

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Enforcement Conference Report No. 030-09204/90-002

Docket No. 030-09204

License No. 31-08946-02 Priority 3 Category G

Licensee: Veterans Administration Medical Center
Batavia, New York 14020

Facility: Veterans Administration Medical Center

Enforcement Conference At: Region I, King of Prussia, Pennsylvania

Enforcement Conference Conducted: November 6, 1990

Prepared by: Christopher J. Eckert 12/11/90
Christopher J. Eckert, Health Physicist Date

Approved by: Ronald P. Bellamy December 11, 1990
Mohamed M. Sharbaky, Chief Date
Nuclear Materials Safety Section A

Enforcement Conference Summary: Enforcement Conference held in King of Prussia Pennsylvania on November 6, 1990. The licensee representatives discussed the corrective actions taken and/or to be taken as a result of the September 18, 1990 inspection. NRC representatives discussed their concern regarding the apparent lack of adequate management involvement in the licensed program and violations identified during the inspection.

DETAILS

1. Persons Attending

Veterans Administration Medical Center

William Manley, Director
Savita Puri, Chief of Staff
Syed Hasain, Chief of Nuclear Medicine

Nuclear Regulatory Commission

Richard Cooper, Deputy Director, Division of Radiation Safety
and Safeguards
Ronald Bellamy, Chief, Nuclear Materials Safety Branch
Mohamed M. Shanbaky, Chief, Nuclear Materials Safety Section A
Karla Smith, Regional Counsel
Christopher J. Eckert, Health Physicist
Keith Christopher, Regional Enforcement Specialist
Diane Screnci, Public Affairs

2. Conference Summary

On November 6, 1990 representatives of the Veterans Administration Medical Center and Region I met at the Region I Office in King of Prussia to discuss the results of the September 18, 1990 inspection.

The violations identified during the September 18 inspection were presented and discussed. NRC representatives expressed their concern regarding the apparent lack of management involvement in the licensed program, the adequacy of training provided to the Health Technician and eleven other apparent violations.

The licensee representatives acknowledged all of the inspection findings and described the actions which had been taken to bring the program into compliance since the inspection. They also committed to significant improvements to their licensed program which include recruiting a certified nuclear medicine technologist, providing better documentation of procedural changes, a more meticulous review of outside audits by the Radiation Safety Committee, and greater management involvement in the licensed program to ensure that adequate annual radiation safety audits are performed and documented. Furthermore, licensee representatives stated that the Health Technician is strictly supervised at all times by the Chief of Nuclear Medicine. The licensee representatives also stated that, even though violations have occurred, they have always been diligent in their efforts to comply with regulatory requirements and will increase their efforts to bring the program into full compliance with NRC regulations.

Enforcement options available to the NRC were reviewed.

ATTACHMENT # 1

Organization and Scope of Program

1. ORGANIZATION AND SCOPE OF PROGRAM:

The licensee operates a small Nuclear Medicine Program staffed by one full time Health Technician and one Nuclear Medicine Physician who also acts as the Radiation Safety Officer. The technician stated, and records confirmed, that about 5-6 patients per day are treated. She also stated that she reports to the Nuclear Medicine physician for all clinical matters and the Chief Radiology Technologist for administrative clinical matters and the Chief Radiology Technologist for administrative matters. The Chief, Radiology Technologist confirmed this arrangement and explained that she fills in on days when the Health Technician is out. She also stated that she performs generator elutions, prepares doses and performs imaging studies as well as being an active member of the Radiation Safety Committee.

The Radiation Safety Officer (RSO) listed on the license application left the facility approximately 9 years ago, during 1981. Since 1981, there have been two new RSO's including the current one. The first of these two was added to the license as an authorized user by license amendment #10 dated August 11, 1981. The amendment request did not specify this user as being the RSO. The current RSO has been at the facility since early 1988 acting as an authorized user and was appointed by the licensee as the facility RSO on February 25, 1988. An amendment request was filed with the NRC in July 1990 adding this physician as an authorized user, but did not request that the license be amended to show that this physician had been appointed RSO.

The inspector stated that failure to properly amend the Byproduct Materials License before changing Radiation Safety Officers is an apparent violation of License Condition 17. The licensee stated that it is possible that an amendment request was filed through the VA Headquarter Office. The inspector stated that no amendment request was filed with the NRC and the licensee was unable to provide any records of such a request.

COMMENTS: 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 (Attachment 1A) when replaced by Dr. Husain. VA Central Office (VACO), Washington, D.C., was notified at that time (Attachment 1B).

Dr. Husain was appointed as a staff physician in Nuclear Medicine on January 31, 1988, under the supervision of Dr. Puri. As Batavia had previously provided 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 (Attachment 1C). Although Batavia VAMC made the necessary notifications to VACO, we acknowledge that the NRC was not in receipt of the notifications. To improve our communications in the future, the NRC will receive a copy of all notices to VACO intended for NRC.

2. LICENSEE INTERNAL AUDITS:

The inspector reviewed the Radiation Safety Committee meeting minutes from 1988 through 1990. The minutes indicated that an outside health physics consultant conducts a program audit once a year. There is an entry in the minutes for each time the audit was conducted stating that the consultant found no problems or areas of non-compliance. However, discussions with the staff revealed that the consultant had identified numerous problems or areas of non-compliance during each audit. The inspector subsequently reviewed the audit results as documented in letters from the consultant for audits conducted on August 18, 1988, July 18, 1989, and July 11, 1990. In these letters, the consultant did express concern over many items which he felt needed improvement. The inspector verified, by record review and discussions with the staff, that some of the consultant's recommendations, such as sending the Health Technician for radiation safety training and performing linearity and accuracy testing on the dose calibrator had been accomplished, but some recommendations, dating from 1988, remain unchanged. These recommendations include calibrating survey meters annually, converting wipe test and leak test data from counts per minute into units of activity, determining the efficiency of the well counter, improving the documentation of molybdenum breakthrough testing, and noting that the Health Technician was unfamiliar with the use of the survey meter check source.

The discrepancy between the Radiation Safety Committee meeting minutes and the consultant reports indicates that the Committee may not be sufficiently involved in the management of the licensed program. No comments were provided by the licensee to explain the cause of this apparent lack of management oversight of program activities.

The licensee is required, by License Condition 17 and as documented in their ALARA program, to conduct a formal radiation safety audit, include ALARA considerations, annually. This audit is to be conducted by licensee management and the RSO. The Radiation Safety Committee meeting minutes indicated that an annual audit has been performed and no problems were identified. A discussion at the exit interview with the individuals identified in Section 1 of this report revealed that the audit was performed by the hospital QA staff, personnel with very little or no knowledge of radiation safety, for compliance with hospital regulations and

policies. Although asked, the licensee did not provide the inspector with records of annual radiation safety audits.

The findings that the annual radiation safety audit is performed by personnel with very little or no knowledge of radiation safety and the failure of this internal audit and management to identify and correct continuing problems indicates that the licensee's internal audit system is inadequate. The inspector stated that failure to perform an adequate annual radiation safety audit during 1988, and 1989, is an apparent violation of License Condition 17.

COMMENTS:

Outside Health Physicists Annual Audit: We could find no reference in the August 1988 (Attachment 2A) and the November 1988 (Attachment 2B) Radiation Safety Committee minutes of a report of findings to the Committee regarding the annual review. Although not documented in the minutes, the annual review was performed and reported to the Radiation Safety Committee on February 23, 1989 (Attachment 2C). This report does not indicate that no deficiencies were found. Corrective action was taken (Attachment 2D).

Review of the six recommendations made in the physicist's July 18, 1989 report (Attachment 2E) and the reference in the August 17, 1989 minutes (Attachment 2F) stating "no major deficiencies were found," is a judgement call and not necessarily a contradiction of terms. Except for recommendation number 4 which calls for conversion of cpm to dpm, all recommendations were corrected (Attachment 2E). Dr. Husain, however, had discussed with the physicist the issue of significance of converting cpm to dpm, especially when dealing with such low count rates. They had both agreed that it was indeed an academic exercise and delayed the implementation to a later time when the physicist could bring the necessary equipment and demonstrate to him the method of conversion. Since the inspection, the conversion of cpm (counts per minute) to dpm (disintegrations per minute) has been implemented (Attachment 2G).

Review of the physicist's July 11, 1990 report does show two recommendations (Attachment 2G). We agree that the minutes could have been more specific by indicating no significant safety or health deficiencies were found (Attachment 2H). This is more clearly defined in the 1990 Annual Review to the Radiation Safety Committee (Attachment 2I). The two recommendations noted in this report were corrected.

Calibration of Survey Meters: 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 (Attachment 2J). 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. 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 the future. In addition, if any future delays occur, arrangements will be made with another VA medical center to obtain a loan instrument.

Converting CPM to DPM: This has been addressed under "Outside Health Physicists Annual Audit".

Determining the efficiency of the well counter: The results of the calculations for Efficiency of the Packard Multiprias 2 Well Counter is dated October 11, 1990 (Attachment 2K) and shows a Tc-99m/co-57 window efficiency for cobalt 57 of 97.5% and open window efficiency for Cobalt 57 at 99.1%. Retrospectively, it is comforting to note, the conversion of cpm to dpm will be below 11,000 dpm leak NRC limit.

The Radiation Safety Committee discusses radiation health and safety issues on a quarterly basis. These health and safety issues, labeled "safety monitors" in the minutes involve misadministrations, personnel exposure levels, spills, radiation accidents, etc.

To avoid any similar future misunderstandings, a copy of the outside health physicists report will be provided to the Radiation Safety Committee and the QA Coordinator for trending and tracking purposes.

Improving the Documentation of the Mo-Breakthrough Testing: The dose tickets and elute tickets serve as a record of Mo-breakthrough, the hard copy of which is kept as a permanent record. Dr. Husain had made a conscious decision, based on various factions effecting his department functions, that he'll continue to use this method. He has, however, since the inspection initiated recording this information on a separate sheet.

Familiarity with Survey Meter Check Source: We sincerely feel that the Nuclear Medicine Technician was familiar with the survey meter check source. We agree, however, that this fact was not well communicated to the surveyor by the health technician. Verification was made on October 30, 1990 that the technician is familiar with the survey meter check source (Attachment 2L).

Annual Radiation Safety Audits: Quarterly radiation safety monitoring is conducted by the RSO and not by the Quality Assurance (QA) staff. Results of the monitoring are reported both to the Radiation Safety Committee and the QA staff for integration into the hospital-wide QA program. An abbreviated annual summary is also provided to the Radiation Safety Committee and facility QA coordinator (Attachment 2M). An expanded annual ALARA reporting mechanism (dated October 22, 1990), (Attachment 2N) to the Radiation Safety Committee and the QA coordinator, has now been implemented. In addition, a copy of the results of all external surveys will be provided to the Radiation Safety Committee and the QA Coordinator for tracking and trending.

3. TRAINING AND QUALITY OF PERSONNEL:

The Health Technician stated that prior to her present position she was an EKG Technician and has never been a licensed radiologic technologist. The Health Technician also stated that from June 1988 through July 1989 she worked evenings, with a registered technologist, learning how to perform patient studies, perform all operability and quality control measurements on the dose calibrator, elute generators, prepare doses and conduct routine radiation safety duties. In July 1989, she was assigned as the full time Health Technician for nuclear medicine procedures. The Health Technician stated that all injections are done by the Nuclear Medicine Physician or Chief Radiology Technologist when the physician is not available.

The Health Technician stated that during her initial two weeks of observation she did handle and prepare radiopharmaceuticals and elute generators. She further stated that she did not receive didactic lectures on radiation safety topics until the summer of 1989, more than one year after assuming duties as a trainee.

In addition, the licensee's training program requires that basic radiation safety training be provided to ancillary personnel, including clerical staff annually. A review of the training records and discussions with the Chief Radiology Technologist revealed that clerical staff members have not been attending the annual refresher training lecture. It appears that no control system was in place to ensure that the refresher training was provided to all the required staff at the required frequency.

The inspector stated that failure to provide the Health Technician training in accordance with the licensee's authorized training program and to provide the clerical staff the annual refresher training is an apparent violation of License Condition 17 and 10 CFR 19.12. (Details, Sections 6, 10, 11 and 12).

COMMENTS: It is true that the current technician did not have any formal previous 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.

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 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 one-to-one instructions before going to any didactic lectures (Attachment 3A).

During 1989-1990, three Radiation Safety Lectures were given by the RSO and a consultant from the University of Rochester. We were not aware that clerical staff should be included. However, the clerical staff has been included in a lecture given by the RSO on October 25, 1990 (Attachment 3B).

4. RADIATION PROTECTION PROCEDURES:

The inspector reviewed area radiation and contamination wipe survey records for the period of 1988 through 1990. The area radiation and contamination results being recorded did not indicate any contamination problems. During the inspection various waste containers were surveyed and no contamination was detected. Although the Health Technician appeared to be a conscientious worker, she did not demonstrate adequate understanding of the basic radiation safety knowledge necessary for the conduct of her duties. An interview with the Health Technician revealed that she was unable to explain the difference between counts per minute (cpm) and disintegrations per minute (dpm), was unaware of the appropriate contamination trigger levels and did not understand how to convert cpm to dpm to obtain an activity level.

Inspector review of survey records indicated that not enough wipes of areas and equipment were performed to adequately check for inadvertent spills and contamination. When questioned, the technician stated that she took a wipe of the camera but did not check the imaging table, floor or injection table. The survey

records being maintained did not contain the identify of the survey instrument used for the survey including the serial number and pertinent counting efficiencies as required by License Condition 17 and as indicated in the licensee's procedure (Appendix I, Regulatory Guide 10.8, Revision 1). The generated records appeared not to have been adequately reviewed for technical contents and compliance with regulatory requirements.

The Health Technician also did not fully understand the use of a survey meter check source (a licensee identified and uncorrected issue).

Further discussions with the RSO revealed that he was not aware of the appropriate contamination trigger levels. The RSO was able to describe how to convert from cpm to dpm but did not know nor was he able to provide documentation as to the counting instruments efficiency (a licensee identified and uncorrected issue).

A review of the sealed source leak test and inventory records demonstrated an inadequate record which could not be directly correlated to a specific source. The record contained the name of the radionuclide and a cpm value without any information necessary for matching the leak test results with a specific source. The RSO and Health Technician could not adequately explain how they could determine whether or not a source was leaking and neither knew the regulatory limit for a leaking source. The leak test record did not contain the model and serial number of each source tested, the estimated activity, the measured activity in microcuries and a description of the method used to test each sample as required by 10 CFR 35.59. The sealed source inventory is being performed annually, instead of quarterly, as required by 10 CFR 35.59.

The findings that the area survey records and leak test records do not contain all of the information as required by the licensee's procedures and federal regulations and that the sealed source inventory is being performed annually, instead of quarterly are apparent violations of License Condition 17 and 10 CFR 35.59.

COMMENTS: During NRC inspection various waste containers were surveyed and no contamination was detected. As per inspector's recommendations, we have included more areas for wipe tests and adopted new forms to include all the serial numbers (Attachment 4A). Most of the time we use only one survey meter (Victoreen) except for when it is sent out for calibration, only then do we use our backup survey meter (Keithley).

Counting efficiency for the Well Counter has been determined and is being used to convert cpm to dpm (Attachment 2K). As previously stated, a review session of safety guidelines, including survey meter check source, was conducted on October 30, 1990.

Contamination Trigger Source: The contamination trigger level we were observing was twice the background reading. Our records indicate that the radiation activity level in terms of cpm was invariably below 200 cpm.

Although we didn't have the contamination trigger level of .005 uCi (11,000 dpm) in our records, the criteria we were observing was stringent. Our assumption was that with 200 cpm as contamination level, even if the efficiency of Well Counter is 50%, the dpm would be 400 dpm which is lower than the allowable limit of 11,000 dpm. However, we have changed the procedure and now our trigger level is 0.005 uCi (11,000 dpm) for sealed sources leak test. The sealed sources were identified by a number on our records, however, we have adopted new forms which depict serial number and measured activity. The measured cpm's are now being converted to dpm's.

Sealed Source Inventory: Sealed sources were being counted for leak test every quarter instead of semi-annually. Formal inventory was recorded on a separate record annually. However, we thought that the quarterly leak test record would suffice for the purpose of quarterly inventory (Attachment 4B). A new form has been adopted to record this information quarterly and is included as new forms package. Supporting documentation is provided in Attachment 5.

