL SE	Source ID:		CALIFORNIA CONTRACTOR	percen	Source ID:		
	Bkg. CPM:		COLUMN TO A STATE OF THE STATE	A	Bkg. CPM:		
3.	Wipe CPM:			В.	Wipe CPM:	· Sentence of the sent of the	
NS MATE MATERIAL	Std. CPM:			C.	Std. CPM:	White tone and it was rough a second	
D,	Std. Act. (UC	n:	SUPPLANT CONTROL CONTR	D.	Std. Act. (uCf)	1	1
E.	Wipe Act.			E.			
	[(B - A) / (C -	A)1 x D	RSO		[(B - A) / (C - A		R

		SEALED	SOURCE WIF		Form VAF:S-
7	Date: 14 49-64 Test by:	m		Date: / 2 - 4 - Test by:	17.5
	(solope: 5 / 37	12		Isotope: /5/4 / 33	-
	Source ID: 38/5			Source ID: 257/	
	Bkg, CPM:	· y'	A	Bkg. CPM:	1 5'
	IWIDE CPM:	3	B.	Wipe CPM:	18
	SIL CPM:		C.	Std. CPM:	-
	Std. Act. (UCh:		0.		
	Wipe Act. (uCh: DPM	26	E.	200	8-4
	HIGH ALTIC PAITED	1800 RS	50	[(B - A) / (C - A)] x D	Thes
	Date: /6 - 7-40 Test by:	my] (5	Date: 10 - 2-40 Test by:	ing
	Isotope: Cc -5"7 -: 346"			1801000: C0-57 1012.	
	Source 10:5 8-02/017-09			Source 10: 5 80/0/0503	-
	Bkg. CPM:	Y	A		8
	Wipe CPM:	17	B.	Wipe CPM:	10
	Std. CPM:		C.	Std. CPM:	
	Std. Act. (uCl):		D.	Std. Act. (uCh:	
	Wipe Act. (uCh: DPm	18	E.	r.O.	11
	[(B-A)/(C-A)]xD	RS	ol	[(B-A)/(C-A)] x D	×.
	Date: (6 .) -40 Test by:	ma	7	Date: 10 - 2 - 40 Test by:	m2
	Isotope: C5 - 137		(8	(sotope: Cv . 5 7 320)	
	source 10: 18Ample to			Source ID: 296098117	
	Bkg. CPM:	,27	T _A	Bkg. CPM:	07
	Wice CPM:	7	В.	Wipe CPM:	13
	Std. CPM:			Std. CPM:	******
	STO. ACL (UCD: DPM	7.3	0.	Std. Act. (uCf):	
	Wipe Act. (uCl):			Wipe Act. (uCD: DPM	14
ĺ	[(B - A) / (C - A)] x D	thus BE	0	[(B - A) / (C - A)] x D	This

TRIGGER LEVEL FOR TC-99m 2000 dpm.

		SOURCE IN		Form VARS-1
	THE RESERVE OF THE PERSON OF T	ALL PROPERTY AND LEASE SHALL BE ARREST OF THE STATE OF TH		
merenneng-	Source ID No	Inventory by: Manufacturer	Description / Use	Location
0.	319-119-05	NEN	00-60 -11/23/77	***************************************
	319-119-05	NEN	Co-57 -11/23/77	
2	2060379A 12	NEN	CO-57 -3/6/79	AND DESCRIPTION OF THE PERSON
3	2060379A 12	NEN	0-57 -2/22/80	AND DESCRIPTION OF THE PERSON
4		NEN	co57 - 4/82	
5	2060482B	NEW	co57 - 4/81	
6	2060481B	NEN	co57 - 9/83	
7	2060983A-16	Amersham	co57 - 7/1/85	
8			CO57 - 11/2/88	
9	9031 MA	Amersham	Cs137 - 11/77	
10	- Indiana - Indi	NEN	co57-3/1/87	
11	7025 MA	Amersham	Dosimeter Source	90 uCi
12		Management of the second Assessment Assessment of the second of the seco	CHARLES OF THE PARTY OF THE PAR	terder services
Inve	entory Date:	Inventory by:		Location
No	the dispersion of the contract	Manufacturer	Description / Use	The second state of the second
1	-		A REAL PROPERTY OF THE PROPERT	
2	58 221012-09	Capintec	057 - 9/21/90	-
3	2012 141	Amersham	CS137 - 12/1/86	****
4	2511 NA	Amersham	BA133 - 11/1/86	
-	=231		CO57 Ruler - 6/2	20/83
-	#289 -3389	Nuclear Assoc.	CO57 Spot Marker	r - 6/20/83
posente.	7 7240	Amersham	CO57 Penpoint	113 manual 1
-	COLUMN DESCRIPTION OF STREET,		CS137 Spot Mark	
-	8 2001	DuPont	cos7 Flood Sour	ce (10mCi)3/15/89
-	• \$801	NEN	Cs137 Irridiato	
-	10	NEN	cos7 Flood Sour	
	11 296	To see a second		

