HELPING PEOPLE
WEST SHORE HOSPITAL
the art of caring and
the science of healing...for life.

EXPRESS MAIL

December 12, 1990

Director, Office of Enforcement
U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

RE: REPLY TO A NOTICE OF VIOLATION

Dear Sir or Madam:

This letter is in response to a notice of violation and proposed imposition of civil penalty - $4,375.00 (NRC inspection report # 030-10713/90001).

Violation (1)

There was a failure to provide proper instruction to a technologist working in the Nuclear Medicine Department.

Response

The Hospital admits there was a violation in the training of the technologist involved in this incident in that the Hospital did not have a training program which addressed all pertinent NRC licensure requirements.

To strive to avoid further violation, the Hospital has implemented the following corrective actions. The technologist involved in this incident is no longer employed by. An eight week orientation training program for new technologists has been developed encompassing all pertinent information, including NRC licensure requirements, for safe/competent performance of studies. The program includes training by the Physicist, and a competency test by the Radiation Safety Officer at the conclusion of training.

1/1
Rec'd w/ck.
#40739 12-13-90
4,375.00
IE07

1465 EAST PARKDALE AVENUE • MANISTEE, MICHIGAN 49660-9785 • (616)723-3501 • FAX:(616)723-2183

The test involves observation by the Radiation Safety Officer of the technologist performing each step involved in the preparation and administration of radiopharmaceuticals for all studies. The Radiation Safety Officer will document satisfactory performance/authorization to work independently by his signature on the checklist attachment A 1. See also attachments B. The three technologists who currently work in the Nuclear Medicine Department have been assessed and determined competent by the Radiation Safety Officer per attachment C. The preceding documentation of competence will be placed in the technologists Personnel files, and be updated yearly. The Departmental quality assessment program now includes monitoring compliance with the above per attachments D 1 & 2.

In the Hospital's opinion, the above should cause it to be and remain in full compliance with this requirement.

Violation (2)

The technologist failed to wear extremity dosimetry during the elution of a molybdenum-99/technetium-99 generator, and during the preparation, assay, and injection of radiopharmaceuticals.

Response

It is admitted there was a violation because the technologist involved in this incident was not wearing a ring badge since the Hospital failed to provide one. She was wearing a waist and collar badge at the time. (The Hospital's Physicist determined exposure to her extremities as a result of this incident was within allowable limits per attachment E).

To try and avoid another violation, the new Department orientation checklist has at the top a reminder to order and provide the requisite film badges for each technologist prior to starting training. See attachment F. All technologists who currently work in the Nuclear Medicine Department have a ring badge, collar badge, and waist badge per attachment G. Incorporated in the Departmental quality assessment program is monitoring compliance with the above per attachment D 3.

The Hospital believes it is now and will remain in full compliance with this requirement.

Violation (3)

The Radiation Safety Officer did not attend all meetings of the Radiation Safety Committee.

Response

The Hospital admits during the first quarter of 1988 and 1989 the Radiation Safety Officer did not attend two Radiation Safety Committee meetings. This may have been due in part to scheduling

the meeting in the last month of each quarter, leaving little time to reschedule in case of time conflicts and remain in compliance.

This violation was corrected beginning with the second quarter of 1989, and has not reoccurred, by scheduling the Radiation Safety Committee meetings in the first month of each quarter to allow adequate time for rescheduling while remaining in compliance. See attachment H. The Departmental quality assessment program now includes monitoring compliance with the above per attachment D 4.

The Hospital is and expects to remain in full compliance with this requirement.

Violation (4)

The constancy and linearity checks of the dose calibrator were not performed.

Response

The Hospital admits violation in that the technologist involved in this incident did not perform the daily dose calibrator constancy checks. It is not known why she did not perform these checks other than conjecture and/or as a result of violation (1) above.

In an effort to avoid further violation, the following corrective actions were instituted. The technologist involved in this incident is no longer employed. Furthermore, to monitor that other technologists continue to perform daily safety checks in an appropriate and timely manner, the following two actions were initiated:

First, a safety procedure checklist is now completed for each study. The checklist is filed with the patient's medical record. See attachment I.

Second, at the beginning of each work day, the Manager reviews and initials that the radiation safety survey records are complete and timely. If a problem is identified, appropriate corrective action will be taken immediately with the individual(s).

The Hospital further admits violation during the first and fourth quarter of 1989, by failing to perform quarterly linearity tests. Cause was oversight by the Manager during absences of the technologist assigned this duty.

To try and avoid a reoccurrence of this violation, the following two steps were implemented:

First, posted on the wall in the Department, as a reminder to the technologists and Manager, are the months in which linearity tests are to be performed.

Second, the Departmental quality assessment program software now includes a reminder that a linearity check is to be performed the first month of each calendar quarter per D 5.

Included in the Departmental quality assessment program is monitoring of compliance with the above as appropriate.

It is the Hospital's opinion it is and will remain in full compliance with these requirements.

Violation (5)

A syringe radiation shield was not used when a radiopharmaceutical was prepared and later administered to a patient.

Response

It is admitted there was a violation in this incident due to the technologist not using a syringe shield. It is not known why she did not use a syringe shield other than conjecture and/or as a result of violation (1) above, since there were three available in the hot lab. During her training, and subsequent procedures, the shields were used.

To strive to avoid further violation, the following corrective actions were implemented. The technologist involved in this incident is no longer employed. In addition, this point is included in the new Department safety procedure checklist per attachment I 1.

The Hospital believes it is now and will remain in full compliance with this requirement.

Violation (6)

Area radiation surveys were not performed at the end of each day of use.

Response

The Hospital admits violation because there were several weekends when these surveys were not completed. This matter also involves the technologist noted in 1, 2, 4, & 5 above who worked as the weekend technologist. It is unknown why she did not perform this survey other than conjecture and/or as a result of violation (1) above.

In an effort to avoid reoccurrence of this violation, you will note the new Departmental orientation program includes this item per attachment A 2. Also, the Manager will include in his daily Departmental check noted in violation (1) above, verification that these surveys are performed correctly and timely. Further, completion of these surveys, per NRC requirements, is being

monitored as part of the Departmental quality assessment program per attachment D 6.

It is the Hospital's opinion it is now and will remain in full compliance with this requirement.

Violation (7)

The areas where radiopharmaceuticals were prepared for use, administered, or stored were not surveyed once each week for removable contamination.

Response

The Hospital admits this violation since there were several occasions when the weekly swipe tests were not performed. It was revealed that the problem occurred when the technologist assigned this duty was absent. The technologist covering was not certain how to perform the test, nor did he realize the importance.

To strive to avoid a repetition of this violation, a policy and procedure was developed outlining how to perform this test per attachment J. The other technologists were inserviced and now know how to perform this procedure, and the importance. The procedure will be monitored by the Manager for timely and proper completion as part of his daily Departmental inspection. Further, it is now part of the Department's quality assessment program and will be monitored monthly for compliance per attachment D 7.

Based on the preceding, it is the Hospital's position that it is and will remain in full compliance with this requirement.

Violation (8)

The manufacturers instructions were not followed during the preparation of a radiopharmaceutical.

Response

The Hospital admits there was a violation because the technologist involved in this incident did not follow the manufacturer's recommendation for total millicuries to be administered. There was a written procedure available on mixing the dose per attachment K, as well as the product insert. It is not known why she did not follow these directions other than conjecture and/or as a result of violation (1) above.

Efforts to avoid future violations will include incorporating this item into the new orientation/testing program as defined in 1 above and per attachment I 2. Also, the technologist involved in this incident is no longer employed.

It is the belief of the Hospital that the above actions place and will keep it in full compliance with this requirement.

Violation (9)

The elute from the molybdenum-99/technetium-99m generator was not measured for molybdenum concentration.

Response

It is admitted there was a violation when the technician involved in this incident did not properly perform the molybdenum breakthrough procedure. Why she did not perform this procedure properly is unknown other than conjecture and/or as a result of violation (1) above.

Corrective actions to try and avoid a reoccurrence include the following. The technician involved is no longer employed. In addition, the Manager will monitor this procedure for compliance as part of his daily inspection of the Department.

The Hospital believes it is now and will remain in full compliance with this requirement.

In summary, in addition to specific actions identified above, regarding "root cause issues," the Hospital Quality Assessment Committee will monitor Departmental compliance with all of the above items identified as incorporated in the Departmental quality assessment program. Monitoring will be through the Departmental report presented to the Committee monthly. Also, the Hospital Administrator will, as a part of his monthly meeting with the Department Manager and Radiation Safety Officer, review compliance with these violations. This will be in addition to the monitoring he will be involved in as a member of the Hospital Quality Assessment Committee. Further the Hospital is changing its Physicist and those periodic reports will be sent to the Radiation Safety Officer, Administrator, and Hospital Quality Assessment and Radiation Safety Committees to track and enforce compliance. The Radiation Safety Officer will especially monitor all activity in the Nuclear Medicine Department as it pertains to patient care and in compliance with the NRC regulations, Section 10.1 of the Regulatory Guide, Task FC 418.4. Each new employee will be subject to examination for safety and compliance of NRC directives before entering patient care. Current employees will also be trained and monitored on new directives and procedures, and ongoing nuclear medicine procedures. The Radiation Safety officer will be notified immediately of any deviation of the standard of care and safety both for patients and ASSOCIATES, and immediate appropriate measures will be taken to correct any problem. Prevention of further mishaps is the key to good patient care, and of any further potential deviation of the norm and in accordance with the Regulatory Guide of the NRC - 10.8 - Task FC 415.5. This will be followed by the Radiation Safety Officer in close detail.