5. FACILITIES:

The facilities being utilized as the Nuclear Medicine scan room and Hot Lab are not as described in the license application. The application describes the facility as consisting of 4 rooms, 2 on either side of a central hallway. During late 1988 the scan room and hot lab were relocated to rooms 303 and 307, respectively. Throughout the following 6-7 months (through June 1989) the old Nuclear Medicine Department was remodeled (the original 4 rooms) and now consists of one large imaging area which contains 2 smaller rooms, one room is used for a hot lab and the other a rest room.

This information was learned by a review of the Radiation Safety Committee meeting minutes and through discussions with the RSO. The RSO stated that a close out survey of the old department and rooms 303 and 307 was not performed either before the remodeling or after subsequent relocation into the new department. The inspector stated that failure to perform a radiological survey of the restricted facilities in the Nuclear Medicine Department prior to release for unrestricted use is an apparent violation of 10 CFR 20.201. The RSO stated that he did not know if the proper license amendments had been obtained.

The licensee was unable to provide any records of a license amendment request. The inspector stated that failure to obtain a license amendment prior to the relocation of the Nuclear Medicine Department is an apparent violation of License Condition 17.

COMMENTS: 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 surveyed 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 5A).

Failure to obtain a license amendment for renovation and alteration of the department was certainly an oversight. An updated physical description of the Nuclear Medicine Department will be included at the time of request for license renewal which is currently in process. Prior to any future relocation of restricted areas, the necessary license amendment will be requested (Attachment 5B).

6. INSTRUMENTS:

The inspector reviewed calibration records for the Victoreen 491 and Keithley 36100 survey meter used to perform required radiological surveys. The meters are required to have annual calibrations. The Victoreen meter was calibrated on 11/1/88 and 3/30/90 and the Keithley meter was calibrated on 7/27/88 and 2/90. There were no calibration records for 1989 and the RSO stated that he did not know if the meters had been calibrated during that time period. The inspector stated that failure to calibrate survey meters is an apparent violation of License Condition 17.

Records of calibration for the dose calibrator were also reviewed. The linearity test records revealed that the staff is not graphing the measured activity versus the calculated activity values as stated in the required procedure. Daily constancy records revealed that there were no decay graphs for each constancy source indicating plus or minus 5 percent of the true value. There were no records indicating that geometrical variation test was performed at the time of installation or anytime afterwards. A discussion with the Health Technician revealed that she was unaware that written procedures existed for these various tests or exactly what each procedure required. The department secretary located a copy of Regulatory Guide 10.8, Revision 1 which contains these procedures.

The findings that the dose calibrator linearities are not being graphed, the lack of constancy source decay graphs and the

lack of geometrical variation calculation are apparent violations of License Condition 17.

COMMENTS: The circumstances and corrective action related to the Victoreen 491 and Keithley 36100 survey meters have been addressed under the heading "Licensee Internal Audits". The linearity test records were tabulated every quarter. All values were within the $\pm 5\%$ limit. The tabulated values are now graphed for the last quarter and will continue to be graphed. The geometrical variation calculation should have been done annually at the time of calibration and represents an oversight.

The dose calibrator was sent out for recalibration for 1990. It was returned November 5, 1990 and the geometry recalculation was done the same day (Attachment 6).

NRC regulatory guide 10.8, Revision 2 dated August 1987, appendix C3c states, "For each source used, either plot on graph paper or log in a book the background level for each setting checked and the net activity of each constancy source".

7. PERSONNEL PROTECTION - EXTERNAL:

Records of personnel exposure were reviewed. No exposures (whole body or extremity) in excess of the licensee's Investigational Level I (125 mrem per quarter and 1875 mrem per quarter, respectively) were noted.

The inspector measured radiation levels in the Nuclear Medicine imaging room, hot lab and rest room. 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 technician stated that she does not measure radiation levels in this room as part of the routine surveys.

The inspector stated that failure to make an adequate survey to ensure compliance with the dose rate limits established in 10 CFR 20.105 (radiation levels in unrestricted areas) is an apparent violation of 10 CFR 20.201(b).

COMMENTS: No exposures (whole body or extremity) in excess of the ALARA were noted. The Hot Lab and imaging room levels were near background. The patient rest room within the department adjacent to the Hot Lab has been added to the areas to be surveyed as indicated in your inspection report. This has been accomplished

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by the implementation of a new form which includes the patient's lavatory to ensure compliance with the dose rate limits established in 10 CFR 20.105. This form is included in the new form package. (Attachment 8).

Summary: It is reassuring to note that the NRC inspection found no violations with respect to health and safety involving personnel protection, misadministration, receipt and transfer of material, use of materials, storage of materials and waste disposal.

The deficiencies outlined in the areas of record documentation and procedural matters have had our best attention and corrective actions have been taken. This is demonstrated by the eight new forms adopted that will protect against future oversights. It should be noted that action levels are incorporated as part of the recordkeeping documentation.

ATTACHMENT # 2

Annual Radiation Safety Audit
Radiation Safety Committee Minutes

RADIATION SAFETY COMMITTEE

Chairperson: S. Husain, M.D.

DATE: 8/11/88

TIME STARTED 11:05am

TIME STOPPED 11:40am

NEXT MEETING 11/10/88 @ 11:00am

PRESENT:

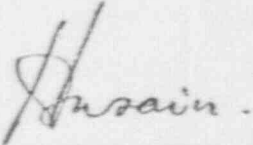


ABSENT:

EXCUSED

S. Husain, M.D.
G. Wilson, M.D.
G. Cichocki (Eng.)
D. Rippel

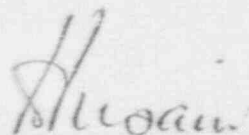
N. Dare, M.D. (Radiology)AL
R. Toledo, M.D.(Lab.) AL
G. Bruce Elliott (Nsg.)AL
S. Bigsby (Radiology)AL

ITEMS/MONITORS	DISCUSSION/ANALYSIS	ACTION PLAN - What, When, Who	REVIEW DATE
<u>SERVICE BUSINESS:</u>			
1. Minutes of the May 31 meeting.	Reviewed/accepted.	N/A	N/A
2. Radiation Safety	G. Bruce Elliott was to have reported on how many employees have availed themselves of the self learning type program that he has devised on Radiation Safety.	We will ask Mr. Elliott to have the information available at the next meeting.	November 1988
3. Quality Assurance Monitors.	A review was made of the QA monitors that Dr. Husain has developed for the Radiation Safety Committee. The monitors have been submitted to the QA Coordinator.	N/A	N/A
<u>QUALITY ASSURANCE:</u>			
1. Radiation Mishaps	There were 254 patient visits the past quarter with no spillage of radioactive materials or contamination anywhere within the hospital.	N/A	N/A
2. Radiation Exposure of Personnel	The film badge exposures worn by personnel in this medical center are within the permissible level and meet the established standards.	N/A	N/A

ITEM/MONITOR	DISCUSSION/ANALYSIS	ACTION PLAN- WHAT, WHEN, WHO	REVIEW DATE
3. Wipe Tests & Surveys	Were carried out as schedule and met the established criteria.	N/A	N/A
4. Linearity Test	Was done in June and the actual readings were within $\pm 5\%$, meeting the established criteria.	N/A	N/A
5. Survey Meter and Dose Calibrator	Were sent out for annual recalibration and have been returned.	N/A	N/A
<u>Training & Education:</u>			
1. Survey Meter	G. Cichocki will comprise a list of persons from various services to be trained in the proper use of the survey meter.	The date and time of the session will be scheduled after Dr. Husain has received the list from Mr. Cichocki. Dr. Husain will provide the instruction.	N/A
			
S. HUSAIN, M.D. Chairperson		Donna Rippe, Recorder	
APPROVED/DISAPPROVED			
			
SAVITA PURI, M.D. Chief of Staff			

ITEM/MONITOR	DISCUSSION/ANALYSIS	ACTION PLAN- WHAT, WHEN, WHO	REVIEW DATE
1. Radiation Spills/Contamination.	There has been no spillage of radioactive materials or contamination anywhere within the Medical Center this past quarter.	Continued safe handling of radioactive materials will ensure 100% compliance.	Nov. 1988
	A Disaster Drill held on 6/14/88 the disaster was a radioactive spill/contamination accident. Nuclear Medicine personnel responded and performed the necessary tasks to identify and contain the areas of contamination.		
2. Contamination Control and Decontamination Proc.	All contamination control procedures outlined in the Procedural Manual have been complied with.	Continued compliance will assure continued control.	Nov. 1988
3. Radiation Accident Response Procedure.	Response procedures are posted in the Nuclear Medicine and Radiology Dept.	Continued posting.	Nov. 1988
NUCLEAR MEDICINE/RADIOLOGY DEPT.			
1. QC/QA Program	A review of QC/QA departmental reports has been made.	There are no deficiencies. No action needed	Nov. 1988
2. Operational Radiation Safety	A review of departmental records indicated all radiation safety guidelines are being followed.	100% compliance, no action needed.	
3. Shielding	Appropriate shielding has been used for safe handling of all radioisotopes. Film badge records and rings are in the N.M. Dept.	100% compliance. Continued compliance, no action needed.	Nov. 1988

ITEM/MONITOR	DISCUSSION/ANALYSIS	ACTION PLAN- WHAT, WHEN, WHO	REVIEW DATE
4. Posting Requirements	Posting of radiation safety procedures has been done at appropriately designated areas in the Medical Center.	No action needed.	Nov. 1988
5. Document handling, storage administration, spills, etc. of all radioisotopes.	A review of records shows 100% compliance.	No action needed.	Nov. 1988
6. Dosimetry Review.	A review of dosimetry reports has been made. Radiation exposure is within normal limits for all personnel exposed to radiation.	Continue to monitor.	Nov. 1988
7. Availability of gloves, aprons, drapes and gonadal shields.	A review of existing departmental records and spot checks of the area indicate that all items are available.	Continue to monitor. No action needed.	Nov. 1988
8. Scattered radiation field mapping.	A review of the existing records indicates that we are in compliance.	No action needed.	Nov. 1988



S. HUSAIN, M.D.
Chairman, Radiation Safety Committee

Chairperson: S. Husain, M.D.

DATE: 11/10/88 TIME STARTED 11:10am TIME STOPPED 11:30am NEXT MEETING _____

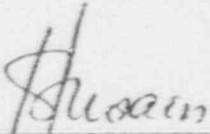


PRESENT: _____ ABSENT: _____ EXCUSED _____

- S. Husain, M.D. G. Cichocki
 C. Wilson, M.D.
 R. Toledo, M.D.
 N. Dare, M.D.
 Sharon Bigsby
 D. Rippel

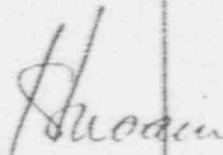
ITEMS/MONITORS	DISCUSSION/ANALYSIS	ACTION PLAN - What, When, Who	REVIEW DATE
1. Minutes of 8/11/88 meeting.	Reviewed/accepted.	N/A	N/A
Old Business:			
1. Radiation Safety Program for Nursing Service personnel.	A report was submitted by G. Bruce Elliott that indicate 139 Nursing Service personnel have completed the annual review of Radiation Safety in FY '88. The threshold of 85% was exceeded.	N/A	N/A
2. Visit by JCAH	We received a very good review by JCAH with no recommendations.	N/A	N/A
3. Renovation of the N.M. Department.	The Nuclear Medicine Gamma Camera and equipment is now in Room 303. The "Hot Lab" is in Room 307. We expect the renovation to take approx. 90 days. We expect our new camera will be here approx. Jan. 1st.	N/A	N/A
QUALITY ASSURANCE:			
1. Radiation Mishaps	There were 236 patient visits the past quarter with no spillage of radioactive materials or contamination anywhere within the hospital.	N/A	N/A

ATT. 2B

FUNCTION TO BE REVIEWED	DISCUSSION/ANALYSIS	ACTION PLAN	REVIEW
1. Radiation Spills/ Contamination.	There has been no spillage of radioactive materials or contamination anywhere within the Medical Center this past quarter.	Continued safe handling of radioactive materials will ensure 100% compliance.	Feb. 1989
2. Contamination Control and Decontamination Proc.	All contamination control procedures outlined in the Procedural Manual have been complied with.	Continued compliance will ensure continued control.	Feb. 1989
3. Radiation Accident Response Procedure.	Response procedures are posted in the Nuclear Medicine and Radiology Depts.	Continued Posting.	Feb. 1989
NUCLEAR MEDICINE/RADIOLOGY DEPT.			
1. QC/QA Program	A review of QC/QA departmental reports has been made.	There are no deficiencies. No action needed.	Feb. 1989
2. Operational Radiation Safety.	A review of departmental records indicated all radiation safety guidelines are being followed.	100% compliance, no action needed.	Feb. 1989
3. Shielding	Appropriate shielding has been used for safe handling of all radioisotopes. Film badge records and rings are in the N.M. dept.	100% compliance, no action needed.	Feb. 1989

ITEM/MONITOR	DISCUSSION/ANALYSIS	ACTION PLAN- WHAT, WHEN, WHO	REVIEW DATE
2. Radiation Exposure of Personnel	The film badge exposures worn by personnel in this medical center are within the permissible level and meet the established standards.	N/A	N/A
3. Wipe Tests & Surveys	Were carried out as scheduled and met the established criteria.	N/A	N/A
4. Linearity Test	Was done in September and the actual readings were within - 5%, meeting the established criteria.	N/A	N/A
<u>Training & Education:</u>			
1. Survey Meter	Training sessions were held on 9/16/88, 9/22/88 and 9/23/88 for services selected by G. Cichocki. Several persons attended the training given by S. Husain, M.D.	N/A	N/A
Quality Assurance Monitors are attached.			
			
SYED S. HUSAIN, M.D.		Donna Rippel/Recorder	
APPROVED/DISAPPROVED			
			
SAVITA PURI, M.D. Chief of Staff			

FUNCTION TO BE REVIEWED	DISCUSSION/ANALYSIS	ACTION PLAN	REVIEW
6. PEER REVIEW			
4. Posting Requirements.	Posting of radiation safety procedures has been done at appropriately designated areas in the Medical Center.	No action needed. 100% compliance.	Feb. 1989
5. Document handling, storage administration, spills, etc., of all radioisotopes.	A review of records shows 100% compliance.	No action needed.	Feb. 1989
6. Dosimetry Review.	A review of dosimetry reports has been made. Radiation exposure is within normal limits for all personnel exposed to radiation.	Continue to monitor.	Feb. 1989
7. Availability of gloves, aprons, drapes and gonadal shields.	A review of existing departmental records and spot checks of the area indicate that all items are available.	Continue to monitor.	Feb. 1989
8. Scattered radiation field mapping.	A review of the existing records indicates that we are in compliance.	Continue to monitor.	Feb. 1989.



SYED S. HUSIAN, M.D.
Chairman, Radiation Safety Committee.



Veterans
Administration

Memorandum

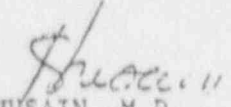
Date: February 23, 1989
From: Chairman, Radiation Safety Committee
Subj: Annual Review of QA Program
To: QA Coordinator

PURPOSE: The radiation safety program is designed to eliminate or substantially reduce the radiation safety problems experienced particularly in the Radiology/Nuclear Medicine Departments and the hospital in general.

The JCAH Inspection Team found no deficiencies with respect to the compliance with accreditation standards.

Mr. Terry Button, outside Health Physicist, inspected Radiology and Nuclear Medicine departments in August 1988 and for the most part the QA and radiation safety aspects of the departments were in compliance with the rules and regulations of NRC and other regulatory agencies.

No corrective action is needed and continued compliance with QA Monitors in CY '89 will ensure radiation safety.


SYED S. HUSAIN, M.D.

Terry M. Button, M. S.
Radiological Physicist
243 Woodacres Road
East Patchogue, NY 14221
(516) 286-0966

Dr. Husain, M. D.
Chief, Nuclear Medicine Service
V A Medical Center
Batavia, NY

Dear Dr. Husain:

The purpose of this letter is to report the findings of a simulated NRC inspection which I conducted on August 18, 1988 in the Nuclear Medicine Service at the Batavia VAMC. The following summarizes my finding:

-The Department was vacant and locked securely on my arrival. The entrance was clearly posted "Caution-Radioactive Materials". Dr Husain's number was likewise posted for emergencies.

-A survey with a calibrated GM meter was conducted and wipe tests taken. No fixed or removable contamination was noted in the Department.