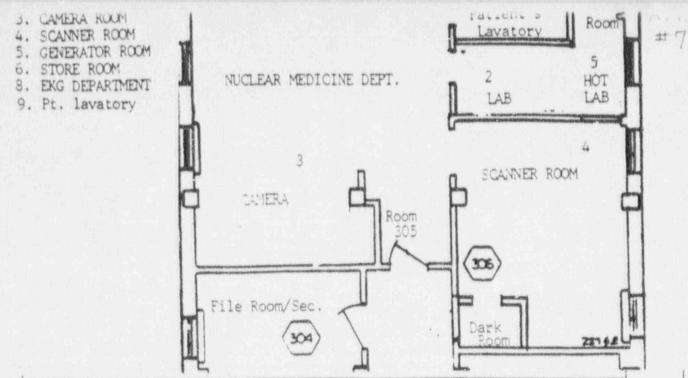
Action Level: Report all lost or missing sources to ASO



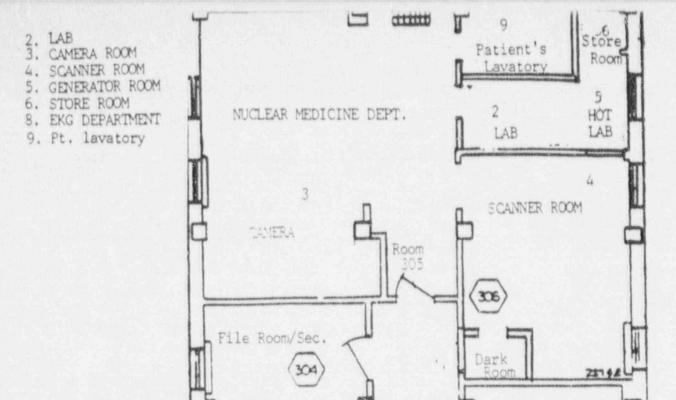
vern	ory Date:	Inventory by:	The second secon	NAMES OF THE OWNER, AND THE OWNER, WHEN THE OW
lo.	Source ID No	Manufacturer	Description / Use	Location
1	319-119-05	Jour Conferred	00-60 -11/23/77"	
2	319-119-05	1'1	Co-57 -11/23/77	
3	2060379A 12	new Charles	co-57 -3/6/79 ·	
4	2060280A 05	new Gratant	∞-57 -2/22/80 ₁ /	L N
5	20604828	Thew Biology C.	CO57 - 4/82 -	7 2
6	2060481B	Tuningland	CO57 - 4/81 V	0 8 0 %
7	2060983A-16	11	CO57 - 9/83	
8	6643	Christian	057 - 7/1/85 ,/	
9	9031 MA	amersham	CO57 - 11/2/88 V	2
10	319-119-05	New Byline	Cs137 - 11/77	7
11	7025 MA	+ Cemurahan	CO57-3/1/87 V	Manage and control of street,
12		management of the second secon	Dosimeter Source 9	O uCi
7.00	THE RESIDENCE OF THE PERSON NAMED IN COLUMN 2 IN COLUM	THE RESERVE ASSESSMENT AND ADDRESS OF THE PARTY OF THE PA		
-				CONTRACTOR CONTRACTOR AND ADMINISTRATIVE STATE OF THE STA
BURNESH	ntory Date:	Inventory by:	Description I lies	Location
nve No.	mtory Date: Source ID No	Inventory by: Manufacturer	Description / Use	Location
No.	Source ID No	Manufacturer		
No. 1	58 221012-(i9	Manufacturer	CO57 - 9/21/90	Hot Set
No.	58 221012-09 3813 MA	Capital	057 - 9/21/90 CS137 - 12/1/86	Hot Sut
No. 1	59 221012-09 3813 MA 2511 MA	Manufacturer	CS137 - 9/21/90 CS137 - 12/1/86 BA133 - 11/1/86	Het Set Het Set Het Set
No. 1 2	58 221012-09 3813 MA 2511 MA #231	Capation Comission Comission	CS137 - 9/21/90 CS137 - 12/1/86 BA133 - 11/1/86 CO57 Ruler - 6/20	Hot Set Hot Set Hot Set 183 Camira