Should you have any further comments or questions concerning the above, please contact Mr. Parks. Otherwise we look forward to your reply to this corrective action plan/statement of explanation.

Sincerely,

Dr. Lawrence Jackowski, Radiation Safety Officer

James Brand RT/RDMS

James Brand, Radiology Manager

Burton O. Parks, Administrator

cc: Regional Administrator
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Enc's.: Civil Penalty Check @ $4,375.00
Attachments A-K

TRAINING SYNOPSIS

November 1990

WEST SHORE HOSPITAL

NUCLEAR MEDICINE

LAB

1. WEEK ONE (Must have Ring Badge)

   A. Review Generator Elutian
   B. Review MO99 Breakthrough Check
   C. Review Dose Calibrator Constancy Check
   D. Review Daily Area Survey Check
   E. Review Weekly Area Survey Check
   F. Review Package Receipt
   G. Review "Wet Generator" Procedure
   H. Review Disposal and storage
   I. Review Return of Generators
   J. Review ALARA Concept and Safety Rules

2. WEEK TWO

   A. Generator Elutian with supervision.
   B. Perform MO99 Breakthrough Check with supervision.
   C. Perform Dose Calibrator constancy check with supervision.
   D. Perform Daily Area Survey with supervision.
   E. Perform Weekly Area Survey with supervision.
   F. Review Package receipt procedure.
   G. Review "Wet Generator" procedure.
   H. Review disposal and storage procedures and practice same.
   I. Review and practice return of Generator.
   J. Review ALARA concept.

3. WEEK THREE

   A. Practice the above procedures A-J with supervision.

   B. Learn dose preparations and scanning procedures.

4. WEEK FOUR

   A. Practice the above A-J radiation safety procedures with supervision.

   B. Perform dose preparation and scanning procedures with supervision.

   C. Inservice on intravenous injections by nursing inservice education coordinator. (To include infection control procedures).

5. WEEK FIVE

A. Practice the above A-J radiation safety procedures with supervision.

B. Perform dose preparation and scanning procedures with supervision.

C. Perform intravenous injections with supervision.

D. Review all departmental policies and procedures.

6. WEEK SIX

A. Perform generator elution and all radiation safety procedures with supervision.

B. Perform dose preparations and scanning procedures with supervision.

C. Perform intravenous injections with supervision.

D. Perform dose calibrator linearity check with supervision.

7. WEEK SEVEN

A. Perform generator elution and all radiation safety procedures with supervision.

B. Perform dose preparations and scanning procedures with supervision.

C. Perform intravenous injections with supervision.

D. Perform dose calibrator linearity check with supervision.

E. Inservice from Radiation Health Physicist to include all aspects of Radiation Safety, ALARA and all safety and QA procedures A-J.

8. WEEK EIGHT

The student must be able to independently perform the following procedures to the satisfaction of the Radiation Safety Officer and must be able to identify action levels and appropriate responses.

A. Generator Elution.
B. Molybdenum Breakthrough check.
C. Dose calibrator constancy check.
D. Daily Area Survey.
E. Weekly room survey.
F. Dose calibrator linearity check.
G. Dose assay and preparation.
H. Intravenous dose administration.
I. Scanning procedure.
J. Disposal & storage techniques.

The student must be able to demonstrate radiation safety practices in conjunction with the ALARA concept.

a. Wears body badges and ring badge.
b. Wears rubber gloves when handling radionuclides.
c. Does not eat or drink in Lab.
d. Time and distance techniques.
e. Appropriate handling of infectious material.

If the student can perform the above procedures to the satisfaction of the Radiation Safety Office he can then work independently in the Nuclear Lab. The Radiation Safety Officer will verify his acknowledgement of acceptable performance by completing and signing the training checklist. At this time the students name will be added to the list of qualified individuals in the procedure manual and to the list to approve intravenous injections.

If the student fails to perform any procedure to the satisfaction of the Radiation Safety Officer, he must then receive additional training in those areas deemed necessary by the Radiation Safety Officer. Once these procedures have been completed and performed to the satisfaction of the Radiation Safety Officer the student may then work in the Nuclear Lab independently.

Approved Laurence Jackowski

Distributed
D:TROFONM
TXTNUMED

TRAINING SYNOPSIS

November 1990

WEST SHORE HOSPITAL

NUCLEAR MEDICINE

LAB

1. WEEK ONE (Must have Ring Badge)

   A. Review Generator Elutian
   B. Review MO99 Breakthrough Check
   C. Review Dose Calibrator Constancy Check
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   E. Review Weekly Area Survey Check
   F. Review Package Receipt
   G. Review "Wet Generator" Procedure
   H. Review Disposal and storage
   I. Review Return of Generators
   J. Review ALARA Concept and Safety Rules

2. WEEK TWO

   A. Generator Elutian with supervision.
   B. Perform MO99 Breakthrough Check with supervision.
   C. Perform Dose Calibrator constancy check with supervision.
   D. Perform Daily Area Survey with supervision.
   E. Perform Weekly Area Survey with supervision.
   F. Review Package receipt procedure.
   G. Review "Wet Generator" procedure.
   H. Review disposal and storage procedures and practice same.
   I. Review and practice return of Generator.
   J. Review ALARA concept.

3. WEEK THREE

   A. Practice the above procedures A-J with supervision.

   B. Learn dose preparations and scanning procedures.

4. WEEK FOUR

   A. Practice the above A-J radiation safety procedures with suspervision.

   B. Perform dose preparation and scanning procedures with supervision.

   C. Inservice on intravenous injections by nursing inservice education coordinator. (To include infection control procedures).

5. WEEK FIVE

A. Practice the above A-J radiation safety procedures with supervision.

B. Perform dose preparation and scanning procedures with supervision.

C. Perform intravenous injections with supervision.

D. Review all departmental policies and procedures.

6. WEEK SIX

A. Perform generator elution and all radiation safety procedures with supervision.

B. Perform dose preparations and scanning procedures with supervision.

C. Perform intravenous injections with supervision.

D. Perform dose calibrator linearity check with supervision.

7. WEEK SEVEN

A. Perform generator elution and all radiation safety procedures with supervision.

B. Perform dose preparations and scanning procedures with supervision.

C. Perform intravenous injections with supervision.

D. Perform dose calibrator linearity check with supervision.

E. Inservice from Radiation Health Physicist to include all aspects of Radiation Safety, ALARA and all safety and QA procedures A-J.

8. WEEK EIGHT

The student must be able to independently perform the following procedures to the satisfaction of the Radiation Safety Officer and must be able to identify action levels and appropriate responses.

A. Generator Elution.
B. Molybdenum Breakthrough check.
C. Dose calibrator constancy check.
D. Daily Area Survey.
E. Weekly room survey.
F. Dose calibrator linearity check.
G. Dose assay and preparation.
H. Intravenous dose administration.
I. Scanning procedure.
J. Disposal & storage techniques.

The student must be able to demonstrate radiation safety practices in conjunction with the ALARA concept.

a. Wears body badges and ring badge.
b. Wears rubber gloves when handling radionuclides.
c. Does not eat or drink in Lab.
d. Time and distance techniques.
e. Appropriate handling of infectious material.

If the student can perform the above procedures to the satisfaction of the Radiation Safety Office he can then work independently in the Nuclear Lab. The Radiation Safety Officer will verify his acknowledgement of acceptable performance by completing and signing the training checklist. At this time the students name will be added to the list of qualified individuals in the procedure manual and to the list to approve intravenous injections.

If the student fails to perform any procedure to the satisfaction of the Radiation Safety Officer, he must then receive additional training in those areas deemed necessary by the Radiation Safety Officer. Once these procedures have been completed and performed to the satisfaction of the Radiation Safety Officer the student may then work in the Nuclear Lab independently.

Approved Laurence Jackowski

Distributed
D:TROFONM
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NUCLEAR MEDICINE LAB

STUDENTS NAME _____ _____

DATE _____

The above named student has successfully performed the following procedures to my satisfaction, and has demonstrated a level of competency that I deem as necessary to independently work in the Nuclear Medicine Lab.