-The calibration of the dose calibrator was checked with Cs-137, Co-57 and Ba-133 sources. Calibrator activities agreed with that of the source within 5% in all cases.

-Records were available for quarterly dose calibrator linearity, however the last test was apparently 4/1/88. A record for 7/1/88 linearity was not observed. This is an item of noncompliance.

-All survey meters in the Department were examined. The Kiethly 36100 survey meter did not have a calibration date posted on it nor were records available demonstrating that it had been calibrated within the last year. This is an item of noncompliance. The TA SML-2 GM survey meter has been recently calibrated (2/10/88); however this fact is not posted on the meter.

-All record of receipt, use and disposal of radioactive materials were proper and current.

-Wipe testing in the Department is well documented and up to date.

-Records of sealed source leak testing is current, however one source (NER-401H Cs-137 irradiator) which is apparently stored for eventual disposal has not been tested. This is an item of noncompliance.

-Camera QC is well documented and current. Performance (uniformity and resolution) from these tests appear reasonable.

-QC on the well counter was last conducted on 6/1/88. QC on this counter should be conducted on a monthly basis and should include calibration and efficiency determination.

The following recommendations are made:

1. Conduct and document dose calibrator linearity on a

OK-MB
7/18/89

ATT. 20

quarterly basis.

2. All survey meters must be calibrated annually. The date of calibration should be posted on the detector.

3. Cs-137 irradiator (housing, not actual source) should be included in semiannual leak testing.

4. QC should be conducted on the well counter at least monthly.

5. The syringe shields in use appear inconvenient and in poor repair. New all lead glass shields should be considered (Nuclear Pacific).

Should you have any questions, do not hesitate to contact me in this matter. Thankyou for your attention.

Sincerely yours,

Terry M. Button
Terry M. Button, M. S.
Radiological Physicist

Action taken to correct deficiencies noted at time of inspection by Radiological Physicist on 8/18/88.

#1. Linearity test to be done in July was done on June 27, 28, 29. July 1 was on a Friday, July 4th the following Monday. As we had a 3 day week end, the test was done 1 week previous. When returning from a 3 day week end, we have a heavy schedule, therefore the Linearity test was done the week before.

#2. The Kiethly 36100 survey meter has been sent out for calibration and has not yet been returned to us.

Stored #3. The Cs-137 irradiation (housing, not actual source) has been tested and will be included in semiannual leak testing until disposed of. (8-19-88)

#4. The syringe shields now in use will be replaced with all lead glass shields when necessary. *replaced*

Syeda Husain
SYED S. HUSAIN, M.D.

P35-4

35

The Sealed Source is stored and is not being used. Such sources shall however, be tested for leakage prior to any use or transfer unless they have been seal tested within 6 months prior to the date of use or transfer.

QUALITY RADIOGRAPHY

243 WOODACRES ROAD
EAST PATCHOGUE, NEW YORK 11772
(516) 286-0966

Dr. Husain, M. D.
Chief, Nuclear Medicine Service
V A Medical Center
Batavia, NY

Dear Dr. Husain:

The purpose of this letter is to report the findings of a simulated NRC inspection which I conducted on July 18, 1989 in the Nuclear Medicine Service at the Batavia VAMC. The following recommendations are made:

1. The accuracy of the dose calibrator (which had just returned from calibration) was checked with Cs-137, Co-57 and Ba-133 sources. Calibrator activities slightly exceeded the true source activity (by as much as 5%). Deviations of more than 5% are unacceptable.
2. One survey meter was due for calibration on June 27, 1989 and had not been sent out. This meter also had a weak battery and did not function properly. It was also noted that the Technologist was unfamiliar with the application of the check source on this meter.
3. Records of sealed source leak testing is current, however one source (NER-401H Cs-137 irradiator) which is apparently stored for eventual disposal has not been tested. This is an item of noncompliance.
4. Wipe test data and leak test data are recorded in cpm. These values should be converted to activities. To accomplish this, a rod source set should be purchased in order to determine the efficiency of your well counter. An alternative is to arrange Service to perform this assessment. (87)
5. Documentation of "moly brake through" procedure and daily results needs improvement.
6. The technologist should be required to attend an intensive course in radiation protection and nuclear instrumentation.

Should you have any questions, do not hesitate to contact me in this matter. Thank you for your attention.

Sincerely yours,

Terry M. Button, Ph. D.
Radiological Physicist

ATT. 2E

✓ Action taken to correct deficiencies noted at time of inspection by
Radiological Physicist on July 1989

#1. Dose Calibrator has been rechecked and activities fall within 5%.

#2. Victoreen was sent for recalibration in ~~XXXXXX~~ Sept. 1989 returned Feb. 1990.
Health Care technician is now familiar with application of check source.

#3. NER - 401 H-CS-137 irradiation has been put on the list to be tested and is
now being done.

#4.

#5. The "moly brake through" records were kept on Dose tickets and were transferred
to "record sheet" the records are updated.

#6. Tech has attended Radiation Safety course at University of Buffalo. *X*

TRAINING/INSERVICE

4/10/89 - Ficker 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)

G M J

RADIOISOTOPE DOSE COMPUTATION
AND MEASUREMENT RECORD

PATIENT'S
NAME:

W. J. ...

I.D.

175-70-11-2

STUDIES:

Stress test

NUCLIDE:

THALLIUM 201

FORM:

T-201 SAMPLE NO. *00*

LGT NO.

1210 302 KIT NO.

DATE:

31 OCT 90 13:05

CONCENTRATION:

1.070 mC/ml

DOSE DESIRED:

3.010 mC

VOLUME REQUIRED:

2.78 ml

ACTIVITY MEAS'D:

3.340 mC

TIME OF
ADMINISTRATION:

H AM
PM

SIGNATURE(S):



CAPINTEC, INC.

8 ARROW ROAD, RAMSEY, NEW JERSEY 07448
(201) 825-9500 TELEX 842375 (CAPINTEC RASNY)

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7120-1018 REV B

RADIOISOTOPE DOSE COMPUTATION
AND MEASUREMENT RECORD

PATIENT'S
NAME:

Elite

I.D.

1060043K

STUDIES:

1060043K

NUCLIDE:

TECHNETIUM 99M

FORM:

SAMPLE NO. *01*

LOT NO.

KIT NO.

DATE:

30 OCT 90 08:31

CONCENTRATION:

24.49 mC/ml

DOSE DESIRED:

10.0 uC

VOLUME REQUIRED:

0.00 ml

ACTIVITY MEAS'D:

243.0 mC

1099 ACT: 00.0 uC
STOCK: 10.00 ml

TIME OF
ADMINISTRATION:

H AM
PM

SIGNATURE(S):



CAPINTEC, INC.

8 ARROW ROAD, RAMSEY, NEW JERSEY 07448
(201) 825-9500 TELEX 842375 (CAPINTEC RASNY)

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7120-1018 REV B

RADIONUCLIDE DOSE COMPUTATION
AND MEASUREMENT RECORD

PATIENT'S NAME: B. J. Miller

I.D. 247-28-8999

STUDIES: 10/1/79
NUCLIDE: TECHNETIUM 99M

FORM: 1001 SAMPLE NO. 112
LOT NO. 112 KIT NO. 112

DATE: 01 NOV 90 08:57

CONCENTRATION: 8.980 mCi/ml

DOSE DESIRED: 15.01 mCi

VOLUME REQUIRED: 1.67 ml

ACTIVITY MEAS'D: 14.66 mCi
NO99 ACT: 00.0 mCi
STOCK: 5.00 mCi

TIME OF ADMINISTRATION: 11:00 AM
PM

SIGNATURE(S): [Signature]



CAPINTEC, INC.
8 ARROW ROAD, RAMSEY, NEW JERSEY 07448
(201) 825-9000 TELEX 842315 (CAPINTEC N457)

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RADIONUCLIDE DOSE COMPUTATION
AND MEASUREMENT RECORD

PATIENT'S NAME: [Signature]

I.D. 10-01-6712

STUDIES: [Signature]
NUCLIDE: TECHNETIUM 99M

FORM: 1001 SAMPLE NO. 01
LOT NO. 1001 KIT NO. 1001

DATE: 01 NOV 90 09:35

CONCENTRATION: 8.673 mCi/ml

DOSE DESIRED: 20.01 mCi

VOLUME REQUIRED: 2.30 ml

ACTIVITY MEAS'D: 20.30 mCi
NO99 ACT: 00.0 mCi
STOCK: 10.00 mCi

TIME OF ADMINISTRATION: 11:00 AM
PM

SIGNATURE(S): [Signature]



CAPINTEC, INC.
8 ARROW ROAD, RAMSEY, NEW JERSEY 07448
(201) 825-9000 TELEX 842315 (CAPINTEC N457)

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RADIONUCLIDE DOSE COMPUTATION
AND MEASUREMENT RECORD

PATIENT'S NAME: [Signature]

I.D. [Signature]

STUDIES: [Signature]
NUCLIDE: TECHNETIUM 99M

FORM: 1001 SAMPLE NO. 02
LOT NO. 1001 KIT NO. 1001

DATE: 01 NOV 90 09:22

CONCENTRATION: 8.555 mCi/ml

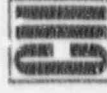
DOSE DESIRED: 15.01 mCi

VOLUME REQUIRED: 1.75 ml

ACTIVITY MEAS'D: 15.00 mCi
NO99 ACT: 00.0 mCi
STOCK: 5.00 mCi

TIME OF ADMINISTRATION: 11:00 AM
PM

SIGNATURE(S): [Signature]



CAPINTEC, INC.
8 ARROW ROAD, RAMSEY, NEW JERSEY 07448
(201) 825-9000 TELEX 842315 (CAPINTEC N457)

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Survey Meter

R6438

Keithley

32644QF
REV. B
12/27/84

CERTIFICATE OF COMPLIANCE
AND CALIBRATION

MODEL 36100 SERIAL NO. 20333 DATE 3-30-90

This notification serves to certify that the unit described above has been inspected and tested in accordance with specifications published by Keithley Instruments, Inc.

The accuracy and calibration of this instrument are traceable to the National Bureau of Standards through equipment which is calibrated at planned intervals by comparison to certified standards maintained in the Laboratories of Keithley Instruments, Inc.

The conditions of actual test are:

The above instrument is calibrated with an X-ray beam whose energy characteristics are: HVL 2.7 mmAL at 100 KVP. In addition, the instrument has been type tested at other energy points.

PK

Calibration Laboratory

Zesimos P. Lortz

Quality Assurance Supervisor

CERTIFICATE OF COMPLIANCE
AND CALIBRATIONMODEL 36120 SERIAL NO. 20JJJ DATE 11-1-88

This notification serves to certify that the unit described above has been inspected and tested in accordance with specifications published by Keithley Instruments, Inc.

The accuracy and calibration of this instrument are traceable to the National Bureau of Standards through equipment which is calibrated at planned intervals by comparison to certified standards maintained in the Laboratories of Keithley Instruments, Inc.

The conditions of actual test are:

The above instrument is calibrated with an X-ray beam whose energy characteristics are: HVL 2.7 mmAL at 100 KVP. In addition, the instrument has been type tested at other energy points.

DH
Calibration Laboratory

[Signature]
Quality Assurance Supervisor

SERVICE/COMMITTEE: RADIATION SAFETY COMMITTEECHAIRPERSON: SYED S. HUSAIN, M.D.DATE: 8/17/89TIME STARTED: 11:05amTIME COMPLETED: 11:30amNEXT MEETING: 11/9/89

PRESENT: Syed S. Husain, M.D., Chairperson
 R. E. O'Mara, M.D. (Consultant, Strong Mem. Hosp.)
 R. Toledo, M.D. (Laboratory)
 A. Bala, M.D. (Radiology)

ABSENT:

EXCUSED:

Sharon Bigsby (A.L.)
 G. Cichocki (A.L.)

IDENTIFICATION/ASSESSMENT		CORRECTIVE ACTION	FOLLOW-UP
ITEM/MONITOR	DISCUSSION/ANALYSIS	Plan-What, When, Who	Review
Minutes of 6/1/89 meeting.	Reviewed/Accepted.	N/A	N/A
Wipe Tests & Surveys	Were carried out as scheduled and met the established criteria.	N/A	N/A
Linearity Test on Dose Calibrator.	Was done in July and the actual readings were within $\pm 5\%$, meeting the established criteria.	N/A	N/A
Dose Calibrator and Survey Meter.	Were sent out for annual calibration and have been returned. Linearity test was done in the dose calibrator after it's return and the readings were within $\pm 5\%$, meeting the established criteria.	N/A	N/A
Inspection of Nuclear Med. Dept.	Terry Button, Health Physicist surveyed the N.M. Dept. There were no major deficiencies. An official report will be sent to the department.	N/A	N/A

ATT-2F

SERVICE/COMMITTEE: Radiation Safety Committee

CHAIRPERSON: Syed S. Husain, M.D.

8/17/89

IDENTIFICATION/ASSESSMENT		CORRECTIVE ACTION	FOLLOW-UP
ITEM/MONITOR	DISCUSSION/ANALYSIS	Plan-What, When, Who	Review
EDUCATION/TRAINING	<p>Molly Jankowski has attended Radiation Safety training sessions at the Univ. of Buffalo. She has obtained 4 hours of actual training in August. She will continue to attend the Lectures/training sessions when they are scheduled.</p> <p>Molly Jankowski will be joining the phlebotomists 2 x per week to learn venipuncture. This has been discussed and approved by Dr. Toledo and the personnel.</p> <p>Dr. O'Mara commented that in a V.A. Hospital the Federal rules supercede State regulations and a technician can be certified to inject under supervision after proper training.</p>	N/A	N/A
QUALITY ASSURANCE.	<p>Monitors are attached for the 3rd quarter. No deficiencies noted.</p>	N/A	N/A

SYED S. HUSAIN, M.D.

Donna Rippel
Donna Rippel/Recorder

APPROVED/~~DISAPPROVED~~

Savita Puri
SAVITA PURI, M.D.

QUALITY ASSURANCE PROGRAM

Reporting Period August 1989

Monitors for 3rd Qtr. FY '89

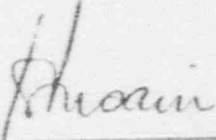
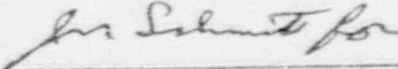
Radiation Safety

FUNCTION TO BE REVIEWED	DISCUSSION/ANALYSIS	ACTION PLAN	REVIEW
1. Radiation Spills/ Contamination.	<p>There were 326 patient imaging procedures carried out the past quarter. There has been no spillage of radioactive materials or contamination anywhere within the Medical Center this past quarter.</p>	<p>Continued safe handling of radioactive materials will ensure 100% compliance.</p>	
2. Contamination Control and Decontamination Procedure	<p>All contamination control procedures outlined in the Procedural Manual have been complied with.</p>	<p>Continued compliance will ensure continued control.</p>	
3. Radiation Accident/Response Procedure.	<p>Response procedures are posted in the Nuclear Medicine & Radiology Depts.</p>	<p>Continued posting.</p>	
NUCLEAR MEDICINE/RADIOLOGY DEPT.			
1. QC/QA Program	<p>A review of QC/QA departmental reports has been made.</p>	<p>There are no deficiencies. No action needed.</p>	
2. Operational Radiation Safety.	<p>A review of departmental records indicated all radiation safety guidelines are being followed.</p>	<p>100% compliance, no action needed.</p>	
3. Shielding	<p>Appropriate shielding has been used for safe handling of all radioisotopes. Film badge records and rings are in the N.M. dept.</p>	<p>100% compliance, no action needed.</p>	

QUALITY ASSURANCE PROGRAM
Radiation Safety Committee

Reporting Period August 1989

Monitors for 3rd Qtr. FY '89

FUNCTION TO BE REVIEWED	DISCUSSION/ANALYSIS	ACTION PLAN	REVIEW
4. Posting Requirements.	Posting of radiation safety procedures has been done at appropriately designated areas in the Medical Center.	No action needed. 100% compliance.	
5. Document handling, storage administration, spills, etc. of all radioisotopes.	A review of records indicated 100% compliance.	No action needed.	
6. Dosimetry Review	A review of dosimetry reports has been made. Radiation exposure is within normal limits for all personnel exposed to radiation.	Continue to monitor.	
7. Availability of gloves, aprons, drapes and gonadal shields.	A review of existing departmental records and spot checks of the area indicated that all items are available.	Continue to monitor.	
8. Scattered radiation field mapping.	A review of the existing records indicates that we are in compliance.	Continue to monitor.	
 SYED S. HUSAIN, M.D.		APPROVED/DISAPPROVED	
		 SAVITA PURI, M.D. Chief of Staff	



QUALITY RADIOGRAPHY

243 WOODACRES ROAD
EAST PATCHOGUE, NY 11772
(516) 286-0966

Dr. Husain, M. D.
Chief, Nuclear Medicine Service
V A Medical Center
Batavia, NY

Dear Dr. Husain:

The purpose of this letter is to report the findings of a simulated NRC inspection which I conducted on July 11, 1990 in the Nuclear Medicine Service at the Batavia VAMC. Many of the problems noted last year have been resolved. The following recommendations are made:

1. The dose calibrator and one GM survey meter (Tech Assoc) are now due for calibration.
2. Wipe test data and leak test data are recorded in cpm. These values should be converted to activities. To accomplish this, a rad source set should be used in order to determine the efficiency of your well counter. It should be noted that the efficiency of your detector for Cs-137 may be poor since the maximum upper window level is only 500 keV.