No. 1 2 3	59 221012-09 3813 MA 2511 MA	Cagintie Cagintie Comissium Comissium Comissium Muslies and	C057 - 9/21/90 CS137 - 12/1/86 BA133 - 11/1/86 C057 Ruler - 6/20 C057 Spot Marker	Hot feet Hot feet 1 Hot feet 183 Camina 6/20/83 camina
No. 1 2 3 4 5	58 221012-09 3813 MA 2511 MA #231 #289 - 3 3 8 9	Capation Comission Comission	CS137 - 9/21/90 CS137 - 12/1/86 BA133 - 11/1/86 CO57 Ruler - 6/20 CO57 Spot Marker CO57 Penpoint	1 Hot Sut 1 Hot Sut 1 Hot Sut 183 Camira - 6/20/83 camira 1 Let July
1 2 3 4 5 6	59 221012-09 3813 MA 2511 MA #231 #289 - 3389	Cagantia Omissiam Amizikan Nuclea ana Amissiam	CS137 - 9/21/90 CS137 - 12/1/86 BA133 - 11/1/86 CO57 Ruler - 6/20 CO57 Spot Marker CO57 Penpoint CS137 Spot Marker	1 tot Set 1 tot Set 1 tot Set 1 tot Set 1 83 Camira - 6/20/83 camira 1 tot Fet 7/24/85 for Sen
1 2 3 4 5 6 7	59 221012-09 3813 MA 2511 MA #231 #289 - 3389	Capitalian amissium amissium Auslie and	CS137 - 9/21/90 CS137 - 12/1/86 BA133 - 11/1/86 CO57 Ruler - 6/20 CO57 Spot Marker CO57 Penpoint CS137 Spot Marker CO57 Flood Source	1 Hot Sut 1 Hot Sut 1 Hot Sut 1 Hot Sut 1 83 Camira 6/20/83 camira 1 Let Tut 17/24/85 Hot Tut 2 (10mCi) 3/13/89 (1
No. 1 2 3 4 5 6 7 8	Source ID No 58 221012-09 3813 MA 2511 MA #231 #289 - 3 3 8 9 7240 5801	Capitalian Cominstian Cominstian Cominstian Cominstian Cominstan C	CS137 - 9/21/90 CS137 - 12/1/86 BA133 - 11/1/86 CO57 Ruler - 6/20 CO57 Spot Marker CO57 Penpoint CS137 Spot Marker CO57 Flood Source CC5137 Irridiator	1 /2 feet feet 1 /2 fe
No. 1 2 3 4 5 6 7 8 9	58 221012-09 3813 MA 2511 MA #231 #289 - 3 3 8 9 7 2 4 0	Capitalian Cominstian Cominstian Cominstian Cominstian Cominstan C	CS137 - 9/21/90 CS137 - 12/1/86 BA133 - 11/1/86 CO57 Ruler - 6/20 CO57 Spot Marker CO57 Penpoint CS137 Spot Marker CO57 Flood Source	1 /2 feet feet 1 /2 fe