PROCEDURE	Check indicates satisfactory performance
1. Generator Elutions	_____
2. MO99 Breakthrough Test	_____
3. Dose Calibrator Constancy Checks	_____
4. Daily Area Surveys	_____
5. Weekly Area Surveys	_____
6. Package receipt procedure	_____
7. "Wet Generator" procedure	_____
8. Disposal & storage procedure	_____
9. Returning Generator Porcedures	_____
10. Intravencus injections	_____
11. Dose Assay & preparation	_____
12. Dose Calibrator linearity checks	_____
13. Understands ALARA concept & radiation safety procedures	_____
14. Scanning procedures	_____

_____, RSO

Approved Laurence J. DeLoach

D:TROFONM
TXTNUMED

October 1990

WEST SHORE HOSPITAL

NUCLEAR MEDICINE

TITLE: Authorization to work in the Nuclear Medicine Lab.

POLICY: To document technicians with delegated authority to work in the Nuclear Medicine Lab.

PROCEDURE: The below listed technologists at West Shore Hospital have received proper training in standard procedures, Quality Assurance procedures, and Radiation Safety procedures, and are deemed capable to work independently in the Nuclear Medicine Lab.

Randall Payne RT

Lawrence Foster RT/RDMS

James Brand RT/RDMS

Approved _____

L. A. Jackowski, D.O.
Radiologist, Radiation Safety Officer

D:ATHWNMD
TXTNUMED

OAU : Radiology/Nuclear Medicine/Ultrasound
CALENDAR YEAR : 1990-1591

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.)	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
STATISTICS														
Radiology														
No. of procedures		1371	1314	1563	1427	1391	1526	1426						
Total														
IN		257	267	354	248	270	330	1232						
OUT		1114	1049	1209	1179	1121	239	1187						
Nuclear Medicine														
No. of procedures		41	25	24	33	34	39	29						
Total														
IN		12	7	10	13	7	12	8						
OUT		29	15	14	20	27	27	21						
Ultrasound														
No. of procedures		88	127	97	107	97	118	74						
Total														
IN		18	48	27	24	31	33	27						
OUT		70	79	70	83	66	85	47						
Total no. worked hrs.														
QUALITY ASSESSMENT														
1) Endoscopic diag. different than radiologic intren.) a) Upper GI vs Gastroscopy (Jun., Sep., Dec., Mar.)	95%													

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.)	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
QA cont. 2) Endoscopic diag. different than radiologic intrep. b) BE vs Sigmoid or Colonoscopy (Jul..Oct..Jan.,Mar)	95%													
3) Timeliness of report (monthly)	100%	NA	I	I	I	I	95%							
4) Diagnostic orders accompany all patients (monthly)	100%	NA	60%	65%	75%	75%	75%							
QA - Nuclear Med. 1) Differences between nuclear medicine and path diagnosis (Aug., Nov., Feb., May)	95%													
QA - Ultrasound 1) Differences between ultrasound and surgical findings (Sep., Dec., Mar., Jan.)	95%													

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.)	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
RISK MANAGEMENT														
1) Incidents (monthly)	0	0	0	0	0	3	0							
2) Concerns/Opp. (monthly)		0	0	0	0	0	0							
3) Claims (monthly)	0	0	0	0	0	0	0							
4) Survey Written (monthly)	95%	0	0	0	0	0	0							
5) Emp. Incidents (monthly)		0	0	0	0	0	0							
QUALITY CONTROL														
Radiology:														
1) Film repeats (monthly)	5%	3.9%	3.3%	4%	4.25%	2.7%	4.3%	3.4%						
2) Processor Clean/main. (monthly)	90%	100%	100%	100%	100%	100%	100%							
Nuclear Medicine														
1) Nuc. Med. Rad. Safety Procedure Check list														
Rm.Area Surv.														
Flood Study														
TLD Ring Badge														
Syringe shld.														
Mo. Break thr.														
Dose calibrator const. check (monthly rpt)	100%	NA	NA	NA	NA	NA	100%	100%						

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Nuc. Med. cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
3) Linearity Tests (Apr,Jul,Oct,Jan)	100%			X			X							
2) Swipe Tests (monthly rpt.)	100% Wkly						100%							
MANAGEMENT FUNCTIONS														
1) Rev. Policies (Jan)		NA	NA	NA	NA	NA	NA	NA						
2) Rev. ER Plans (Sep.)		NA	NA	NA	NA	I	NA	NA						
3) Rev. Infection Control Plan (Oct.)		NA	NA	NA	NA	NA	I	NA						
4) Rev. Safety Plan (Nov.)		NA	NA	NA	NA	NA	NA	I						
5) Rev. Universal Precautions (Oct.)		NA	NA	NA	NA	NA	I	NA						
6) Rev. QA Plan (March)		NA	NA	NA	NA	NA	NA	NA						
7) Licensure (Aug., Feb.)		NA	NA	X	NA	NA	NA	NA						

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Management cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
8) Dept. Meetings (monthly)		X	X	X	X	X	X	X						
9) Prd. Safety Meetings (Jan,Apr,Jul,Sep)				X		X			X					
Required attend.									X					
Administration									X					
RSO									X					
Nursing									X					
Radiology Mgr.									X					
9) Rev. Organ. chart (Jan.)		NA	NA	NA	NA	NA	NA	NA	NA					
10) Preventive maintenance Processor (monthly)		X	X	X	X	X	X	X						
Rad. Units (Nov.)		NA	NA	NA	NA	NA	NA	I						
11) Rev. Hazardous material (Oct)		NA	NA	NA	NA	NA	NA	I						
12) Rev. Job Descp. (Jan.)		NA	NA	NA	NA	NA	NA	NA						
13) Evaluations														
May - 1		1												
Aug - 1														
Sep - 1														
Oct - 1							1							
Dec - 1														
Feb - 1														
Apr - 2														

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Management cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
14) Orientation (as needed)		NA	X	NA	NA	NA	IN PROCES	NA						
15) Orientation check list for Nuclear Medicine Assoc. (as needed)	ALL NEW ASSOC.						NA	NA						
16) Verification of Nuclear Med. Tech. competency (annual)							X							
17) Film badge report complete (monthly)	100%	X	X	X	X	X	X							
15) Inservice (as needed)		NA	NA	NA	NA	NA								
16) Agency compliance (as required)		NA	NA	NA	NA	NA								
17) Turnover rate (as needed)		NA	NA	NA	NA	1								
18) Exit interviews (as needed)		NA	NA	NA	NA	0								
19) Budget Variance Report (monthly)														

OAU : Radiology/Nuclear Medicine/Ultrasound
CALENDAR YEAR : 1990-1991

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.)	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
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4) Diagnostic orders accompany all patients (monthly)	100%	NA	60%	65%	75%	75%	75%							
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RISK MANAGEMENT														
1) Incidents (monthly)	0	0	0	0	0	3	0							
2) Concerns/Opp. (monthly)		0	0	0	0	0	0							
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5) Emp. Incidents (monthly)		0	0	0	0	0	0							
QUALITY CONTROL														
Radiology:														
1) Film repeats (monthly)	5%	3.9%	3.3%	4%	4.25%	2.7%	4.3%	3.4%						
2) Processor Clean/main. (monthly)	90%	100%	100%	100%	100%	100%	100%							
Nuclear Medicine														
1) Nuc. Med. Rad. Safety Procedure Check list														
Rm.Area Surv.														
Flood Study														
TLD Ring Badge														
Syringe shld.														
Mo. Break thr.														
Dose calibrator const. check (monthly rpt)	100%	NA	NA	NA	NA	NA	100%	100%						

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Nuc. Med. cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AUG
3) Linearity Tests (Apr,Jul,Oct,Jan)	100%			X			X							
2) Swipe Tests (monthly rpt.)	100% Wklv						100%							
MANAGEMENT FUNCTIONS														
1) Rev. Policies (Jan)		NA	NA	NA	NA	NA	NA	NA						
2) Rev. ER Plans (Sep.)		NA	NA	NA	NA	I	NA	NA						
3) Rev. Infection Control Plan (Oct.)		NA	NA	NA	NA	NA	I	NA						
4) Rev. Safety Plan (Nov.)		NA	NA	NA	NA	NA	NA	I						
5) Rev. Universal Precautions (Oct.)		NA	NA	NA	NA	NA	I	NA						
6) Rev. QA Plan (March)		NA	NA	NA	NA	NA	NA	NA						
7) Licensure (Aug., Feb.)		NA	NA	X	NA	NA	NA	NA						

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Management cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
8) Dept. Meetings (monthly)		X	X	X	X	X	X	X						
9) Rad. Safety Meetings (Jan,Apr,Jul,Sep)				X		X			X					
Required attend.														
Administration									X					
RSO									X					
Nursing									X					
Radiology Mgr.									X					
9) Rev. Organ. chart (Jan.)		NA	NA	NA	NA	NA	NA	NA	NA					
10) Preventive maintenance Processor (monthly)		X	X	X	X	X	X	X						
Rad. Units (Nov.)		NA	NA	NA	NA	NA	NA	I						
11) Rev. Hazardous material (Oct)		NA	NA	NA	NA	NA	NA	I						
12) Rev. Job Descp. (Jan.)		NA	NA	NA	NA	NA	NA	NA						
13) Evaluations														
May - 1		1												
Aug - 1														
Sep - 1														
Oct - 1							1							
Dec - 1														
Feb - 1														
Apr - 2														