Should you have any questions, do not hesitate to contact me. Thank you!

Sincerely yours,

Terry M. Sutton

Terry M. Sutton, Ph. D.
Radiological Physicist

ATT 2'G

SERVICE/COMMITTEE: Radiation Safety Committee CHAIRPERSON: Syed S. Husain

DATE: 8/9/90 TIME STARTED: 11:00am TIME COMPLETED: 11:30am NEXT MEETING: Nov. 15, 1990

PRESENT: Syed S. Husain, M.D.
George Wilson, M.D. (Consultant, Strong Memorial Hosp.)
~~A. Bala, M.D. (Radiology)~~
~~S. Puri, M.D. (Chief of Staff)~~
E. Watson (Nursing Service)
J. Cichocki, Safety Specialist
S. Bigsby (Radiology)

EXCUSED: ~~R. Toledo (Laboratory)~~
Karen Shaw (Nursing Service)

IDENTIFICATION & ASSESSMENT		CORRECTIVE ACTION	FOLLOWUP
ITEM/MONITOR	DISCUSSION/ANALYSIS	ACTION PLAN	REVIEW DATE
1.	Minutes of May meeting reviewed/accepted.	N/A	N/A
2.	Karen Shaw is a new member to our Committee. She is a head nurse, presently assigned to the QA Office. Karen had a previous commitment to-day and could not attend the meeting, Elaine Watson is substituting for her.	N/A	N/A
3.	Wipe Tests and Surveys - were carried out as scheduled and met the established criteria.	N/A	N/A
4.	The Linearity Test was done in July and the actual readings were within \pm 5% meeting the established criteria. (see attachment)	N/A	N/A
5.	Terry Button, Health Physicist, did a simulated NRC Survey of the department and no deficiencies were found.	N/A	N/A
6.	Radiation Safety Lecture - A tentative date has been set for Dr. Greenspan to deliver a Radiation Safety Lecture. It will be held on Sept. 24, 1990 at 9:30am in the Medical Conference room. All services will be invited to attend.	N/A	N/A
QA MONITORS: No deficiencies noted. Monitors are attached.		N/A	N/A

Sydney Husain

Donna Rippel

SYED S. HUSAIN, M.D./Chairperson

Donna Rippel/Recorder

APPROVED/DISAPPROVED
Savita Puri

SAVITA PURI, M.D. / Chief of Staff

ATT.
 2H



Veterans Administration

DOCUMENTATION OF QUALITY ASSURANCE REVIEWS

THIS INCLUDES REVIEWS FOR CONTINUOUS MONITORS, MEDIPRO, OCCURRENCE SCREENING, UTILIZATION REVIEW, ETC.

Service/Program Radiation Safety

Reporting Period August 1990

Monitors For 3rd Qtr. FY '90

April, May, June


Monitors/Indicators	Discussion/Analysis	Action Plan	Follow-up
1. <u>Radiation Spills/Contamination.</u>	There were 270 patient visits/procedures carried out in the 3rd Qtr. There has been no spillage of radioactive materials or contamination anywhere within the Medical Center.	Continued safe handling of radioactive materials will ensure 100% compliance.	Nov. 1989
2. <u>Contamination Control and Decontamination Proc.</u>	All contamination control procedures outlined in the Procedural Manual have been complied with.	Continued compliance will ensure continued control.	
3. <u>Radiation Accident/Response Procedure.</u>	Response procedures are posted in the Nuclear Medicine & Radiology Departments.	Continued posting.	
NUCLEAR MEDICINE/RADIOLOGY DEPARTMENT.			
1. <u>QC/QA Program</u>	A review of QC/QA departmental reports has been made. Annual Review revealed no deficiencies.	There are no deficiencies. No action needed.	
2. <u>Operational Radiation Safety.</u>	A review of departmental records indicated all radiation safety guidelines are being followed.	100% compliance, no action needed.	
3. <u>Shielding</u>	Appropriate shielding has been used for safe handling of all radioisotopes. Film badge records and rings are in the N.M. Dept.	100% compliance, no action necessary.	
4. <u>Posting Requirements.</u>	Posting of radiation safety procedures has been done at appropriately designated areas in the Medical Center.	No action necessary. 100% compliance.	

Service/Program Radiation Safety

 Reporting Period Aug. 1990

 Monitors For 3rd Qtr.
April, May, June

Monitors/Indicators	Discussion/Analysis	Action Plan	Follow-up
1. <u>Document handling, storage, administration, pills, etc. of all radioactive</u>	A review of records indicates 100% compliance.	No action necessary.	
2. <u>Dosimetry Review.</u>	A review of dosimetry reports has been made. Radiation exposure is within normal limits for all personnel exposed to radiation.	Continue to monitor.	
3. <u>Availability of gloves, aprons, drapes and gonadal shields.</u>			
4. <u>Scattered radiation field mapping.</u>	A review of the existing records indicates that we are in compliance.	Continue to monitor.	
5. <u>Instrument Calibration</u>	A review of existing records indicates that we are in compliance.	Continue to monitor.	
6. <u>InService Education</u>	Carried out on a daily basis.	Continue to monitor.	
SYED S. HUSAIN, M.D./ Chairperson, Radiation Safety Committee			



Veterans
Administration

Memorandum

Date: January 5, 1990

From: Chairman, Radiation Safety Committee

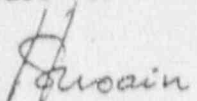
Subj: Annual Review of QA Program

To: Chief of Staff
THRU: QA Coordinator

PURPOSE: The radiation safety program is designed to eliminate or substantially reduce the radiation safety problems experienced particularly in the Radiology/Nuclear Medicine Departments and the hospital in general.

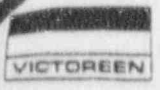
Mr. Terry Button, outside Health Physicist, inspected Radiology and Nuclear Medicine departments in July 1989 and for the most part the QA and radiation safety aspects of the departments were in compliance with the rules and regulations of NRC and other regulatory agencies.

No corrective action is needed and continued compliance with QA Monitors in CY '90 will ensure radiation safety.


SYED S. HUSAIN, M.D.

ATT 2J

Victoreen, Inc.



SURVEY METER CALIBRATION REPORT

CUSTOMER V.A. MEDICAL CENTER MFG VICTOREEN, INC.

VICTOREEN # _____ PO# _____ MODEL # 491 w/489-4
SERIAL # 1589 3236

SOURCE	SCALE	FIELD (mR/H)	READING (mR/H)	CORRECTION FACTOR*	Δ % ERROR**	COMMENTS
137es	3	1.00	2.45	0.41	2.50	
	3	.323	.80	0.40	0.00	
	1	.323	.77	0.42	5.00	
	1	.101	.23	0.44	10.00	
	3	.101	.23	0.44	10.00	
	3	.016	.04	0.40	0.00	
	L	.016	.04	0.40	0.00	
Check Source			1.8	mR/H		

INSTRUMENT ORIENTATION - PERPENDICULAR TO BEAM AXIS

BACKGROUND READING WAS .055 mR/H

* CORRECTION FACTOR = $\frac{\text{FIELD}}{\text{READING}}$

** Δ % ERROR = $\frac{\text{CORRECTION FACTOR} - (\text{C.F. @80\% DN} \times 10)}{\text{c.f. @ 80\% DN} \times 10} \times 100$

READINGS LESS THAN 10 mR/HR ARE CORRECTED FOR BACKGROUND RADIATION

Radiation levels are based on standards whose calibrations are traceable to the N.B.S.

Operational checkout by Mark Kular DATE 6-16-88
Calibrated by Mark Kular DATE 6-27-88

FREQUENCY OF RE-CALIBRATION MAY VARY DEPENDING ON LOCAL, STATE OR FEDERAL REQUIREMENTS.

6000 Cochran Road
Cleveland, Ohio 44139-3395
(216) 248-9300
FAX (216) 248-9301
TWX 810-421-8287

TRACEABLE TO N.B.S.
TEST No. DG8118783
DATED SEPT. 29, 1983
PTW CHAMBER MODEL 30-343
SERIAL NUMBER N23361-142

Model 491 W / Probe 489-4
 Serial # 1589 Serial # 3236

For a correct reading multiply the meter reading by 0.4 .

CALIBRATION DATA

Range (mR/h)	Rate (mR/h)	Reading (mR/h)	Readings (mR/h)	% Error	Comments
200	20.0	79.955	20	0.00	Cal Point
100	10.0	24.955	10	0.00	
50	10.0	25.455	10.2	2.00	
10	3.17	7.955	3.16	0.32	
10	3.17	7.955	3.18	0.02	Cal Point
10	1.00	2.505	2.5	0.00	
5	1.00	2.455	2.48	-2.00	
5	0.333	0.775	0.32	-4.02	
1	0.333	0.805	0.322	-0.31	
1	0.101	0.25	0.24	-0.99	
0.5	0.101	0.245	0.298	-2.97	
0.3	0.015	0.04	0.015	0.00	
0.1	0.015	0.04	0.015	0.00	
0.1	N/A	N/A	N/A	N/A	
Background	N/A	0.045	N/A	N/A	
Chr. Source	N/A	2.4	N/A	N/A	

* Reading with correction factor applied.

Calibrated by

James J. Smith

08-Feb-70

Checked by

Steven N. Wuloboff

01-Dec-69

Suggested re-cal. due 08-Feb-71

Traceable to the N.I.S.T.
 Test No. 26 8953 39
 Dated Feb. 8, 1969
 PTW Chamber Model C-849
 Serial No. 310

CONTROL POINT ACTIVITY LIST

OCT 25, 1990 14:41

TRANSACTION NUMBER	DATE OF REQUEST	DATE COMMITTED	DATE OBLIGATED	DATE RECEIVED
--------------------	-----------------	----------------	----------------	---------------

VENDOR: ATOMIC PRODUCTS

513-87-2-118-0019	JAN 25, 1987	JAN 26, 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
513-90-4-118-0116	AUG 20, 1990	AUG 20, 1990	SEP 28, 1990	Pending

VENDOR: KEITHLEY INSTRUMENTS

513-89-1-118-0016	AUG 23, 1988	AUG 23, 1988	DEC 5, 1988	DEC 6, 1988
513-90-1-118-0054	MAR 1, 1990	MAR 1, 1990	MAR 12, 1990	APR 16, 1990

VENDOR: VICTOREEN, INC

513-87-2-118-0018	JAN 26, 1987	JAN 26, 1987	FEB 11, 1987	MAR 16, 1987
513-88-1-118-0102	APR 28, 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

Veterans Administration Medical Center of Batavia

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

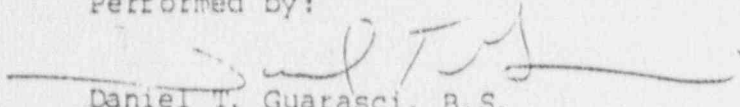
The Packard MultiPrias 2 is internally calibrated with a I-129 source. The efficiency was calibrated for a Tc-99m/Co-57 window (80 - 165 Kev) and an open window (15 - 500 Kev) using Co-57. The following data is pertinent with regards to the calculations:

Tc-99m/Co-57 Window -----		Open Window -----	
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

WELL COUNTER EFFICIENCY

October 11, 1990
Window 15 - $\frac{0.95 \bar{e}}{500 \text{ Kev}}$ CO-57

Conversion of CPM to DPM:

Subtract background from the sample counts and divide it by 0.95.

e.g. Sample Cts. 63
 Bkg. Cts. 5
 Net Cts. $\frac{58}{58}$ CPM

$$\frac{58}{0.95} = 61 \text{ DPM}$$

Trigger Level >, 11,000 DPM



Veterans
Administration


Memorandum

Date: October 30, 1990
From: Chief, Nuclear Medicine Service
Subj: Survey Meter
To: Sharon Bigsby, Supervisory Radiological Technologist

Please demonstrate the operation of the Survey Meter Check Source to Molly Jankowski and refresh her with all aspects of Survey Meter operation.

SYED S. HUSAIN, M.D.

ATTN. 2L



Veterans
Administration

ATT. 2M

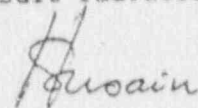
Memorandum

Date: January 5, 1990
From: Chairman, Radiation Safety Committee
Subj: Annual Review of QA Program
To: Chief of Staff
THRU: QA Coordinator

PURPOSE: The radiation safety program is designed to eliminate or substantially reduce the radiation safety problems experienced particularly in the Radiology/Nuclear Medicine Departments and the hospital in general.

Mr. Terry Button, outside Health Physicist, inspected Radiology and Nuclear Medicine departments in July 1989 and for the most part the QA and radiation safety aspects of the departments were in compliance with the rules and regulations of NRC and other regulatory agencies.

No corrective action is needed and continued compliance with QA Monitors in CY '90 will ensure radiation safety.


SYED S. HUSAIN, M.D.



Veterans
Administration

Memorandum

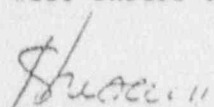
Date: February 23, 1989
From: Chairman, Radiation Safety Committee
Subj: Annual Review of QA Program
To: QA Coordinator

PURPOSE: The radiation safety program is designed to eliminate or substantially reduce the radiation safety problems experienced particularly in the Radiology/Nuclear Medicine Departments and the hospital in general.

The JCAH Inspection Team found no deficiencies with respect to the compliance with accreditation standards.

Mr. Terry Button, outside Health Physicist, inspected Radiology and Nuclear Medicine departments in August 1988 and for the most part the QA and radiation safety aspects of the departments were in compliance with the rules and regulations of NRC and other regulatory agencies.

No corrective action is needed and continued compliance with QA Monitors in CY '89 will ensure radiation safety.


SYED S. HUSAIN, M.D.

ANNUAL ALARA REPORT

October 22, 1990

VAMC, Batavia, N.Y. 14020

submitted by: Syed S. Husain, M.D., RSO

The following report has been prepared to meet the requirements of the NRC Radiation Guide 10.8, Appendix G as described in parts 1.b., 2.c.3, and 3.a.1. This report is submitted by the Radiation Safety Officer for review by Management and the Radiation Safety Committee. The purpose of the Annual ALARA Report is to evaluate the overall efforts of the Radiation Safety Officer (RSO), authorized users, workers, and management for maintaining exposures As Low As Reasonably Achievable.

I. Review of Operating Procedures:

The following documents have been reviewed and were determined acceptable in their current form:

- (x) Radioactive Materials License Number 31-08946-02.
- (x) Radiation Safety Manual(s)
- (x) Policy and Procedure Manual
- (x) Radiation Safety Committee Minutes

II Review of Past Exposure Records:

- (x) The October 1990 "year to date" totals for whole body exposure were reviewed and found to be less than 4 x the Level I value of 125 mrems/gr (Table 1, Appendix G) = 500 mrem.
- (x) The October 1990 "year to date" totals for hand exposure were reviewed and found to be less than 4 x the Level I value of 1875 mrem/gr (Table 1, Appendix G) = 7500 mrem.
- (X) The October 1990 "year to date" totals for skin exposure (shallow) were reviewed and found to be less than 4 x the Level I value of 750 mrem/gr (Table 1, Appendix G) = 3000 mrem.

III. Review of Incidents:

- Accidents/Spills None Number of _____
- Misadministrations None Number of _____

IV. Review of Inspections:

The following reports have been reviewed and the required responses and corrective actions were noted to be taken:

- NRC Inspection Report dated 9/18/90.
- RSC Minutes.