a

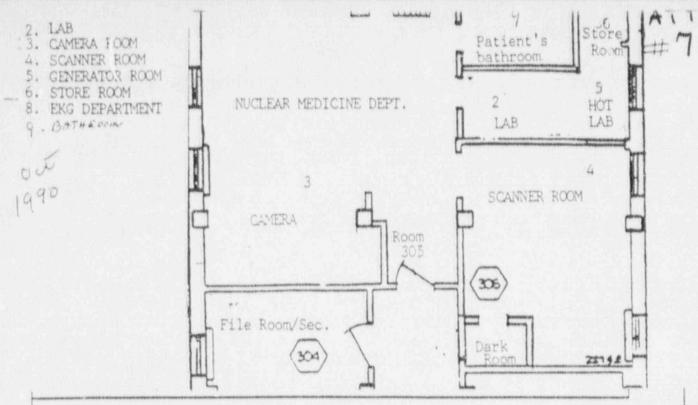
Elusar 10/2/90



Month:	Decom	der	Year: / 9	790						
Day of MO	Meter Check	Bkg Rate	Area 2	Area 3	Area 4	Area 5	Area 6	Area 8	902	1
1	Average description	AND								
2	\$100 KK STATES AND									
3	4169	0.04	. 2	0,04	0.04	0.6	0.8	-9	,2	n
4	decorativement and a second									
5	2.4	0.04	12	0.04	0.04	0,4	0,4		12	mi
6	2.4	0,04	12	0.04	0.04	0.6	0.2		2	m?
7	7 4	6.04	. 2	2.04	0.00	0.4	0.2		, 2	91
- 8										
9										
10	2.4	0,04	10.6	1004	0.04	0,6	0,6	0.02	0.2	m
11	9.4	0.04	02	0,04	0.02	0.4	0.6		0.2	m
12	2.4	0.04	0.2	0,04	0.02	0.4	0,4		0,2	199
13	2 11	1.44	0,0	0,000	0,00	0.4	914		0,2	77
14	24	0,04	02	1004	002	02	0,2		0,2	14
15										.0
16										
17									na apartement management management management management management management management management management	
18	19,4	60.0	10.08	0.04	0.04	0.4	0.8	1	0.08	m
19	-	-		marter and the second s				-		
20	124	0,04	0.2	0,02	0.02	0.2	0.05	199	0.3	147
21	NO ET	MAGIN	6			A STATE OF THE PERSON NAMED IN	THE REAL PROPERTY AND IN THE	PRESIDENT PROPERTY OF THE PARTY OF		
22	-	- Telescontrate land	-	-	-	- PROPERTY AND ADDRESS OF THE PARTY AND ADDRES			-	
23			-	-	-		-		- International Communication of the Communication	4.0
24	2.4	0.04	0.2	009	002	102	10.4	0.09	0.5	81
25	HOUL			-		-	-			100
26	24	0.02	rendere co. successes and	004	0.02	0.2	10.4	0.02	0.2	56
27	124	0.00	-	10.04	0.02	10.4	0.4	0.04	0.4	39
28	124	10.04	10.2	10,04	0.02	0,2	10,4	0.04	0.4	140
29	**	-	-	-	-	-	-	-		-
30		-	1	-	-	-				1
31	17.4	0.04	0.2	0.00	0.06	0.2	10.4	0.02	0.2	S



Month:			Year:						
Day of MO	Meter Check	Bkg Rate	Area 2	Area 3	Area 4	A/44 5	Area 6	Area 8	9
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
- 11									
12									
13									
14				1					
15									
16									
17									
18									
19									
20									
21									
22				-					
23				-	-				
24				-	-				
25			****	-	-				
26				-	-	-			
27			Q HAD A MARK MARKET						
28									
29				-	THE REAL PROPERTY.				
30				-					
21				4.70.01					



M	onth:	04	- 1990	Year:	1440					
	Day of MO	Meter Check	8kg Rate	Ar68	Area 3	168 L(Area 5	Area	Area S'	Survey by:
(6	1	2.4		0.02	0.04		002			1 4
	2	2.4		6.04	0.04		0.0-1			$m \circ 0$
	3	24		0.02	002		0.02			ma
	4	24		0.04	0.04		0.641	0.04		ma
	5	24		1004	0 04	0.02	0.6	0.12	0.02	mg
	3									0
	7									
	8									
	9	24		6 68	302		018	- LANGE BOOM		mg
10	10	13 K		1014	02	004	C .OH	26	024	171
	11	19 4		0.06	5.04		0.02			m 1
	12	24		102	1004		002			my
	13									-
	14	-	-							>
	15	124	-	0.04	0 04	1002	2 2	10.3	3007	12 1
(C	16	27	COLUMN TO THE OWNER.	102	1 3 44	A de most man toda de la composition	1004	THE RESERVE AND ADDRESS.		111 -
	17	1 11		100	1 6 50	10.02	()	(1004	/11
	18	13 V		1004	0.00	Tide would be the manufacture of	0.00			1917
_	19	1 1 14/		10.02	1004		604			mz
-	20				Transaction and the second	-				
-	21			Mark International Commerces	-	-			-	
	22	13,4		10.2	15.54	The desired and the second and the second	100-1	-		my
	23	1001		1928	1	-	10 08			(3 d
	24	1			1 550	-	1	***	-	1 (7 %)
4	25	214	10.2	104	10.04	10.04	104	0.9	004	6,09
	26	1.7 4	10.4	100	0.02	1002	5 0%	10,4		0.06
	27				-		Process many access and			
	28			-	-					
	29	124	10 -4	LAK	1.6.704	13,000		Lix	-	10.62
jewa.	30		10-7	3 4	1 3.02		O			-
	21	12 4	10,04	1854	1 5	or all the same of the same of the same of	2	-		

= 9 is Ot Jav