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Management cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
14) Orientation (as needed)		NA	X	NA	NA	NA	IN PROCES	NA						
15) Orientation check list for Nuclear Medicine Assoc. (as needed)	ALL NEW ASSOC.						NA	NA						
16) Verification of Nuclear Med. Tech. competency (annual)							X							
17) Film badge report complete (monthly)	100%	X	X	X	X	X	X							
15) Inservice (as needed)		NA	NA	NA	NA	NA								
16) Agency compliance (as required)		NA	NA	NA	NA	NA								
17) Turnover rate (as needed)		NA	NA	NA	NA	1								
18) Exit interviews (as needed)		NA	NA	NA	NA	0								
19) Budget Variance Report (monthly)														

QAU : Radiology/Nuclear Medicine/Ultrasound
CALENDAR YEAR : 1990-1991

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.)	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
STATISTICS														
Radiology														
No. of procedures		1371	1314	1563	1427	1391	1526	1426						
Total														
IN		257	267	354	248	270	330	1232						
OUT		1114	1049	1209	1179	1121	239	1187						
Nuclear Medicine														
No. of procedures		41	23	24	33	34	39	29						
Total														
IN		12	7	10	13	7	12	8						
OUT		29	15	14	20	27	27	21						
Ultrasound														
No. of procedures		88	127	97	107	97	118	74						
Total														
IN		18	48	27	24	31	33	27						
OUT		70	79	70	83	66	85	47						
Total no. worked hrs.														
QUALITY ASSESSMENT														
1) Endoscopic diag. different than radiologic intrep. a) Upper GI vs Gastroscop (Jun., Sep., Dec., Mar.)	95%													

STATISTICS/INDICA[illegible]
(Title/Def[illegible]sion
Months [illegible]ev./Rep.)

	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
[illegible]. cont.														
2) Endoscopic diag. different than radiologic intrep. b) BE vs Sigmoid or Colonoscopy (Jul.,Oct.,Jan.,Mar)	95%													
3) Timeliness of report (monthly)	100%	NA	I	I	I	I	95%							
4) Diagnostic orders accompany all patients (monthly)	100%	NA	60%	65%	75%	75%	75%							
QA - Nuclear Med. 1) Differences between nuclear medicine and path diagnosis (Aug., Nov., Feb., May)	95%													
QA - Ultrasound 1) Differences between ultrasound and surgical findings (Sep., Dec., Mar., Jan.)	95%													

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.)	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
RISK MANAGEMENT														
1) Incidents (monthly)	0	0	0	0	0	3	0							
2) Concerns/Opp. (monthly)		0	0	0	0	0	0							
3) Claims (monthly)	0	0	0	0	0	0	0							
4) Survey Written (monthly)	95%	0	0	0	0	0	0							
5) Emp. Incidents (monthly)		0	0	0	0	0	0							
QUALITY CONTROL														
Radiology:														
1) Film repeats (monthly)	5%	3.9%	3.3%	4%	4.25%	2.7%	4.3%	3.4%						
2) Processor Clean/main. (monthly)	90%	100%	100%	100%	100%	100%	100%							
Nuclear Medicine														
1) Nuc. Med. Rad. Safety Procedure Check list														
Rm.Area Surv.														
Flood Study														
TLD Ring Badge														
Syringe shld.														
Mo. Break thr.														
Dose calibrator const. check (monthly rpt)	100%	NA	NA	NA	NA	NA	100%	100%						

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Nuc. Med. cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
3) Linearity Tests (Apr,Jul,Oct,Jan)	100%			X			X							
2) Swipe Tests (monthly rpt.)	100% Wkly						100%							
MANAGEMENT FUNCTIONS														
1) Rev. Policies (Jan)		NA	NA	NA	NA	NA	NA	NA						
2) Rev. ER Plans (Sep.)		NA	NA	NA	NA	I	NA	NA						
3) Rev. Infection Control Plan (Oct.)		NA	NA	NA	NA	NA	I	NA						
4) Rev. Safety Plan (Nov.)		NA	NA	NA	NA	NA	NA	I						
5) Rev. Universal Precautions (Oct.)		NA	NA	NA	NA	NA	I	NA						
6) Rev. QA Plan (March)		NA	NA	NA	NA	NA	NA	NA						
7) Licensure (Aug., Feb.)		NA	NA	X	NA	NA	NA	NA						

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Management cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
8) Dept. Meetings (monthly)		X	X	X	X	X	X	X						
9) Rad. Safety Meetings (Jan,Apr,Jul,Sep)				X		X			X					
Required attend.														
Administration									X					
RSO									X					
Nursing									X					
Radiology Mgr.									X					
9) Rev. Organ. chart (Jan.)		NA	NA	NA	NA	NA	NA	NA	NA					
10) Preventive maintenance Processor (monthly)		X	X	X	X	X	X	X						
Rad. Units (Nov.)		NA	NA	NA	NA	NA	NA	I						
11) Rev. Hazardous material (Oct)		NA	NA	NA	NA	NA	NA	I						
12) Rev. Job Descp. (Jan.)		NA	NA	NA	NA	NA	NA	NA						
13) Evaluations														
May - 1		1												
Aug - 1														
Sep - 1														
Oct - 1							1							
Dec - 1														
Feb - 1														
Apr - 2														

STATISTICS/INDICATORS
(Title/Definition
Months Rev./Rep.)

Management cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
14) Orientation (as needed)		NA	X	NA	NA	NA	IN PROCES	NA						
15) Orientation check list for Nuclear Medicine Assoc. (as needed)	ALL NEW ASSOC.						NA	NA						
16) Verification of Nuclear Med. Tech. competency (annual)							X							
17) Film badge report complete (monthly)	100%	X	X	X	X	X	X							
15) Inservice (as needed)		NA	NA	NA	NA	NA								
16) Agency compliance (as required)		NA	NA	NA	NA	NA								
17) Turnover rate (as needed)		NA	NA	NA	NA	1								
18) Exit interviews (as needed)		NA	NA	NA	NA	0								
19) Budget Variance Report (monthly)														

GAU : Radiology/Nuclear Medicine/Ultrasound
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STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.)	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
STATISTICS														
Radiology														
No. of procedures		1371	1314	1563	1427	1391	1526	1426						
Total														
IN		257	267	354	[illegible]49	270	330	1232						
OUT		1114	1049	1209	1179	1121	239	1187						
Nuclear Medicine														
No. of procedures		41	23	24	33	34	39	29						
Total														
IN		12	[illegible]	10	13	7	12	8						
OUT		29	15	14	20	27	27	21						
Ultrasound														
No. of procedures		88	127	97	107	97	118	74						
Total														
IN		18	48	27	[illegible]4	31	33	27						
OUT		70	79	[illegible]	83	66	8[illegible]	47						
Total no. worked hrs														
QUALITY ASSESSMENT														
1) Endoscopic diag. different than radiologic intrep.														
a) Upper GI vs Gastroscopy (Jun., Sep., Dec., Mar.)	95%													

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.)	STD'[illegible]	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
QA cont.														
2) Endoscopic diag. different than radiologic intrep. b) BE vs Sigmoid or Colonoscopy (Jul.,Oct.,Jan.,Mar)	95%													
3) Timeliness of report (monthly)	100%	NA	I	I	I	I	95%							
4) Diagnostic orders accompany all patients (monthly)	100%	NA	60%	65%	75%	75%	75%							
QA - Nuclear Med.														
1) Differences between nuclear medicine and path diagnosis (Aug., Nov., Feb., May)	95%													
QA - Ultrasound														
1) Differences between ultrasound and surgical findings (Sep., Dec., Mar., Jan.)	95%													

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.)	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
RISK MANAGEMENT														
1) Incidents (monthly)	0	0	0	0	0	3	0							
2) Concerns/Opp. (monthly)		0	0	0	0	0	0							
3) Claims (monthly)	0	0	0	0	0	0	0							
4) Survey Written (monthly)	95%	0	0	0	0	0	0							
5) Emp. Incidents (monthly)		0	0	0	0	0	0							
QUALITY CONTROL														
Radiology:														
1) Film repeats (monthly)	5%	3.9%	3.3%	4%	4.25%	2.7%	4.3%	3.4%						
2) Processor Clean/main. (monthly)	90%	100%	100%	100%	100%	100%	100%							
Nuclear Medicine														
1) Nuc. Med. Rad. Safety Procedure Check list														
Rm.Area Surv.														
Flood Study														
TLD Ring Badge														
Syringe shld.														
Mo. Break thr.														
Dose calibrator const. check (monthly rpt)	100%	NA	NA	NA	NA	NA	100%	100%						