Veterans
Administration

Memorandum

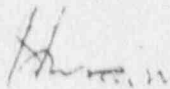
October 22, 1990

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 SAFETY LECTURE

OCTOBER 25, 1990

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

SIGNATURE

DEPARTMENT

RAM S. SUTAR M.D.
J. BRUCE S. PARNELL
J. BRUCE S. PARNELL

Lab

BMS

M. B. K. K. K.

M. M. M.

W. M. S.

B. M. S.

W. M. S.

B. M. S.

W. M. S.

W. M. S.

W. M. S.

Nursing / QA

W. M. S.

Police

W. M. S.

QA

W. M. S.

Police

W. M. S.

Nursing


W. M. S.

QA Coordinator

W. M. S.

Nuclear Med.

There was a question and answer period following the lecture.

 Veterans
Administration

Memorandum

Date October 19, 1990

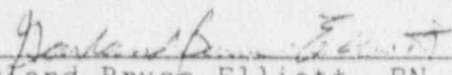
Subject Nursing Service Education

Subj. Radiation Safety Training Nursing Service Personnel for FY89 & 90

Dr. Syed Husain
Chief, Nuclear Medicine

Through: Jacqueline J. Smith, RN *JJS*
Chief, Nursing Service

1. Attached is a listing of Nursing Service personnel who completed training on radiation safety during FY 1989 and FY 1990, as you requested.
2. The training during FY 1989 and FY 1990 utilized self-instructional modules which are attached, also.



Garland Bruce Elliott, RN
Associate Chief, Nursing Service
for Education

November 10, 1988

Associate Chief, Nursing Service for Education

Radiation Safety Review for Nursing Service Personnel FY 88

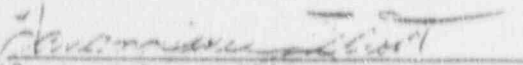
Chairperson, Radiation Safety Committee

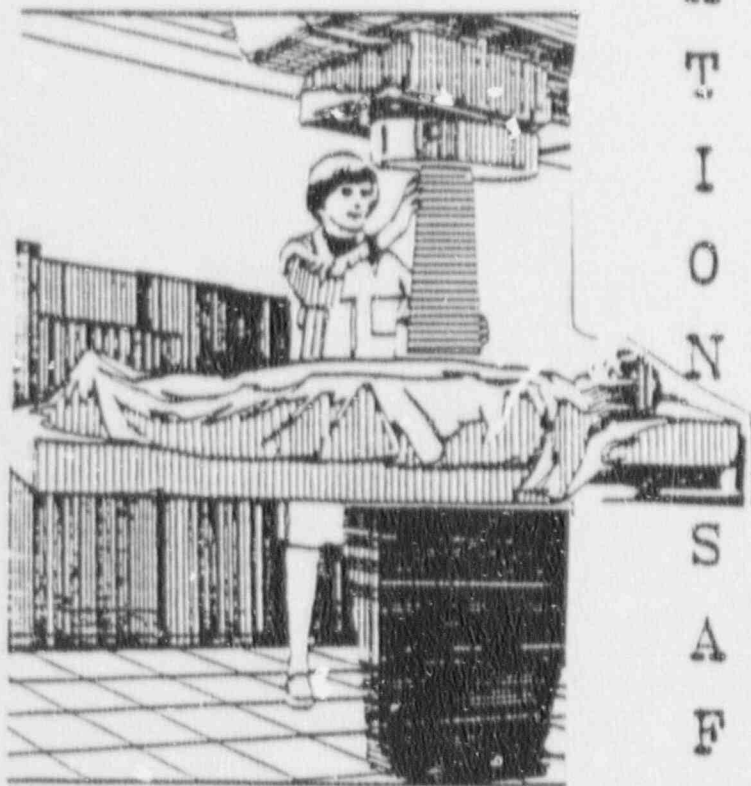
1. During Fiscal Year 88, one hundred thirty-nine Nursing Service personnel completed a review of Radiation Safety. The review was accomplished in the following three ways:

- a) attendance at Dr. Husain's lecture on Radiation Safety on March 17, 1988
- b) viewing a 16mm film titled "Radiation Safety for Support Personnel" shown March 17-24, 1988
- c) completing a self-instructional module developed by Nursing Service Education titled "Radiation Safety."

2. A copy of the self-instructional module "Radiation Safety" is attached.

3. Nursing Service has established a local standard that 85% of Nursing Service personnel will have evidence of an annual review on Radiation Safety. Compliance with this standard is monitored through the Nursing Service Quality Assurance Program. During FY 88 compliance with this standard exceeded the 85% threshold. Further "Radiation Safety" is presented in the orientation program for all newly hired Nursing Service personnel.


Garland Bruce Elliott, R.N.
Associate Chief, Nursing Service
for Education



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VETERANS ADMINISTRATION MEDICAL CENTER
BATAVIA, NEW YORK
NURSING SERVICE EDUCATION

RADIATION SAFETY TRAINING FOR NURSING SERVICE PERSONNEL
FISCAL YEAR 1989

Adamski, Patricia RN	Goldyn, Virginia RN
Allen, Ann NA	Grant, Sandra RN
Baker, Brenda LPN	Gray, Carol LPN
Barberi, Elberta RN	Green, Karen LPN
Barnum, Claradale LPN	Grimsley, Nancy RN
Benham, Donald NA	Hackett, Rose LPN
Bigsby, Shelia LPN	Haesele, June NA
Bogau, Nanci RN	Hastee, Linda RN
Bonacquisti, Jacqueline RN	Hofmaster, Lorraine LPN
Bonczyk, Patricia RN	Johnson, Sharon LPN
Bontrager, Jacqueline LPN	Knickerbocker, Lucinda RN
Borrell, Sharon RN	Kovac, Garnet RN
Boyle, Terry RN	Law, Geralyn RN
Brady, Clifford NA	Lawrence, Theresa LPN
Branch, Veronica LPN	Legg, Diane LPN
Brown, Alice LPN	Leszczynski, Patricia LPN
Brown, Mildred NA	Lew, Eunice RN
Bucciferro, Cheryl RN	Licht, Eva LPN
Buchholz, Robert NA	Lyons, Susan RN
Budnack, Elizabeth LPN	Maas, Marion RN
Bundrage, Elizabeth RN	Maas, Norma RN
Burns, Ingrid RN	Macaluso, Donna RN
Burns, Laura LPN	MacIntyre, Robert RN
Butler, Jean NA	Majors, Arlene RN
Cannon, Jeanette RN	Marvin, Cynthia LPN
Carr, Joan RN	Miano, Marion RN
Chenelly, Sandra RN	Miller, Nancy LPN
Childs, Ernestine NA	Monachino, Barbara RN
Conrad, Marjorie RN	Morrow, Donna RN
Cummings, Judith RN	Murphy, Merle LPN
Daniel, Willie NA	McCagg, Darla LPN
Dean, Alice RN	McCarty, Debora RN
Dow, Carol RN	McIntyre, Delia RN
Dow, John NA	McNeil, Laurel LPN
Earle, Barbara RN	Nelson, Barbara LPN
Egeli, Sheri RN	Nichols, Martha RN
Elliott, Bruce RN	Orban, Irene LPN
Engel, Carlotta RN	Pacino, James RN
Farrell, Patricia RN	Page, Diana RN
Feltham, Karen RN	Palumbo, Kim RN
Fisher, Beverly RN	Pearson, Connie RN
Flint, Pamela LPN	Peek, Susan LPN
Foster, Ann LPN	Penders, Linda RN
Fox, Crystal LPN	Perry, Cheryl RN
Frongetta, Carol LPN	Pfaff, Sharon LPN
Gaylord, Michelle RN	Philipps, Bette RN
Geiger, Dianne LPN	Range, Stanley NA

Ranlett, Consuelo RN
Raszewski, Linda LPN
Redband, Carol RN
Reynolds, Deborah LPN
Ricci, Catherine RN
Roblee, Diana RN
Russell, Claire RN
Sanders, Linda LPN
Saunders, Barbara RN
Schuner, Jacqueline LPN
Seaward, Robert LPN
Sere, is, Susan LPN
Shaw, Karen RN
Shelhorse, Patricia RN
Shreder, Joanne LPN
Skinner, Florence RN
Smith, Darline LPN
Smith, Gail LPN
Spencer, Judith RN
Spina, Linda LPN
Suttell, Kathleen RN
Terry, Rose RN
Thatcher, Blanton NA
Tibbs, Elaine RN
Tolejko, Anita NA
Turner, Elizabeth LPN
VanLone, Kathryn LPN
Vukman, Susan RN
Watson, Elaine RN
Weaver, Arlene LPN
Welker, Betty LPN
Wiess, Geraldine RN
Wilkes, Jo Louise RN
Williams, Shelia LPN
Winkstern, Mary RN
Wojak, Melanie RN
Zawicki, Ann RN

ATTACHMENT # 3

Training Quality of Personnel

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

- 1) Documents and Notices files.
- 2) Operating Procedures
- 3) Radiation Safety Committee
- 4) Personnel Monitoring
- 5) Procedures Performed and Documented as Required
- 6) Radioactive Material Package Receipt
- 7) Package Return to Supplier
- 8) Radionuclide Use
- 9) Waste Disposal
- 10) Instrument Calibration and Maintenance
- 11) Health Physics Equipment

amf

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)

G M J

Administration

Memorandum

January 19, 1989

Chief, Nuclear Medicine Service

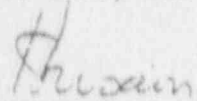
Authorization for M. Jankowski to go to VAMC, Buffalo for training. Richard Droske, Acting, Medical Center Director

THRU: Chief of Staff

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, Buffalo 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 a week for the next few weeks.

It is expected that the above arrangements 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

In Reply Refer To: 513/115

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

Dear Dr. Gona,

Thank you 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.

Husain

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

Radiation Safety Lecture

12/13/89

<u>NAME</u>	<u>SERVICE</u>
Bruce Morgan	BMS
Lee Clark	IMS
Frank Martin	BMS
David E. Brown	BMS
James [unclear]	[unclear]
[unclear]	117
John [unclear]	BMS
Kathy [unclear]	S-IMS
James [unclear]	[unclear]
[unclear]	Radiology
[unclear]	HBHC
[unclear]	RMS
[unclear]	RMS/CT
[unclear]	[unclear]
Blair [unclear]	D-WARD
[unclear]	BMS
[unclear]	Med. Dept.
[unclear]	HBHC
[unclear]	Wd B

REFERENCE SLIP

TO (Name or title-Mail routing symbol)	INITIALS-DATE
Dr. [unclear] [unclear]	
IC 38	
Sharon / Sandy / Mandy	

REASON FOR REFERENCE

<input type="checkbox"/> AS REQUESTED	<input type="checkbox"/> FOR YOUR FILES	<input type="checkbox"/> NOTE AND RETURN
<input type="checkbox"/> COMMENTS	<input type="checkbox"/> INFORMATION	<input type="checkbox"/> PER CONVERSATION
<input type="checkbox"/> CONCURRENCE	<input type="checkbox"/> NECESSARY ACTION	<input type="checkbox"/> SIGNATURE

REMARKS

Re: In-service Continuing Education

On Monday 8/1/88 @ 3:00pm a representative from Mallinckrodt, Inc. will be in the Nuclear Medicine department to demonstrate the use of Aerosol Kits to be used when doing lung scans. He will show how to use the kit for doing patients who may be on a respirator also.

Please have someone from your service attend if possible.

Thank you.

S. Husain
S. HUSAIN, M.D.

FROM	DATE
	TEL. EXT.

Reporting Form

TEACHING ROUNDS: Nuclear Medicine Dept. VAMC, Batavia, NY (Radiation Safety)

VISITING PHYSICIAN: Bennett S. Greenspan, M.D.

PRESENT POSITION: Assistant Professor of Radiology, Strong Memorial Hospital, Roch. NY

SUMMARY OF TOPIC DISCUSSED: SOME ASPECT OF RADIATION SAFETY & LOW LEVEL RADIATION

DATE: September 24, 1990

TIME: 9:30am - 10:30am

LOCATION: VAMC, Batavia, New York 14020

SIGNATURE	DEPARTMENT
<u>Syed S. Husain M.D.</u>	<u>Home</u>
<u>Eric Chao</u>	<u>Bi. Med</u>
<u>Immergan Hase</u>	<u>GMH Radiology</u>
<u>James M. LeBlond, RT</u>	<u>GMH Rad.</u>
<u>Thomas Walker</u>	<u>Med. Lab</u>
<u>Sandy Ch</u>	<u>Radiology</u>
<u>John Strock</u>	<u>Distal</u>
<u>John A. Curran</u>	<u>X-ray</u>
<u>[Signature]</u>	<u>university / GTH</u>
<u>[Signature]</u>	<u>Police</u>
<u>[Signature]</u>	<u>Police</u>
<u>Clare Watson</u>	<u>Nyg.</u>
<u>Maaron Blaxey</u>	<u>Radiology</u>
<u>N. Justice P. Johnson</u>	<u>RMS</u>

ATTACHMENT # 4

Radiation Protection Procedures

SOURCE INVENTORY				Form
(Quarterly)				VAR-11
Inventory Date:		Inventory by:		
No.	Source ID No	Manufacturer	Description / Use	Location
1	319-119-05	NEN	CO-60 -11/23/77	
2	319-119-05	NEN	Co-57 -11/23/77	
3	2060379A 12	NEN	CO-57 -3/6/79	
4	2060280A 05	NEN	CO-57 -2/22/80	
5	2060482B	NEN	CO57 - 4/82	
6	2060481B	NEN	CO57 - 4/81	
7	2060983A-16	NEN	CO57 - 9/83	
8	6643	Amersham	CO57 - 7/1/85	
9	9031 MA	Amersham	CO57 - 11/2/88	
10	319-119-05	NEN	Cs137 - 11/77	
11	7025 MA	Amersham	CO57-3/1/87	
12			Dosimeter Source 90 uCi	
Inventory Date:		Inventory by:		
No.	Source ID No	Manufacturer	Description / Use	Location
1				
2	58 221012-09	Capintec	CO57 - 9/21/90	
3	3813 MA	Amersham	CS137 - 12/1/86	
4	2511 MA	Amersham	RA133 - 11/1/86	
5	#231		CO57 Ruler - 6/20/83	
6	#289 -3389	Nuclear Assoc.	CO57 Spot Marker - 6/20/83	
7	7240	Amersham	CO57 Penpoint	
8			CS137 Spot Marker 7/24/85	
9	8801	DuPont	CO57 Flood Source (10mCi) 3/15/89	
10		NEN	Cs137 Irradiator	
11	#296	NEN	CO57 Flood Source 9/15/81	
12				
Action Level: Report all lost or missing sources to RSO				

SAMPLE

SOURCE INVENTORY *Oct 1-1990*

Form
VARS-11

(Quarterly)

Inventory Date:		Inventory by:		
No.	Source ID No	Manufacturer	Description / Use	Location
1	319-119-05	New England	Co-60 -11/23/77 ✓	
2	319-119-05	"	Co-57 -11/23/77 ✓	
3	2060379A-12	New England	Co-57 -3/6/79 ✓	
4	2060280A 05	New England	Co-57 -2/22/80 ✓	
5	2060482B	New England	Co57 - 4/82 ✓	Cabinet
6	2060481B	"	Co57 - 4/81 ✓	
7	2060983A-16	"	Co57 - 9/83 ✓	
8	6643	University	Co57 - 7/1/85 ✓	
9	9031 MA	Amerisham	Co57 - 11/2/88 ✓	
10	319-119-05	New England	Cs137 - 11/77 ✓	
11	7025 MA	Amerisham	Co57-3/1/87 ✓	
12			Dosimeter Source 90 uCi	

Inventory Date:		Inventory by:		
No.	Source ID No	Manufacturer	Description / Use	Location
1				
2	58 221012-09	Capentini	Co57 - 9/21/90	Hot Lab
3	3813 MA	Amerisham	CS137 - 12/1/86	Hot Lab
4	2511 MA	Amerisham	RA133 - 11/1/86	Hot Lab
5	#231		Co57 Ruler - 6/20/83	Camera
6	#289 - 3389	Nuclear Assoc.	Co57 Spot Marker - 6/20/83	Camera
7	7240	Amerisham	Co57 Penpoint	Hot Lab
8			CS137 Spot Marker	7/24/85 Hot Lab
9	S801	Elle Point	Co57 Flood Source (10mCi)	3/15/89 cabinet
10		New England Nuclear	Cs137 Irradiator	cabinet
11	#296	New England Nuclear	Co57 Flood Source ^{3mCi}	9/15/81 cabinet
12				

Action Level: Report all lost or missing sources to RSO

H. H. H. H.
10/2/90

Oct. 1990

SEALED SOURCE WIPE TESTS ----
(6 month intervals)

Form
VAE-10

3

Date:	10-2-90	Test by:	MJ
Isotope:	CS-137		
Source ID:	3518		
A. Bkg. CPM:			
B. Wipe CPM:		35	
C. Std. CPM:			
D. Std. Act. (uCi):			
E. Wipe Act. (uCi):	DPM	26	
$[(B - A) / (C - A)] \times D$			RSO

3

Date:	10-2-90	Test by:	MJ
Isotope:	CS-137		
Source ID:	2511		
A. Bkg. CPM:			8
B. Wipe CPM:			8
C. Std. CPM:			
D. Std. Act. (uCi):			
E. Wipe Act. (uCi):	DPM	8.4	
$[(B - A) / (C - A)] \times D$			RSO

4

Date:	10-7-90	Test by:	MJ
Isotope:	Co-57-53uCi		
Source ID:	58021017.09		
A. Bkg. CPM:			8
B. Wipe CPM:		17	
C. Std. CPM:			
D. Std. Act. (uCi):			
E. Wipe Act. (uCi):	DPM	18	
$[(B - A) / (C - A)] \times D$			RSO

5

Date:	10-7-90	Test by:	MJ
Isotope:	Co-57 10uCi		
Source ID:	5801210503		
A. Bkg. CPM:			8
B. Wipe CPM:		10	
C. Std. CPM:			
D. Std. Act. (uCi):			
E. Wipe Act. (uCi):	DPM	11	
$[(B - A) / (C - A)] \times D$			RSO

6

Date:	10-7-90	Test by:	MJ
Isotope:	CS-137		
Source ID:	16A1000000		
A. Bkg. CPM:			27
B. Wipe CPM:		7	
C. Std. CPM:			
D. Std. Act. (uCi):	DPM	7.3	
$[(B - A) / (C - A)] \times D$			RSO

8

Date:	10-2-90	Test by:	MJ
Isotope:	Co-57 3uCi		
Source ID:	290008117		
A. Bkg. CPM:			27
B. Wipe CPM:		13	
C. Std. CPM:			
D. Std. Act. (uCi):			
E. Wipe Act. (uCi):	DPM	14	
$[(B - A) / (C - A)] \times D$			RSO

Action Level: Wipe Act. > 0.005 uCi Notify the RSO

TRIGGER LEVEL FOR Tc-99m 2000 dpm.



1987 1988
1989

yearly
inventory

Inventory of Sealed Sources:

	rec'd	location:	date:	location:	date:	location:	date:
Co ⁶⁰ 319-119-05	11-23-77	hotwell	October 28, 1987 pm	hot well	1/5/88	✓	
Co ⁵⁷ 319-119-05	11-23-77	hotwell		hot well	1/5/88	✓	2/
Co ⁵⁷ :06037A-12	3-6-79	hotwell		hot well	1/5/88	✓	3/
Co ⁵⁷ 2060280A-05	2-22-80	hotwell		hot well	1/5/88	✓	3/
Co ⁵⁷ 2060482B	4-82	hotwell		hot well	1/5/88	✓	3/
Co ⁵⁷ 2060481B	4-81	hotwell		hot well	1/5/88	✓	3/
Co ⁵⁷ 2060993A-16	9-83	hotwell		hot well	1/5/88	✓	3/
Co ⁵⁷ 6643	7-1-85	hotwell		hot well	1/5/88	✓	3/
Co ¹³⁷ 319-119-05	11-77	hotwell	10/25/87 pm	hotwell	1/5/88	✓	
Co ¹³⁷ dosimeter source 90um		hotwell	10/25/87 pm	hotwell	1/5/88	✓	
CS ¹³⁷ 3813 MA	12-7-86	with cap.	10/25/87 pm	with capintec	1/5/88	✓	1/9/89
Ba ¹³³ 2511 MA	11-1-86	with capintec	10/25/87 pm	with capintec	1/5/88	✓	1/9/89
Co ⁵⁷ 7025 MA	3-1-87	with capintec	10/25/87 pm	with capintec	1/5/88	✓	1/
Co ⁵⁷ 9031 MA	11-2-88	with capintec	10/25/87 pm	with capintec	1/5/88	✓	1/9/89
Co ⁵⁷ - Machine Long							
Co ⁵⁷ - Machine Round							
CS ¹³⁷ Machine Round							
Co ⁵⁷ - Penpoint							



Jan 1990

INVENTORY OF SEALED SOURCES

	RECV'd		LOCATION	DATE	LOCATION	DATE	LOCATION	DATE
CO-60 319-119-05	11-23-77	✓						
CO-57 319-119-05	11-23-77	✓						
CO-57 2060379A 12	3-6-79	✓	HOT					
CO-57 2060280A 05	2-22-80	✓	WELL	Jan				
CO57 2060482B	4-82	✓		1990				
CO57 2060481B	4-81	✓						
CO57 2060983A-16	9-83	✓						
CO57 6643	7-1-85	✓						
Cl37 319-119-05	11-77	✓	CLOSET					
dosimeter source 90uci								
Co57 7025 MA	3-1-87	✓						
<hr/>								
CS137 3813 MA	12-1-86	✓	HOTLAB					
BA 133 2511 MA	11-1-86	✓	HOTLAB					
Co57 9031 MA	11-2-88	✓	HOTLAB					
Co57 #231 Ruler	6-20-83	✓	CAMERA					
Co57 #289 Spot marker	6-20-83	✓	CAMERA					
Co57 Penpoint 7240		✓	HOTLAB					
CS137 Spot Marker	7-24-85	✓	HOT SW					
S801 ¹⁰³ large 10mCi Co57 Flood Source	3-15-89	✓	Closet					
CS137 Irradiator ^{CS} 1290		✓	Closet					
Co57 #296 Flood source	9/15/81	✓	Closet					

1988

WIPE Test Sealed Sources (in Use) *Co57* *fair* *meter*

6/1/88 no longer used
pm.

WIPE TEST. SEALED SOURCES
PROGRAM # = 2 1-5-88
WINDOW A=CUST2 BKG(1-2)= 546 573
WINDOW B=CUST2 BKG(1-2)= 546 573
TIME=10.00 %SIGMA= .00 SCREENING=

F#	S#	TIME	CPMA	CPMB
2	1	10.00-Co ⁵⁷	17	17
2	2	10.00-Cs ¹³⁷	23	23
2	3	10.00-Ba ¹³³	15	15
2	4	10.00-Co ⁵⁷ marker	20	20

PROGRAM # = 1
WINDOW A=CUST2 BKG(1-2)= 533 573
WINDOW B=CUST2 BKG(1-2)= 533 573
TIME=10.00 %SIGMA= .00 SCREENING=
7/8/88 4 TUBES MISSING *WIPE Test*
Sealed source

F#	S#	TIME	CPMA	CPMB
1	145	10.00 Ba	47	47
1	146	10.00 Cs	52	52
1	147	10.00 Co	64	64
1	148	10.00 opt. source	34	35

4/25/88 WIPE TEST OF
Sealed Source

PROGRAM # = 3
WINDOW A=CUST1 BKG(1-2)= 111 104
WINDOW B=CUST1 BKG(1-2)= 111 104
TIME=10.00 %SIGMA= .00 SCREENING=

F#	S#	TIME	CPMA	CPMB
3	1	10.00 Co ⁵⁷	1	0
3	2	10.00 Cs ¹³⁷	4	5
3	3	10.00 Ba ¹³³	4	4

2	7	10.00 ⁵⁷ Co	8	9
2	8	10.00 Ba	18	19
2	9	10.00 ¹³⁷ Cs	23	24

Oct 3-1988

ATTACHMENT # 5

Facilities



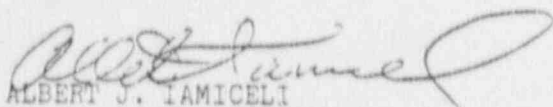
Veterans
Administration

ATT. SA

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

Close out 1988

Mon
10-17
1988

PROGRAM #=12
WINDOW A=1125 BKG(1-2)=
WINDOW B=C057 BKG(1-2)=
TIME= 1.00 %SIGMA# .00 SCREENING=

SURVEY	
0.04	MR/n
0.02	MR/n
0.02	MR/n
0.06	MR/n
0.06	MR/n
0.024	"

PH	SH	TIME	CPMA	CPMB	FLAG
1	1	1.00	80	156	
2	2	1.00	72	152	
3	3	1.00	76	156	
4	4	1.00	80	157	
5	5	1.00	80	152	
6. EVC DEPARTMENT					

10-18

SURVEY	
1. LAB	0.04 MR
2. CAMERA	0.04 "
3. GENERATOR	0.04

10-19

SURVEY	
1. LAB	0.04 MR/n
2. CAMERA	0.04 MR/n
3. GENERATOR	0.06 MR/n

10-20

SURVEY	
1. LAB	2. MR/n
2. CAMERA	2. "
3. GENERATOR	0.04

10-21

SURVEY	
1. LAB	0.04 MR/n
2. CAMERA	0.2 "
3. GENERATOR	0.06 "

Close out

Last week in old dept.

Mon
20
21
22

1. LAB	10.00								
2. CAMERA ROOM	10.00								
3. SCANNER ROOM	10.00								
4. GENERATOR ROOM	10.00								
5. STORE ROOM	10.00						0.06		"
6. ENG DEPARTMENT							0.02		"

Tues
23
24

							SURVEY		
1. LAB							0.02	me/lr	
2. CAMERA							0.02	"	
3. GENERATOR							0.04	"	

70 Wed
25

							SURVEY		
1. LAB							0.02	me/lr	
2. CAMERA							0.02	"	
3. GENERATOR							0.04	"	

Thurs
26
27

							SURVEY		
1. LAB							0.02	me/lr	
2. CAMERA							0.02	"	
3. GENERATOR							0.04	"	

Fri
28

							SURVEY		
1. LAB							0.02	me/lr	
2. CAMERA							0.02	"	
3. GENERATOR							0.06	me/lr	

Close out of
Temporary Dy

PROGRAM # = 2
 WINDOW A = CUST2 BKG(1-2) = 556 617
 WINDOW B = CUST2 BKG(1-2) = 556 617
 TIME = 10.00 %SIGMA = .00 SCREENING = 0

PH	SN	TIME	CPMA	CPMB	FLAGS
2	1	10.00	24	25	
2	2	10.00	21	21	
1	3	10.00	0	0	
2	4	10.00	0	0	
2	5	10.00	0	0	
2	6	10.00	82	82	
3	7	10.00	18	17	
4. GENERATOR ROOM					0.08
5. STORE ROOM					0.04
6. EKG DEPARTMENT					0.02
					SURVEY
1. LAB					0.08
2. CAMERA					0.04
3. GENERATOR					0.08
					SURVEY
1. LAB					0.08
2. CAMERA					0.04
3. GENERATOR					0.08
					SURVEY
1. LAB					0.08
2. CAMERA					0.04
3. GENERATOR					0.08
					SURVEY
1. LAB					0.08
2. CAMERA					0.04
3. GENERATOR					0.08

1-30
1989

31

2-1

2-2

2-3

Final walk
new Dept.

1989

2-6

4. GENERATOR ROOM

0.06

5. STORE ROOM

0.06

6. ENG. DRAWING

0.02

SURVEY

1. LAB

0.06 mo/1

2. CAMERA

0.02 "

3. GENERATOR

0.06

SURVEY

1. LAB

0.06 "

2. CAMERA

0.02 "

3. GENERATOR

0.06 "

SURVEY

1. LAB

0.08 "

2. CAMERA

0.04 "

3. GENERATOR

0.08 "

SURVEY

1. LAB

0.06 "

2. CAMERA

0.04 "

3. GENERATOR

0.06 "

2-7

2-8

2-9

2-10

PROGRAM # = 2
 WINDOW A=CUST2 BKG(1-2)= 442 512
 WINDOW B=CUST2 BKG(1-2)= 442 511
 TIME=10.00 %SIGMA= 100 SCREENING=

Close out of
Temporary Dept

	PH	SH	TIME	CPMA	CPMB	FL	SURVEY	
3-20-89	1. LA	1	10.00	37	37		0.08	ma/n
		2	10.00	37	28			
		3	10.00	37	40			
3-21	2. CA	4	10.00	42	43		0.04	ma/n
		5	10.00	36	35			
		6	10.00	36	35			
3-22	4. GE. BATTERY ROOM						0.08	"
	5. STORE ROOM						0.04	"
	6. BYO DEPARTMENT						0.02	"
3-23							SURVEY	
	1. LAB						0.08	ma/n
	2. CAMERA						0.04	ma/n
3-24	3. GENERATOR						0.08	"
							SURVEY	
	1. LAB						0.08	ma/n
3-25	2. CAMERA						0.04	ma/n
	3. GENERATOR						0.05	ma/n
							SURVEY	
3-26	1. LAB						0.04	ma/n
	2. CAMERA						0.04	"
	3. GENERATOR						0.04	"
3-27							SURVEY	
	1. LAB						0.08	"
	2. CAMERA						0.04	"
3-28	3. GENERATOR						0.08	"
							SURVEY	
	1. LAB						0.08	"
3-29	2. CAMERA						0.04	"
	3. GENERATOR						0.08	"
							SURVEY	

ENGINEERING PRECONSTRUCTION CONFERENCE CHECKLIST

ATT. 5B

- 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
- I. 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 invoice 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 # 6

Instruments

Victoreen Farvey 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&M 11/2/89 (unit cannot be sent out until money is obligated)

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

CONTROL POINT ACTIVITY LIST

OCT 25, 1990 14:41

TRANSACTION NUMBER	DATE OF REQUEST	DATE COMMITTED	DATE OBLIGATED	DATE RECEIVED
--------------------	-----------------	----------------	----------------	---------------

VENDOR: ATOMIC PRODUCTS

513-87-2-118-0019	JAN 26, 1987	JAN 26, 1987	FEB 6, 1987	APR 10, 1987
513-88-2-118-0056	JAN 8, 1988	JAN 8, 1988	JAN 11, 1988	FEB 26, 1988
513-89-3-118-0081	APR 5, 1989	APR 5, 1989	APR 12, 1989	JUL 6, 1989
513-90-4-118-0116	AUG 20, 1990	AUG 20, 1990	SEP 28, 1990	Pending

VENDOR: KEITHLEY INSTRUMENTS

513-89-1-118-0016	AUG 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, INC

513-87-2-118-0018	JAN 26, 1987	JAN 26, 1987	FEB 11, 1987	MAR 16, 1987
513-88-3-118-0102	APR 28, 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

RADIOISOTOPE DOSE COMPUTATION
AND MEASUREMENT RECORD

PATIENT'S
NAME:

Linearity

I.D.

STUDIES:

106 0027F

NUCLIDE:

TECHNETIUM 99M

FORM:

SAMPLE NO.

01

LOT NO.

KIT NO.

DATE:

09 JUL 90 08:24

CONCENTRATION:

3.00 $\mu\text{C}/\text{ml}$

DOSE DESIRED:

10.00 μC

VOLUME REQUIRED:

3.33 ml

ACTIVITY MEAS'D:

365.0 mC
M099 ACT: 0.00 μC
STOCK: 10.00 ml

TIME OF
ADMINISTRATION:

AM
PM

SIGNATURE(S):



CAPINTEC, INC.