STATISTICS/INDICATORS (Title/Definition Months Rev./Req.) Nuc. Med. cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AUG
3) Linearity Tests (Apr,Jul,Oct,Jan)	100%			X			X							
2) Swipe Tests (monthly rpt.)	100% Wkly						100%							
MANAGEMENT FUNCTIONS														
1) Rev. Policies (Jan)		NA	NA	NA	NA	NA	NA	NA						
2) Rev. ER Plans (Sep.)		NA	NA	NA	NA	I	NA	NA						
3) Rev. Infection Control Plan (Oct.)		NA	NA	NA	NA	NA	I	NA						
4) Rev. Safety Plan (Nov.)		NA	NA	NA	NA	NA	NA	I						
5) Rev. Universal Precautions (Oct.)		NA	NA	NA	NA	NA	I	NA						
6) Rev. QA Plan (March)		NA	NA	NA	NA	NA	NA	NA						
7) Licensure (Aug., Feb.)		NA	NA	X	NA	NA	NA	NA						

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Management cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
8) Dept. Meetings (monthly)		X	X	X	X	X	X	X						
9) Rad. Safety Meetings (Jan,Apr,Jul,Sep)				X		X			X					
Required attend.														
Administration									X					
RSO									X					
Nursing									X					
Radiology Mgr.									X					
9) Rev. Organ. chart (Jan.)		NA	NA	NA	NA	NA	NA	NA	NA					
10) Preventive maintenance Processor (monthly)		X	X	X	X	X	X	X						
Rad. Units (Nov.)		NA	NA	NA	NA	NA	NA	I						
11) Rev. Hazardous material (Oct)		NA	NA	NA	NA	NA	NA	I						
12) Rev. Job Descp. (Jan.)		NA	NA	NA	NA	NA	NA	NA						
13) Evaluations														
May - 1		1												
Aug - 1														
Sep - 1														
Oct - 1							1							
Dec - 1														
Feb - 1														
Apr - 2														

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Management cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
14) Orientation (as needed)		NA	X	NA	NA	NA	IN PROCESS	NA						
15) Orientation check list for Nuclear Medicine Assoc. (as needed)	ALL NEW ASSOC.						NA	NA						
16) Verification of Nuclear Med. Tech. competency (annual)							X							
17) Film badge report complete (monthly)	100%	X	X	X	X	X	X							
1[illegible] [illegible]servi e [illegible]as needed		NA	NA	NA	NA	NA								
16) Agency compliance (as required)		NA	NA	NA	NA	NA								
17) Turnover rate (as needed)		NA	NA	NA	NA	1								
18) Exit interviews (as needed)		NA	NA	NA	NA	0								
19) Budget Variance Report (monthly)														

QAU : Radiology/Nuclear Medicine/Ultrasound
CALENDAR YEAR : 1990-1991

STATISTICS/INDICATORS (Title/Definition Months Rev./Req.)	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
STATISTICS														
Radiology														
No. of procedures		1371	1314	1563	1427	1391	1526	1423						
Total														
IN		257	267	354	248	270	330	1232						
OUT		1114	949	1209	1179	1121	239	1187						
Nuclear Medicine														
No. of procedures		41	23	24	33	34	39	29						
Total														
IN		12	7	10	13	7	12	8						
OUT		29	15	14	20	27	27	21						
Ultrasound														
No. of procedures		88	127	97	107	97	118	74						
Total														
IN		18	48	27	24	31	33	27						
OUT		70	79	70	83	66	85	47						
Total no. worked hrs.														
QUALITY ASSESSMENT														
1) Endoscopic diag. different than radiologic intrep. a) Upper GI vs Gastroscopy (Jun., Sep., Dec., Mar.)	95%													

STATISTICS, INDICATORS (Title/Definition Months Rev. Rep.)	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
QA cont.														
2) Endoscopic diag. different than radiologic intrep.														
b) BE vs Sigmoid or Colonoscopy (Jul.,Oct.,Jan.,Mar)	95%													
3) Timeliness of recort (monthly)	100%	NA	I	I	I	I								
4) Diagnostic orders accompany all patients (monthly)	100%	NA	60%	65%	75%	75%	75%							
QA - Nuclear Med.														
1) Differences between nuclear medicine and path diagnosis (Aug., Nov., Feb., May)	95%													
QA - Ultrasound														
1) Differences between ultrasound and surgical findings (Sep., Dec., Mar., Jan.)	95%													

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.)	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
RISK MANAGEMENT														
1) Incidents (monthly)	0	0	0	0	0	3	0							
2) Concerns/Opp. (monthly)		0	0	0	0	0	0							
3) Claims (monthly)	0	0	0	0	0	0	0							
4) Survey Written (monthly)	95%	0	0	0	0	0	0							
5) Emp. Incidents (monthly)		0	0	0	0	0	0							
QUALITY CONTROL														
Radiology:														
1) Film repeats (monthly)	5%	3.9%	3.3%	4%	4.25%	2.7%	4.3%	3.4%						
2) Processor Clean/main. (monthly)	90%	100%	100%	100%	100%	100%	100%							
Nuclear Medicine														
1) Nuc. Med. Rad. Safety Procedure Check list														
Rm.Area Surv.														
Flood Study														
TLD Ring Badge														
Syringe shld.														
Mo. Break thr.														
Dose calibrator const. check (monthly rpt)	100%	NA	NA	NA	NA	NA	100%	100%						

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Nuc. Med. cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AUG
3) Linearity Tests (Apr,Jul,Oct,Jan)	100%			X			X							
2) Swipe Tests (monthly rpt.)	100% Wklv						100%							
MANAGEMENT FUNCTIONS														
1) Rev. Policies (Jan)		NA	NA	NA	NA	NA	NA	NA						
2) Rev. ER Plans (Sep.)		NA	NA	NA	NA	I	NA	NA						
3) Rev. Infection Control Plan (Oct.)		NA	NA	NA	NA	NA	I	NA						
4) Rev. Safety Plan (Nov.)		NA	NA	NA	NA	NA	NA	I						
5) Rev. Universal Precautions (Oct.)		NA	NA	NA	NA	NA	I	NA						
6) Rev. QA Plan (March)		NA	NA	NA	NA	NA	NA	NA						
7) Licensure (Aug., Feb.)		NA	NA	X	NA	NA	NA	NA						

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Management cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
8) Dept. Meetings (monthly)		X	X	X	X	X	X	X						
9) Rad. Safety Meetings (Jan.Apr,Jul,Sep)				X		X			X					
Required attend.														
Administration									X					
RSO									X					
Nursing									X					
Radiology Mgr.									X					
9) Rev. Organ. chart (Jan.)		NA	NA	NA	NA	NA	NA	NA	NA					
10) Preventive maintenance Processor (monthly)		X	X	X	X	X	X	X						
Rad. Units (Nov.)		NA	NA	NA	NA	NA	NA	I						
11) Rev. Hazardous material (Oct)		NA	NA	NA	NA	NA	NA	I						
12) Rev. Job Descp. (Jan.)		NA	NA	NA	NA	NA	NA	NA						
13) Evaluations														
May - 1		1												
Aug - 1														
Sep - 1														
Oct - 1							1							
Dec - 1														
Feb - 1														
Apr - 2														

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Management cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
14) Orientation (as needed)		NA	X	NA	NA	NA	IN PROCES	NA						
15) Orientation check list for Nuclear Medicine Assoc. (as needed)	ALL NEW ASSOC.						NA	NA						
16) Verification of Nuclear Med. Tech. competency (annual)							X							
17) Film badge report complete (monthly)	100%	X	X	X	X	X	X							
15) Inservice (as needed)		NA	NA	NA	NA	NA								
16) Agency compliance (as required)		NA	NA	NA	NA	NA								
17) Turnover rate (as needed)		NA	NA	NA	NA	1								
18) Exit interviews (as needed)		NA	NA	NA	NA	0								
19) Budget Variance Report (monthly)														

QAU : Radiology/Nuclear Medicine/Ultrasound
CALENDAR YEAR : 1990-1991

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.)	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
STATISTICS														
Radiology														
No. of procedures		1371	1314	1563	1427	1391	1526	1426						
Total														
IN		257	267	354	248	270	33	1232						
OUT		1114	1049	1209	1179	1121	239	1187						
Nuclear Medicine														
No. of procedures		41	23	24	33	34	39	29						
Total														
IN		12	7	10	13	7	12	8						
OUT		29	15	14	20	27	27	21						
Ultrasound														
No. of procedures		88	127	97	107	97	118	74						
Total														
IN		18	48	27	24	31	33	27						
OUT		70	79	70	83	66	85	47						
Total no. worked hrs.														
QUALITY ASSESSMENT														
1) Endoscopic diag. different than radiologic intrep. a) Upper GI vs Gastroscopy (Jun., Sep., Dec., Mar.)	95%													