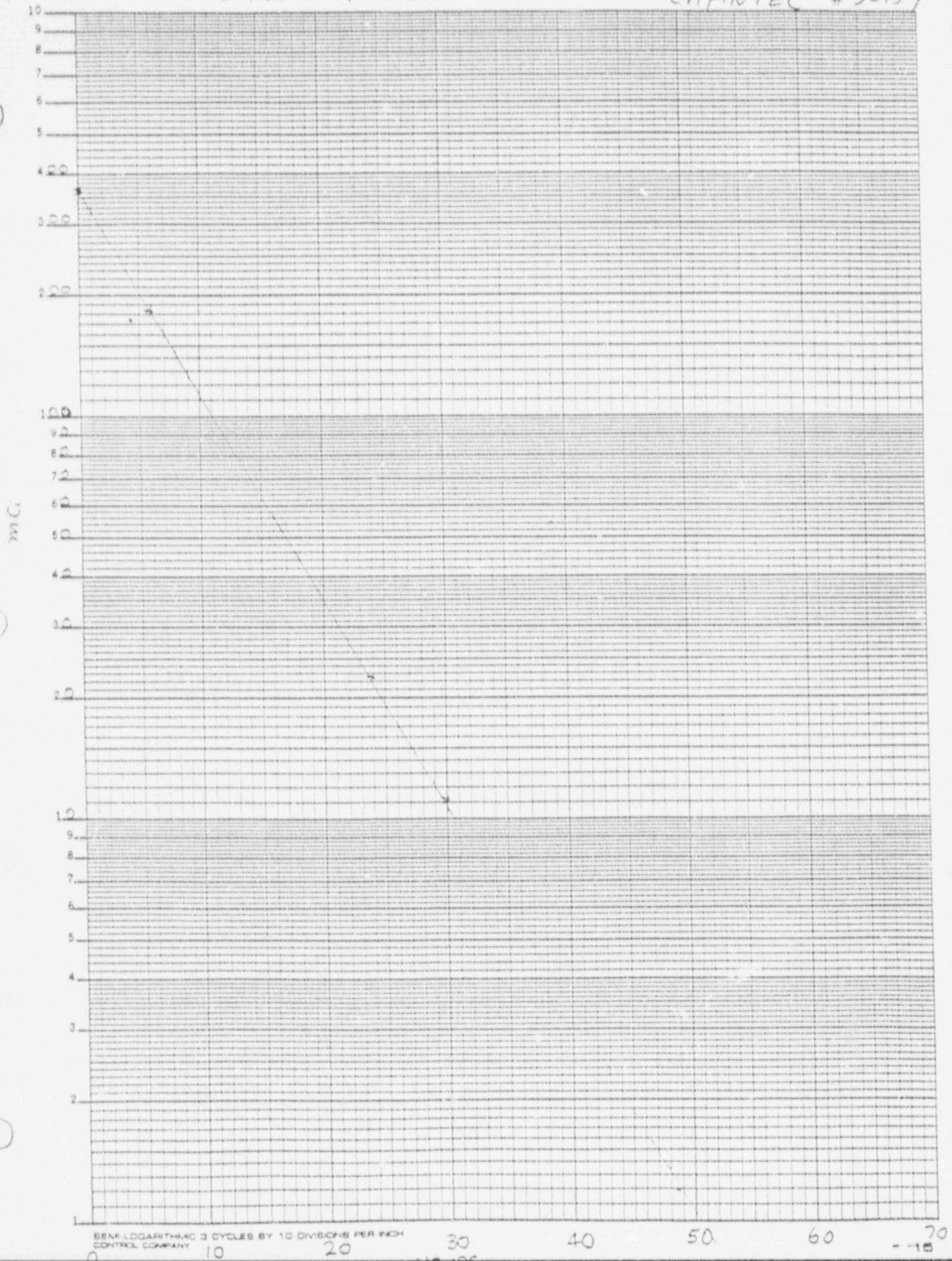
8 ARROW ROAD, RAMSEY, NEW JERSEY 07446
(201) 825-9500 TELEX 842375 (CAPINTEC RASY)

COPYRIGHT 1977

7120-1018 REV-B

LINEARITY TEST JULY 1990

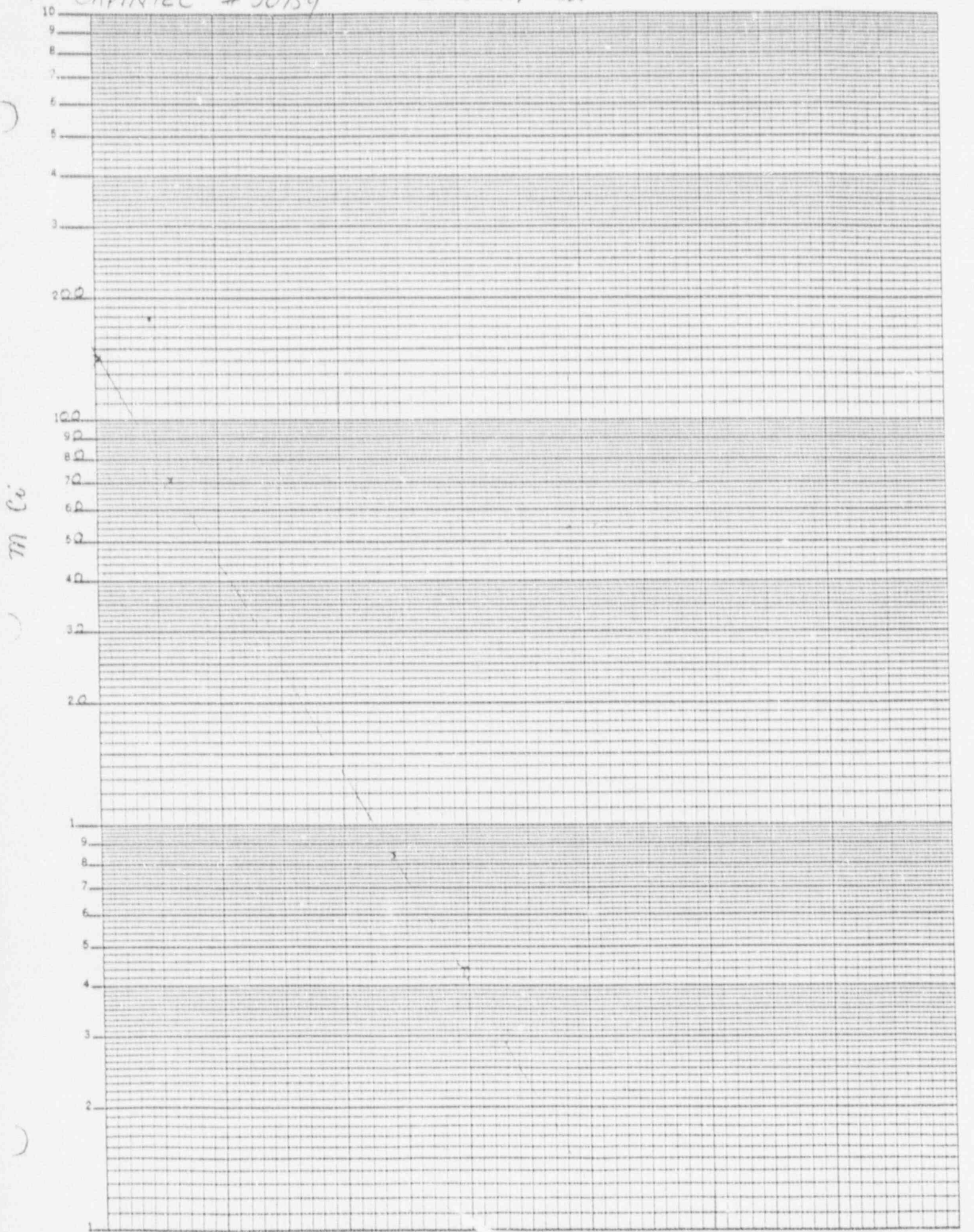
CAPINTEC #30759



CAPINTEC # 30759

LINEARITY TEST

OCT 29, 1990



SEMI-LOGARITHMIC 3 CYCLES BY 10 DIVISIONS PER INCH
CONTROL COMPANY

10 20 30 40 50 60 70

C057

SEPTEMBER 1990

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1 A 5.489mCi
2 A 5.475mCi	3 A 5.461mCi	4 A 5.447mCi	5 A 5.433mCi	6 A 5.419mCi	7 A 5.406mCi	8 A 5.392mCi
9 A 5.378mCi	10 A 5.364mCi	11 A 5.351mCi	12 A 5.337mCi	13 A 5.324mCi	14 A 5.310mCi	15 A 5.296mCi
16 A 5.283mCi	17 A 5.270mCi	18 A 5.256mCi	19 A 5.243mCi	20 A 5.229mCi	21 A 5.216mCi	22 A 5.203mCi
23 A 5.189mCi	24 A 5.176mCi	25 A 5.163mCi	26 A 5.150mCi	27 A 5.137mCi	28 A 5.124mCi	29 A 5.111mCi
30 5.098mCi						

A Isotope Serial No. Initial Activity As of
 Co_57 S8221012-09 5.310 mCi 9/14/1990

Calculated activities

Copranh's 412-963-1988

Cs-137

Amersham

Ba-133

From table daily constancy values. + plot the
% change.

Merry Anne Dell

Geometrical
Variation

1cc	2.19	
2cc	2.15	
4	2.15	
8	2.16	- ref. val.
20	2.20	
25	2.19	

$$1cc \quad \frac{2.16}{2.19} = .986$$

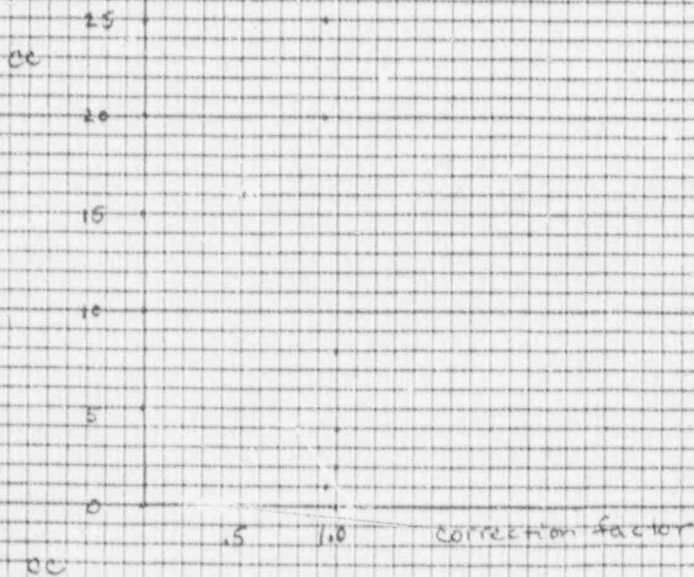
$$2cc \quad \frac{2.16}{2.15} = 1.00$$

$$4cc \quad \frac{2.16}{2.15} = 1.00$$

$$20cc \quad \frac{2.16}{2.20} = .981$$

$$25cc \quad \frac{2.16}{2.19} = .986$$

Geometrical Variation



46 0703

10 X 10 TO THE INCH = 7 X 10 INCHES
ACUFFEL & ESSEN CO. MADE IN U.S.A.

K&E

$$\begin{aligned}
 11.05 \times 32 &= 353.6 \\
 + 16 &= 176.8 \\
 + 2 &= 22.1 \\
 \times 1 &= 11.05 \\
 \times 0.125 &= 1.38
 \end{aligned}$$

$$\begin{aligned}
 365.0 &\div 353.6 \times 100 = 103.2 \\
 183.5 &\div 176.8 \times 100 = 103.7 \\
 12 &\div 22.1 \times 100 = 102.0
 \end{aligned}$$

$$1.41 \div 1.38 \times 100 = 102.1$$

EXHIBIT 9

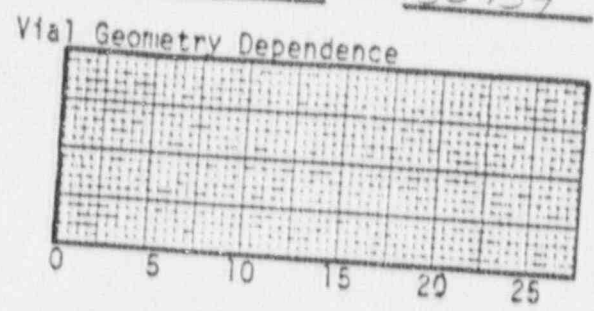
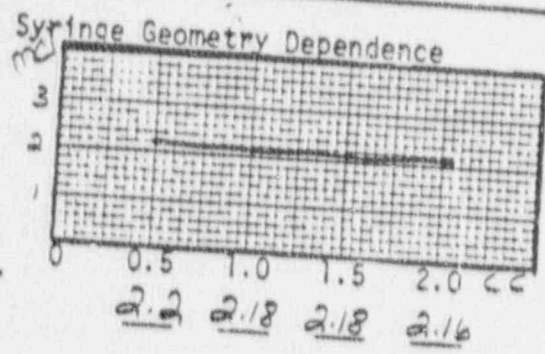
Dose Calibrator Geometry and Accuracy

rec'd
11-5-90
from RT-Calib.

Manufacturer: Cosintec

Model: CRC-303C

SN: 30759



Date: 11/5/90

By: Sharon Biggoy, RT

RSO: Shoam 11/5/90

Accuracy Sources

11/5/90

19

<p><u>250 mCi</u> of <u>CS 137</u> Model: <u>CDC-V1</u> SN: <u>3813 MA</u> Calibration date: <u>12-1-86</u></p>	<p>first assay: <u>235</u> mCi second assay: <u>238</u> mCi third assay: <u>236</u> mCi average: <u>236.3</u> mCi <u>231.5</u> mCi dev: <u>±.02</u></p>	<p>first assay: _____ mCi second assay: _____ mCi third assay: _____ mCi average: _____ mCi _____ mCi dev: _____</p>
<p><u>5.31 mCi</u> of <u>Co-57</u> Model: _____ SN: <u>58221012-09</u> Calibration date: <u>9-14-90</u></p>	<p>first assay: <u>4.61</u> mCi second assay: <u>4.61</u> mCi third assay: <u>4.60</u> mCi average: <u>4.61</u> mCi <u>4.63</u> mCi dev: <u>±.004</u></p>	<p>first assay: _____ mCi second assay: _____ mCi third assay: _____ mCi average: _____ mCi _____ mCi dev: _____</p>
<p>_____ mCi of _____ Model: _____ SN: _____ Calibration date: _____</p>	<p>first assay: _____ mCi second assay: _____ mCi third assay: _____ mCi average: _____ mCi _____ mCi dev: _____</p>	<p>first assay: _____ mCi second assay: _____ mCi third assay: _____ mCi average: _____ mCi _____ mCi dev: _____</p>

Name: Sharon Biggoy, RT

Date: 11.5.90

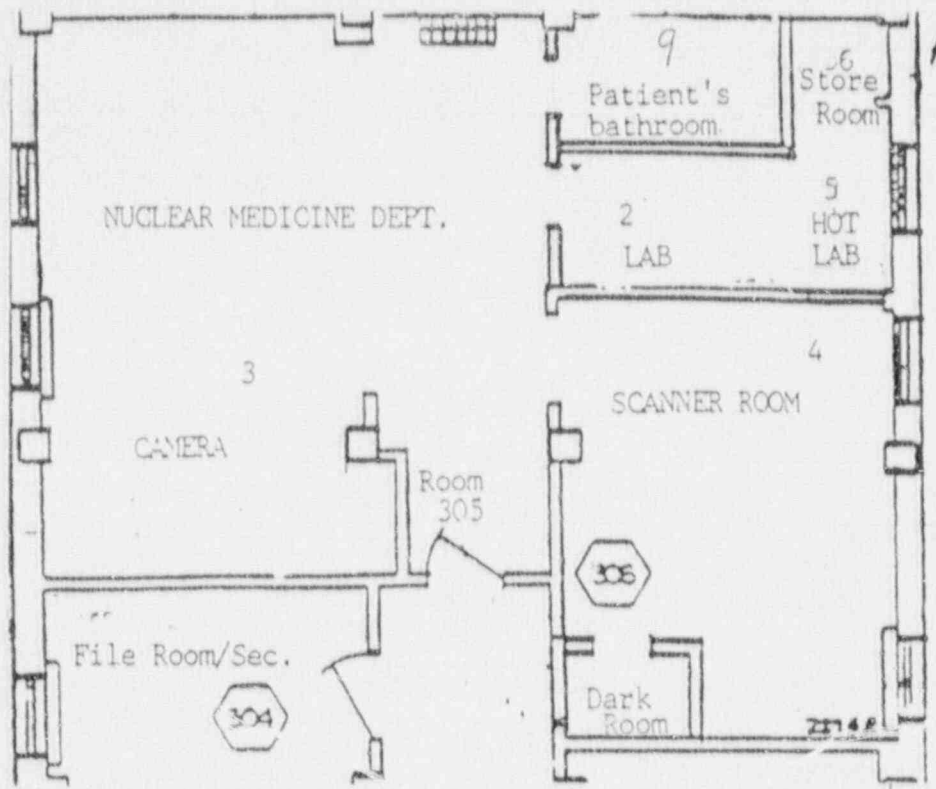
Shoam

ATTACHMENT # 7

Personnel Protection - External

- 2. LAB
- 3. CAMERA ROOM
- 4. SCANNER ROOM
- 5. GENERATOR ROOM
- 6. STORE ROOM
- 8. EKG DEPARTMENT
- 9. BATH ROOM

OCT
1990



ATT.
7

Month: OCT - 1990 Year: 1990

Day of MO	Meter Check	Rxg Rate	Area 2	Area 3	Area 4	Area 5	Area 6	Area 8	Survey by:
1	2.4		0.02	0.04		0.02			mj
2	2.4		0.07	0.04		0.01			mj
3	2.4		0.02	0.02		0.02			mj
4	2.4		0.04	0.04		0.01	0.01		mj
5	2.4		0.04	0.04	0.02	0.6	0.12	0.02	mj
6									
7									
8									
9	2.4		0.03	0.02		0.08			mj
10	2.4		0.4	0.7	0.04	0.04	0.6	0.04	mj
11	2.4		0.06	0.04		0.02			mj
12	2.4		0.2	0.02		0.02			mj
13									
14									
15	2.4		0.04	0.04	0.02	0.2	0.3		mj
16	2.4		0.2	0.1		0.04			mj
17	2.4		0.5	0.2	0.02	0.2	0.07	0.01	mj
18	2.4		0.04	0.02		0.02			mj
19	2.4		0.02	0.01		0.04			mj
20									
21									
22	2.4		0.2	0.01		0.01			mj
23	2.4		0.04	0.02		0.01			mj
24									(1.2)
25	2.4	0.2	0.4	0.04	0.04	0.4	0.7	0.04	0.03 mj
26	2.4	0.4	0.2	0.02	0.02	0.08	0.7	0.04	0.04 mj
27									
28									
29	2.4	0.4	0.8	0.07	0.04	0.4	0.4		0.05 mj
30	2.4	0.2	0.4	0.02		0.2			
31	2.4	0.04	0.04	0.01		0.01			

Action Level: > 0.5 mR/hr. add shielding or other appropriate action. If > 1.0 mR/hr notify RSO

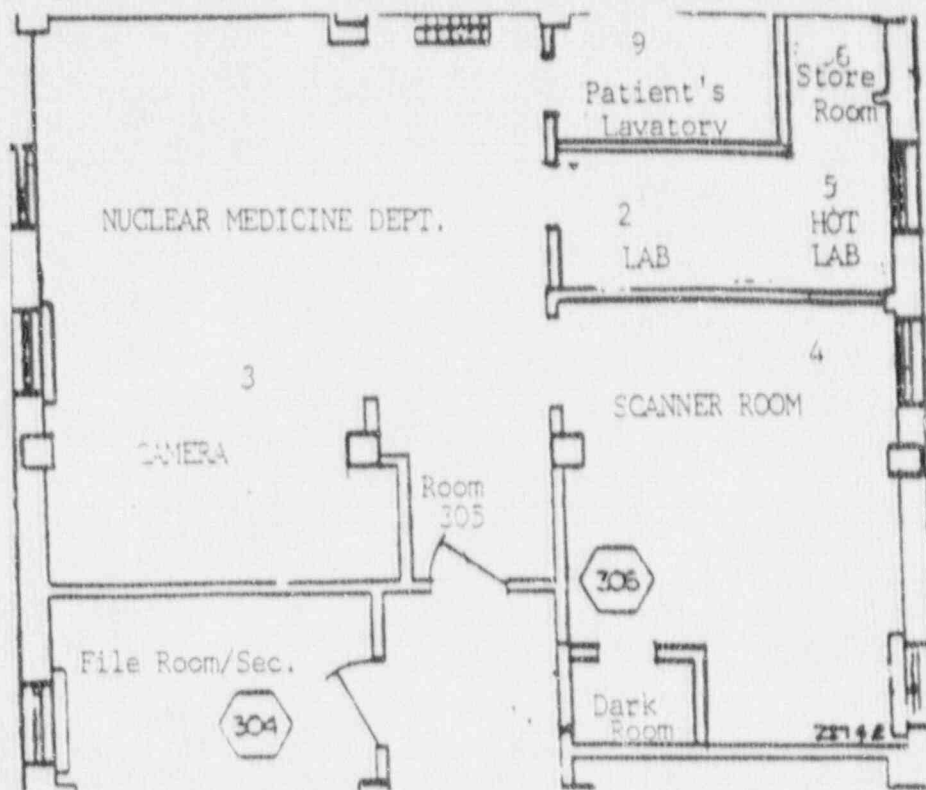
#9

#9
mj
mj
mj

ATTACHMENT # 8

New Forms

- 2. LAB
- 3. CAMERA ROOM
- 4. SCANNER ROOM
- 5. GENERATOR ROOM
- 6. STORE ROOM
- 8. EKG DEPARTMENT
- 9. Pt. lavatory



Month:		Year:		Area	Area	Area	Area	Area	Area	Area
Day	Meter	Bkg	Area	Area	Area	Area	Area	Area	Area	Area
of MO	Check	Rate	2	3	4	5	6	8	9	
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										

Action Levels: > 0.5 mR/hr. . add shielding or other appropriate action. If > 1.0 mR/hr notify RSO

AREA CONTAMINATION WIPES

Form
VARS-8

Month:		Year:			Use keyed drawing from VARS-7			
Date:	Area 2	Area 3	Area 4	Area 5	Area 6	Area 8	9	
Bkg CPM								
Wipe CPM								
Std CPM								
Std Act uCi								
Wipe uCi								

Date:	Area 2	Area 3	Area 4	Area 5	Area 6	Area 8	9
Bkg CPM							
Wipe CPM							
Std CPM							
Std Act uCi							
Wipe uCi							

Date:	Area 2	Area 3	Area 4	Area 5	Area 6	Area 8	9
Bkg CPM							
Wipe CPM							
Std CPM							
Std Act uCi							
Wipe uCi							

Date:	Area 2	Area 3	Area 4	Area 5	Area 6	Area 8	9
Bkg CPM							
Wipe CPM							
Std CPM							
Std Act uCi							
Wipe uCi							

Date:	Area 2	Area 3	Area 4	Area 5	Area 6	Area 8	9
Bkg CPM							
Wipe CPM							
Std CPM							
Std Act uCi							
Wipe uCi							

Action Level: >0.01 uCi / 100 sq. cm. . clean up removable activity and notify RSO

RADIOACTIVE WASTE DISPOSAL

Form
VARS - 13

Material Storage	
Container/Material:	_____
Storage Date:	_____ by: _____
Estimated Activity :	_____ uCi mCi
Material Disposal	
Disposal Date:	_____ by: _____
Surface Survey:	_____ mR/hr
Background:	_____ mR/hr
Instrument:	_____
Final Disposition:	_____

Material Storage	
Container/Material:	_____
Storage Date:	_____ by: _____
Estimated Activity :	_____ uCi mCi
Material Disposal	
Disposal Date:	_____ by: _____
Surface Survey:	_____ mR/hr
Background:	_____ mR/hr
Instrument:	_____
Final Disposition:	_____

Material Storage	
Container/Material:	_____
Storage Date:	_____ by: _____
Estimated Activity :	_____ uCi mCi
Material Disposal	
Disposal Date:	_____ by: _____
Surface Survey:	_____ mR/hr
Background:	_____ mR/hr
Instrument:	_____
Final Disposition:	_____

Material Storage	
Container/Material:	_____
Storage Date:	_____ by: _____
Estimated Activity :	_____ uCi mCi
Material Disposal	
Disposal Date:	_____ by: _____
Surface Survey:	_____ mR/hr
Background:	_____ mR/hr
Instrument:	_____
Final Disposition:	_____

Material Storage	
Container/Material:	_____
Storage Date:	_____ by: _____
Estimated Activity :	_____ uCi mCi
Material Disposal	
Disposal Date:	_____ by: _____
Surface Survey:	_____ mR/hr
Background:	_____ mR/hr
Instrument:	_____
Final Disposition:	_____

Material Storage	
Container/Material:	_____
Storage Date:	_____ by: _____
Estimated Activity :	_____ uCi mCi
Material Disposal	
Disposal Date:	_____ by: _____
Surface Survey:	_____ mR/hr
Background:	_____ mR/hr
Instrument:	_____
Final Disposition:	_____

SOURCE INVENTORY

Form
VARS-11

(Quarterly)

Inventory Date:		Inventory by:		
No.	Source ID No	Manufacturer	Description / Use	Location
1	319-119-05	NEN	Co-60 - 11/23/77	
2	319-119-05	NEN	Co-57 - 11/23/77	
3	2060379A 12	NEN	Co-57 - 3/6/79	
4	2060280A 05	NEN	Co-57 - 2/22/80	
5	2060482B	NEN	Co57 - 4/82	
6	2060481B	NEN	Co57 - 4/81	
7	2060983A-16	NEN	Co57 - 9/83	
8	6643	Amersham	Co57 - 7/1/85	
9	9031 MA	Amersham	Co57 - 11/2/88	
10	319-119-05	NEN	Cs137 - 11/77	
11	7025 MA	Amersham	Co57-3/1/87	
12			Dosimeter Source 90 uCi	

Inventory Date:		Inventory by:		
No.	Source ID No	Manufacturer	Description / Use	Location
1				
2	58 221012-09	Capintec	Co57 - 9/21/90	
3	3813 MA	Amersham	Cs137 - 12/1/86	
4	2511 MA	Amersham	RA133 - 11/1/86	
5	#231		Co57 Ruler - 6/20/83	
6	#289 -3389	Nuclear Assoc.	Co57 Spot Marker - 6/20/83	
7	7240	Amersham	Co57 Penpoint	
8			Cs137 Spot Marker	7/24/85
9	5801	DuPont	Co57 Flood Source (10mCi)	3/15/89
10		NEN	Cs137 Irradiator	
11	#296	NEN	Co57 Flood Source	9/15/81
12				

Action Level: Report all lost or missing sources to RSO

SEALED SOURCE WIPE TESTS

(6 month intervals)

Form
VARS-10

Date:	Test by:
Isotope:	
Source ID:	
A. Bkg. CPM:	
B. Wipe CPM:	
C. Std. CPM:	
D. Std. Act. (uCi):	
E. Wipe Act. (uCi):	
$[(B - A) / (C - A)] \times D$	RSO

Date:	Test by:
Isotope:	
Source ID:	
A. Bkg. CPM:	
B. Wipe CPM:	
C. Std. CPM:	
D. Std. Act. (uCi):	
E. Wipe Act. (uCi):	
$[(B - A) / (C - A)] \times D$	RSO

Date:	Test by:
Isotope:	
Source ID:	
A. Bkg. CPM:	
B. Wipe CPM:	
C. Std. CPM:	
D. Std. Act. (uCi):	
E. Wipe Act. (uCi):	
$[(B - A) / (C - A)] \times D$	RSO

Date:	Test by:
Isotope:	
Source ID:	
A. Bkg. CPM:	
B. Wipe CPM:	
C. Std. CPM:	
D. Std. Act. (uCi):	
E. Wipe Act. (uCi):	
$[(B - A) / (C - A)] \times D$	RSO

Date:	Test by:
Isotope:	
Source ID:	
A. Bkg. CPM:	
B. Wipe CPM:	
C. Std. CPM:	
D. Std. Act. (uCi):	
E. Wipe Act. (uCi):	
$[(B - A) / (C - A)] \times D$	RSO

Date:	Test by:
Isotope:	
Source ID:	
A. Bkg. CPM:	
B. Wipe CPM:	
C. Std. CPM:	
D. Std. Act. (uCi):	
E. Wipe Act. (uCi):	
$[(B - A) / (C - A)] \times D$	RSO

Action Level: Wipe Act. > 0.005 uCi Notify the RSO

DOSE CALIBRATOR LINEARITY

Form
VAR5-3

Mfg:

Model:

Serial No:

Start Date:		Performed by:		
Time:		Reviewed by:		RSO
Lapsed Time (hrs)	Measured Activity	Correction Factor	Corrected Activity	% Diff (M-C)/C
0		32		
6		16		
24		2		
30		1		0
48		0.125		
54		0.0625		
72		0.0078		
78		0.0039		
96		0.0005		

Start Date:		Performed by:		
Time:		Reviewed by:		RSO
Lapsed Time (hrs)	Measured Activity	Correction Factor	Corrected Activity	% Diff (M-C)/C
0		32		
6		16		
24		2		
30		1		0
48		0.125		
54		0.0625		
72		0.0078		
78		0.0039		
96		0.0005		

Start Date:		Performed by:		
Time:		Reviewed by:		RSO
Lapsed Time (hrs)	Measured Activity	Correction Factor	Corrected Activity	% Diff (M-C)/C
0		32		
6		16		
24		2		
30		1		0
48		0.125		
54		0.0625		
72		0.0078		
78		0.0039		
96		0.0005		

Start Date:		Performed by:		
Time:		Reviewed by:		RSO
Lapsed Time (hrs)	Measured Activity	Correction Factor	Corrected Activity	% Diff (M-C)/C
0		32		
6		16		
24		2		
30		1		0
48		0.125		
54		0.0625		
72		0.0078		
78		0.0039		
96		0.0005		

Action Levels: % Difference > 10% correct measured doses

PACKAGE RECEIPT and MONITORING LOG

Form
VARS-9

Supplier:	Lot ID No:	Rec'd by:	Date:	Bkg. CPM:
Isotope:	Form:	Pkg. Condition: <input type="checkbox"/> Good <input type="checkbox"/> Damaged		Wipe CPM:
Activity:	(mCi / uCi)			Std. CPM:
Date:	Time:	mR / hr @ 1 meter:		Std. Act. uCi:
[label may be pasted here]		mR / hr @ surface:		Wipe Act. uCi:

Supplier:	Lot ID No:	Rec'd by:	Date:	Bkg. CPM:
Isotope:	Form:	Pkg. Condition: <input type="checkbox"/> Good <input type="checkbox"/> Damaged		Wipe CPM:
Activity:	(mCi / uCi)			Std. CPM:
Date:	Time:	mR / hr @ 1 meter:		Std. Act. uCi:
[label may be pasted here]		mR / hr @ surface:		Wipe Act. uCi:

Supplier:	Lot ID No:	Rec'd by:	Date:	Bkg. CPM:
Isotope:	Form:	Pkg. Condition: <input type="checkbox"/> Good <input type="checkbox"/> Damaged		Wipe CPM:
Activity:	(mCi / uCi)			Std. CPM:
Date:	Time:	mR / hr @ 1 meter:		Std. Act. uCi:
[label may be pasted here]		mR / hr @ surface:		Wipe Act. uCi:

Supplier:	Lot ID No:	Rec'd by:	Date:	Bkg. CPM:
Isotope:	Form:	Pkg. Condition: <input type="checkbox"/> Good <input type="checkbox"/> Damaged		Wipe CPM:
Activity:	(mCi / uCi)			Std. CPM:
Date:	Time:	mR / hr @ 1 meter:		Std. Act. uCi:
[label may be pasted here]		mR / hr @ surface:		Wipe Act. uCi:

Supplier:	Lot ID No:	Rec'd by:	Date:	Bkg. CPM:
Isotope:	Form:	Pkg. Condition: <input type="checkbox"/> Good <input type="checkbox"/> Damaged		Wipe CPM:
Activity:	(mCi / uCi)			Std. CPM:
Date:	Time:	mR / hr @ 1 meter:		Std. Act. uCi:
[label may be pasted here]		mR / hr @ surface:		Wipe Act. uCi:

<p>Action Levels: > 10 mR/hr @ 1 meter OR > 200 mR/hr @ surface OR</p> <p style="text-align: center;">wipe activity > 0.005 uCi Notify the FISO</p>

RADIATION SAFETY QUESTIONNAIRE (PAGE 2)

5. Have all individuals in your laboratory who use radioactive materials been trained in the radiation safety and disposal requirements?
YES _____ NO _____

Who provided the training? Name: _____
affiliation: _____

Have all individuals in your laboratory submitted a Radiation Safety Training and Experience (AD-803) form to this office?
YES _____ NO _____

6. Are iodinations performed in your laboratory?
YES _____ NO _____ Not Applicable _____

Do you monitor the thyroids of all individuals who perform iodinations in your laboratory? YES _____ NO _____

What instrument is used for thyroid monitoring?
Manufacturer _____ Model No. _____

7. Do you possess radioactive materials which are difficult to dispose? YES _____ NO _____
IF YES, EXPLAIN _____