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.)	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
QA cont.														
2) Endoscopic diag. different than radiologic intrep. b) BE vs Sigmoid or Colonoscopy (Jul.,Oct.,Jan.,Mar)	95%													
3) Timeliness of report (monthly)	100%	NA	I	I	I	I	95%							
4) Diagnostic orders accompany all patients (monthly)	100%	NA	60%	65%	75%	75%	75%							
QA - Nuclear Med.														
1) Differences between nuclear medicine and path diagnosis (Aug., Nov., Feb., May)	95%													
QA - Ultrasound														
1) Differences between ultrasound and surgical findings (Sep., Dec., Mar., Jan.)	95%													

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.)	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
RISK MANAGEMENT														
1) Incidents (monthly)	0	0	0	0	0	3	0							
2) Concerns/Opp. (monthly)		0	0	0	0	0	0							
3) Claims (monthly)	0	0	0	0	0	0	0							
4) Survey Written (monthly)	95%	0	0	0	0	0	0							
5) Emp. Incidents (monthly)		0	0	0	0	0	0							
QUALITY CONTROL														
Radiology:														
1) Film repeats (monthly)	5%	3.9%	3.3%	4%	4.25%	2.7%	4.3%	3.4%						
2) Processor Clean/main. (monthly)	90%	100%	100%	100%	100%	100%	100%							
Nuclear Medicine														
1) Nuc. Med. Gd. Safety Procedure Check list														
Rm.Area Surv.														
Flood Study														
TLD Ring Badge														
Syringe shld.														
Mo. Break thr.														
Dose calibrator const. check (monthly rpt)	100%	NA	NA	NA	NA	NA	100%	100%						

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Nuc. Med. cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AUG
3) Linearity Tests (Apr,Jul,Oct,Jan)	100%			X			X							
2) Swipe Tests (monthly rpt.)	100% Wklv						100%							
MANAGEMENT FUNCTIONS														
1) Rev. Policies (Jan)		NA	NA	NA	NA	NA	NA	NA						
2) Rev. ER Plans (Sep.)		NA	NA	NA	NA	I	NA	NA						
3) Rev. Infection Control Plan (Oct.)		NA	NA	NA	NA	NA	I	NA						
4) Rev. Safety Plan (Nov.)		NA	NA	NA	NA	NA	NA	I						
5) Rev. Universal Precautions (Oct.)		NA	NA	NA	NA	NA	I	NA						
6) Rev. QA Plan (March)		NA	NA	NA	NA	NA	NA	NA						
7) Licensure (Aug., Feb.)		NA	NA	X	NA	NA	NA	NA						

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Management cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
8) Dept. Meetings (monthly)		X	X	X	X	X	X	X						
9) Rad. Safety Meetings (Jan,Apr,Jul,Sep)				X		X			X					
Required attend.														
Administration									X					
RSO									X					
Nursing									X					
Radiology Mgr.									X					
9) Rev. Organ. chart (Jan.)		NA	NA	NA	NA	NA	NA	NA	NA					
10) Preventive maintenance Processor (monthly)		X	X	X	X	X	X	X						
Rad. Units (Nov.)		NA	NA	NA	NA	NA	NA	I						
11) Rev. Hazardous material (Oct)		NA	NA	NA	NA	NA	NA	I						
12) Rev. Job Descp. (Jan.)		NA	NA	NA	NA	NA	NA	NA						
13) Evaluations														
May - 1		1												
Aug - 1														
Sep - 1														
Oct - 1							1							
Dec - 1														
Feb - 1														
Apr - 2														

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Management cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
14) Orientation (as needed)		NA	X	NA	NA	NA	IN PROCES	NA						
15) Orientation check list for Nuclear Medicine Assoc. (as needed)	ALL NEW ASSOC.						NA	NA						
16) Verification of Nuclear Med. Tech. competency (annual)							X							
17) Film badge report complete (monthly)	100%	X	X	X	X	X	X							
15) Inservice (as needed)		NA	NA	NA	NA	NA								
16) Agency compliance (as required)		NA	NA	NA	NA	NA								
17) Turnover rate (as needed)		NA	NA	NA	NA	1								
18) Exit interviews (as needed)		NA	NA	NA	NA	0								
19) Budget Variance Report (monthly)														

UAU : Radiology/Nuclear Medicine/Ultrasound
CALENDAR YEAR : 1990-1991

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.)	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
STATISTICS														
Radiology														
No. of procedures		1371	1314	1563	1427	1391	1526	1426						
Total														
IN		257	267	354	248	270	330	1232						
OUT		1114	1049	1209	1179	1121	239	1187						
Nuclear Medicine														
No. of procedures		41	23	24	33	34	39	29						
Total														
IN		12	7	10	13	7	12	8						
OUT		29	15	14	20	27	27	21						
Ultrasound														
No. of procedures		88	127	97	107	97	118	74						
Total														
IN		18	48	27	24	31	33	27						
OUT		70	79	70	83	66	85	47						
Total no. worked hrs.														
QUALITY ASSESSMENT														
1) Endoscopic diag. different than radiologic intrep. a) Upper GI vs Gastroscopy (Jun., Sep., Dec., Mar.)	95%													

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.)	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
QA cont.														
2) Endoscopic diag. different than radiologic intrep. b) BE vs Sigmoid or Colonoscopy (Jul..Oct...n.,Mar)	95%													
3) Timeliness of report (monthly)	100%		I	I	I	I	95%							
4) Diagnostic orders accompany all patients (monthly)	100%	NA	60%	65%	75%	75%	75%							
QA - Nuclear Med. 1) Differences between nuclear medicine and path diagnosis (Aug., Nov., Feb., May)	95%													
QA - Ultrasound 1) Differences between ultrasound and surgical findings (Sep., Dec., Mar., Jan.)	95%													

STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.)	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
RISK MANAGEMENT														
1) Incidents (monthly)	0	0	0	0	0	3	0							
2) Concerns/Opp. (monthly)		0	0	0	0	0	0							
3) Claims (monthly)	0	0	0	0	0	0	0							
4) Survey Written (monthly)	95%	0	0	0	0	0	0							
5) Emp. Incidents (monthly)		0	0	0	0	0	0							
QUALITY CONTROL														
Radiology:														
1) Film repeats (monthly)	5%	3.9%	3.3%	4%	4.25%	2.7%	4.3%	3.4%						
2) Processor Clean/main. (monthly)	90%	100%	100%	100%	100%	100%	100%							
Nuclear Medicine														
1) Nuc. Med. Rad. Safety Procedure Check list														
Rm.Area Surv.														
Flood Study														
TLD Ring Badge														
Syringe shld.														
Mo. Break thr.														
Dose calibrator const. check (monthly rpt)	100%	NA	NA	NA	NA	NA	100%	100%						

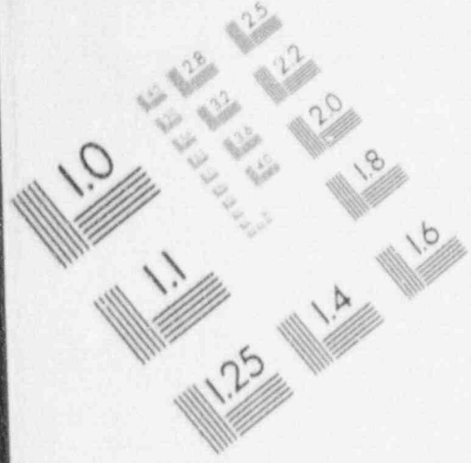
STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Nuc. Med. cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
3) Linearity Tests (Apr,Jul,Oct,Jan)	100%			X			X							
2) Swipe Tests (monthly rpt.)	100% Wkly						100%							
MANAGEMENT FUNCTIONS														
1) Rev. Policies (Jan)		NA	NA	NA	NA	NA	NA	NA						
2) Rev. ER Plans (Sep.)		NA	NA	NA	NA	I	NA	NA						
3) Rev. Infection Control Plan (Oct.)		NA	NA	NA	NA	NA	I	NA						
4) Rev. Safety Plan (Nov.)		NA	NA	NA	NA	NA	NA	I						
5) Rev. Universal Precautions (Oct.)		NA	NA	NA	NA	NA	I	NA						
6) Rev. QA Plan (March)		NA	NA	NA	NA	NA	NA	NA						
7) Licensure (Aug., Feb.)		NA	NA	X	NA	NA	NA	NA						

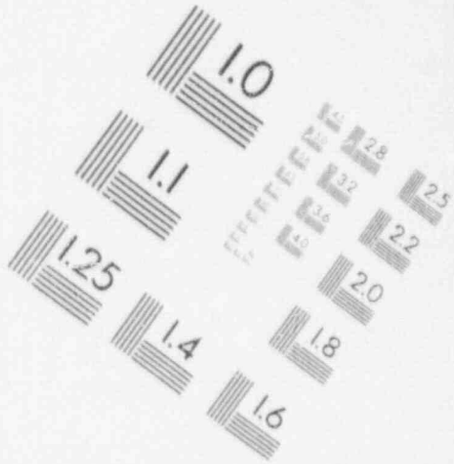
STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Management cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AUG
8) Dept. Meetings (monthly)		X	X	X	X	X	X	X						
9) Rad. Safety Meetings (Jan,Apr,Jul,Sep)				X		X			X					
Required attend.														
Administration									X					
FSO									X					
Nursing									X					
Radiology Mgr.									X					
9) Rev. Organ. chart (Jan.)		NA	NA	NA	NA	NA	NA	NA	NA					
10) Preventive maintenance Processor (monthly)		X	X	X	X	X	X	X						
Rad. Units (Nov.)		NA	NA	NA	NA	NA	NA	I						
11) Rev. Hazardous material (Oct)		NA	NA	NA	NA	NA	NA	I						
12) Rev. Job Descp. (Jan.)		NA	NA	NA	NA	NA	NA	NA						
13) Evaluations														
May - 1		1												
Aug - 1														
Sep - 1														
Oct - 1							1							
Dec - 1														
Feb - 1														
Apr - 2														

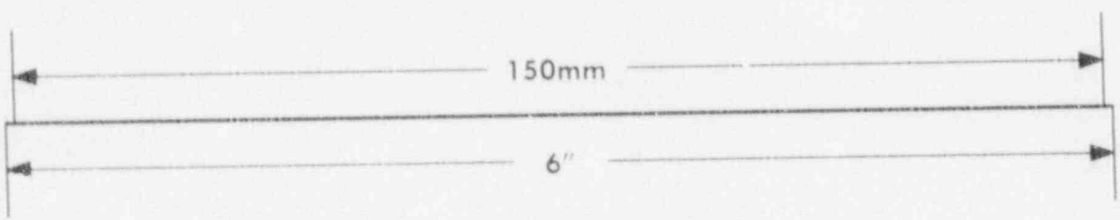
STATISTICS/INDICATORS (Title/Definition Months Rev./Rep.) Management cont.	STD's	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	AVG
14) Orientation (as needed)		NA	X	NA	NA	NA	IN PROCES	NA						
15) Orientation check list for Nuclear Medicine Assoc. (as needed)	ALL NEW ASSOC.						NA	NA						
16) Verification of Nuclear Med. Tech. competency (annual)							X							
17) Film badge report complete (monthly)	100%	X	X	X	X	X	X							
15) Inservice (as needed)		NA	NA	NA	NA	NA								
16) Agency compliance (as required)		NA	NA	NA	NA	NA								
17) Turnover rate (as needed)		NA	NA	NA	NA	1								
18) Exit interviews (as needed)		NA	NA	NA	NA	0								
19) Budget Variance Report (monthly)														

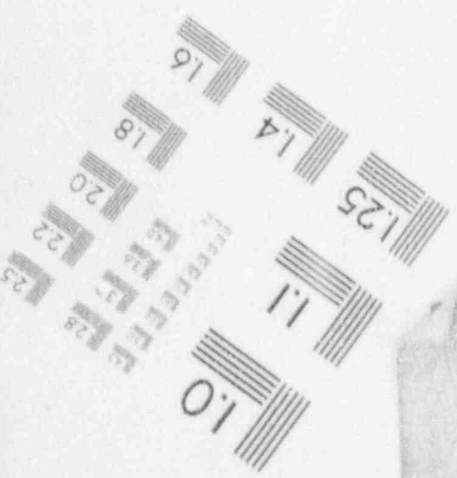
1

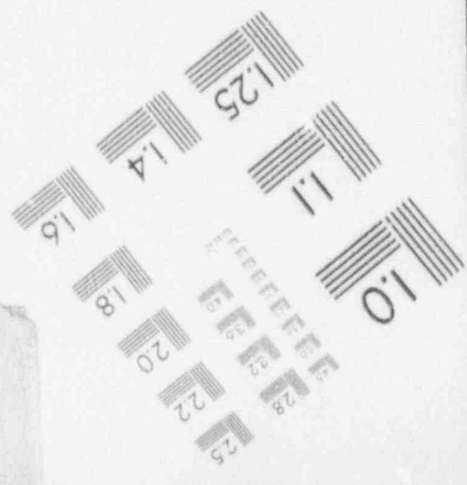
IMAGE EVALUATION TEST TARGET (MT-3)











Medical Physics Consultants, Inc.

MEMORANDUM

TO: West Shore Hospital

FROM: James E. Carey, M.S.
Medical Nuclear Physicist
MPC

DATE: 11/13/90

SUBJECT: Sharon Smith Hand Exposure

I have estimated the hand exposure to your technologist using the data measurements of Barrall, et al*. The exposure rate immediately adjacent to the syringe was used in the estimate (i.e. the highest unshielded rate).

From Barrall:

At the highest point (tip of index finger) 22,000 mR/h-20 mCi = 18.33 mR/h-mCi

Technologist "Hand" Exposure:

During Dose Preparation:

18.33 mR/min-mCi x 1000 mCi (estimated) x .25 min (estimated) = 4583 mR

Patient Injection:

18.33 mR/min-mCi x 183.3 mCi x 1 min (estimated) = 3360 mR

Total:

7943 mR or 7.9 R highest (tip of index finger)

Thus, conservatively, the estimate at the highest point (not averaged over the hand) was, given the above assumptions, approximately 8 Rem.

* Barrall RC and Smith SI: Personnel Radiation Exposure and Protection from Tc-99m Radiations. In AAPM Monograph No.1. Biophysical Aspects of the Medical Use of Technetium-99m. Eds Kereiakes JG and Corey KR, AAPM 1976

18.75 R/qtr allowable at ext.

RADIOLOGY DEPARTMENT
ASSOCIATE ORIENTATION CHECKLIST
10/90

ASSOCIATE _____

NUCLEAR MEDICINE	Initial	Date
1) TLD Ring Badge, Waist Badge, Colar Badge.	_____	_____
2) Elution of Generator	_____	_____
3) MO 99 Test	_____	_____
4) Dose Calibrator Constancy Test	_____	_____
5) Daily Area Survey Procedure	_____	_____
6) Weekly Swipe Test	_____	_____
7) Diagnostic Procedures Manual	_____	_____
8) IV Injection Procedure	_____	_____
9) Universal Precautions	_____	_____
10) Departmental Policies	_____	_____
11) Physicist Instruction	_____	_____
12) RSO Interview/Test	_____	_____
13) Quality Assurance Program	_____	_____
14) Fire Alarms & Extinguishers	_____	_____
15) Flood Study Operation	_____	_____
16) Code Blue Alarm	_____	_____

Signatures: ASSOCIATE _____

Trainer _____

Trainer _____

Radiation Safety Officer _____

SIEMENS

Siemens Gammasonics, Inc.
Health Physics Services
2501 Barrington Rd
Hoffman Estates, IL 60195-7372
Telephone (800) 888-1936

Radiation Exposure Report

Accredited By
The National Bureau of Standards
Through [illegible]

To:

WEST SHORE HOSPITAL
ATTN JAMES BRAND RT
RADIOLOGY DEPT
1865 E PARKDALE AVE
MANISTEE MI 49660

Shipped To:

WEST SHORE HOSPITAL
ATTN JAMES BRAND RT
RADIOLOGY DEPT
1865 E PARKDALE AVE
MANISTEE MI 49660

Customer Number	Report Printed	Normalization Level	Freq.	Standard Exposure Period
22111	10/10/90	0.000	1	1 MONTH
Process Number	**Date Received**			
896	10/04/90			071

When making inquiries about this exposure report, refer to the customer and process number.

Badge #	Type	Name	Social Security Number	Current Monitoring Period: Start Date (Badge Date)	No. of Days	X-R-G Penetrating	X-R-G Non-Penetrating	Neutron	Deep Dose (9+11)	Shallow Dose (9+10+11)	Quarter to Date: Deep Dose	Quarter to Date: Shallow Dose	Year to Date: Deep Dose	Year to Date: Shallow Dose	Lifetime Deep Dose	Lifetime Permissible	Birth Date and Site	Service Start Date
1	2	3	4	5	6,7,8	9	10	11	12	13	14	15	16	17a	17b	19	20	21	22
002	11	BRAND J	381621182	09/01/90		0	0		0	0	0	0		0	0	100	89900	081258	02/01/85
002	31	BRAND J	381621182	09/01/90		0	0		0	0	0	0			180			081258	02/01/85
002	91	BRAND J	381621182	09/01/90		0	0		0	0	0	0		10	10	170	89830	081258	02/01/85
004	11	PAYNE R	383580423	09/01/90		0	0		0	0	0	0		0	0	169	98800	112852	02/01/85
004	31	PAYNE R	383580423	09/01/90		0	0		0	0	0	0			70			112852	02/01/85
004	91	PAYNE R	383580423	09/01/90		30	0		30	30	90	90		190	190	1260	93740	112852	02/01/85
006	91	JACKOWSKI L	079269388	08/01/90	B	0	0		0	0	30	30		30	30	50	188950	101634	02/01/85
006	91	JACKOWSKI L	079269388	09/01/90		0	0		0	0	30	30		30	30	50	188950	101634	02/01/85
007	11	BARRISH C	284648293	09/01/90		0	0		0	0	0	0		0	0	0	160000	071300	02/01/85
008	11	BATZER DR T	365468342	09/01/90		0	0		0	0	0	0		0	0	0	120000	111747	02/01/85
009	11	BARLAN DR E	363?^3095	09/01/90	A	0	0		0	0	0	0		0	0	0	125000	011387	02/01/85
017	11	HANSEN DR W	382302823	09/01/90		0	0		0	0	0	0		0	0	0	175000	072837	02/01/85
018	11	PARIKH DR N	457397665	09/01/90		0	0		0	0	0	0		0	0	60	98960	102352	02/01/85
021	11	DULIN N	375026652	09/01/90		0	0		0	0	0	0		0	0	30	144970	012563	02/01/85
023	11	JORGENSEN [illegible]	364?68696	09/01/90		0	0		0	0	0	0		0	0	0	200000	040824	02/01/85
025	11	WALTER F	381320196	09/01/90		0	0		0	0	0	0		0	0	0	190000	061338	02/01/85
026	11	KIESZKOWSKI	367728456	09/01/90		0	0		0	0	0	0		0	0	70	74930	021857E	08/01/84
026	91	KIESZKOWSKI	367728456	09/01/90		0	0		0	0	0	0		30	30	50	74950	021857E	08/01/84
029	11	YOWMAN W	371362353	09/01/90		0	0		0	0	0	0		0	0	0	180000	032784E	10/01/84
030	11	SCHMOKE DR	365?29819	09/01/90		0	0		0	0	0	0		0	0	0	100000	122851W	08/02/87
031	11	SENTERS B	351389155	09/01/90		0	0		0	0	0	0		0	0	0	135000	111985E	09/02/87
032	11	MILLER C	297330926	09/01/90		0	0		0	0	0	0		0	0	0	160000	032985E	09/02/87
033	11	GOSSETT W	502591670	09/01/90		0	0		0	0	0	0		0	0	0	140000	051585E	09/02/87
034	11	THOMAS D	371449101	09/01/90		0	0		0	0	0	0		0	0	0	135000	052585E	09/02/87
035	11	BARLAN M	367526088	09/01/90		0	0		0	0	0	0		0	0	0	98000	050855E	09/02/87
037	11	FORTELKA N	371385916	09/01/90		0	0		0	0	0	0		0	0	0	170000	092338E	09/02/87
038	11	STEPNIEWSKI	373589685	09/01/90		0	0		0	0	0	0		0	0	30	104970	041751E	09/02/87
039	11	LANCID B	372626023	09/01/90		0	0		0	0	0	0		0	0	0	100000	022652E	09/02/87
040	11	DAVIS B	364538835	09/01/90		0	0		0	0	0	0		0	0	0	110000	092504E	09/02/87
041	11	KAAP S	382720458	09/01/90		0	0		0	0	0	0		0	0	0	60000	062560E	09/02/87
044	11	PARRISH S	381?87?09	09/01/90		0	0		0	0	0	0		0	0	0	80000	011554E	09/02/87

SIEMENS

Siemens Gammasonics, Inc.
Health Physics Services
2501 Barrington Rd
Hoffman Estates, IL 60195-7372
Telephone (800) 888-1936

Radiation Exposure Report

Accredited By
The National Bureau of Standards
Through [illegible]

To:

WEST SHORE HOSPITAL
ATTN JAMES BRAND RT
RADIOLOGY DEPT
1465 E PARKDALE AVE
MANISTEE MI 49660

Shipped To:

WEST SHORE HOSPITAL
ATTN JAMES BRAND RT
RADIOLOGY DEPT
1465 E PARKDALE AVE
MANISTEE MI 49660

Customer Number	Report Printed	Notification Level	Freq	Standard Exposure Period
22111	10/10/90	0.400	1	1 MONTH
Process Number	**Film Received**			
896	10/04/90			671

When making inquiries about this exposure report, refer to the customer and process number.

Badge #	Type	Name	Social Security Number	Current Monitoring Period: Start Date (Badge Date)	NUMA	X-R-G Penetrating	X-R-G Non-Penetrating	Neutron	Deep Dose (3 - 11)	Shallow Dose (59 - 10 - 11)	Quarter to Date: Deep Dose	Quarter to Date: Shallow Dose	Year to Date: Deep Dose	Year to Date: Shallow Dose	Life-Time Deep Dose	Unused Permissible Dose	Birth Date and Sex	Service Start Date
1	2	3	4	5	6 7 8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
051	11	DALLAS D	381529465	09/01/90		0	0		0	0	0	0		0	0	0	115000	0105495	01/02/8
052	11	HELWINIAK G	369729183	09/01/90		0	0		0	0	0	0		0	0	50	69950	0909585	03/02/8
053	11	POMERAY R	362641683	09/01/90		0	0		0	0	0	0		0	0	0	90000	1215535	10/02/8
054	11	SIEVER M	367718483	09/01/90		0	0		0	0	0	0		0	0	80	39960	0826685	10/02/8
055	11	MAY T	386560532	09/01/90		0	0		0	0	0	0		0	0	0	100000	0720525	11/02/8
056	11	FOSTER L	378484239	09/01/90		0	0		0	0	0	0		10	10	70	114930	1021884	01/02/8
056	37	FOSTER L	378484239	09/01/90		0									0			1021884	01/02/8
056	91	FOSTER L	378484239	09/01/90		0	0		0	0	0	0		10	10	70	114930	1021884	01/02/8
058	11	PERALTA V	576843773	09/01/90		0	0		0	0	0	0		0	0	10	74990	0618575	06/02/8
058	91	PERALTA V	576843773	09/01/90		0	0		0	0	0	0		30	30	40	74960	0618575	06/02/8
060	11	MONTGOMERY	378420968	09/01/90		0	0		0	0	0	0		0	0	0	155000	1018805	10/02/8
061	11	SMITH S	372768932	09/01/90		0	0		0	0	0	0		10	10	50	58950	0921615	11/02/8
061	91	SMITH S	372768932	09/01/90		0	0		0	0	0	0		10	10	50	58950	0921615	11/02/8
062	11	TESHIMA P	377768237	09/01/90		0	0		0	0	0	0		0	0	0	60000	0329605	03/02/9
063	11	SCHUBERT D	384759319	09/01/90		0	0		0	0	0	0		0	0	0	60000	0826585	03/02/9
064	11	SWICKEY D	382620730	09/01/90		0	0		0	0	0	0		0	0	0	90000	1231535	03/02/9
065	11	YOUNG A	305488338	09/01/90		0	0		0	0	0	0		0	0	0	95000	1001535	03/02/9
066	11	MOSS J	386831057	09/01/90		0	0		0	0	0	0		0	0	0	80000	0103685	03/02/9
066	91	MOSS J	386831057	09/01/90		0	0		0	0	0	0		0	0	0	80000	0103685	03/02/9

Radiation Safety Committee

Tuesday-March 13, 1990

Present: James Brand, Radiology Supervisor, Mr. Parks, Administrator, Sheryl Wygant, R.N., Dr. Jackowski, Radiologist, RSO.

1) Reviewed minutes from meeting held on January 22, 1990.

2) Reviewed film badge reports. RAndall Payne had one high reading of 50 mr. I have discussed the situation with him and gave him recommendations on how to lower his future doses.

3) The Physicist has noted that our December meeting was late as it was held in January. He explained that the NRC finds this to be unacceptable. In order to rectify the matter, I suggested that we start having our meetings in the first month of each quarter instead of the last month of the quarter. This motion was approved. Future Radiation Safety Meetings will be in January, April, July, and October.

4) We reviewed the December MPC report again and I reported that all concerns from that report have been corrected.

5) Mr. Parks noted that we are planning to move the Nuclear Medicine Lab to the third floor. I will contact the Physicist in order to impliment the paper work.

6) No further business. Meeting adjourned. The next meeting will be held in April of 1990.

Respectfully submitted,

James Brand

James Brand, RT/RDMS
Radiology Supervisor

Radiation SAfety Committee

Tuesday-April 10, 1990

Present: James Brand, Radiology Supervisor, Mr. Parks, Administrator, Sheryl Wygant, R.N., Dr. Jackowski, Radiologist, RSO.

1) Reviewed minutes from meeting held on March 13, 1990.

2) Reviewed film badge reports. All film badge readings were within the acceptable limits of 125 mrem/quarter. AIARA Level I to Administration

3) We will be sending in to the NRC for a license ammendment so that we can move the Nuclear Medicine Department to the third floor.

4) I discussed with Mrs. Wygant the possibility of having the film badges from surgery put on a card in a location that would make it easier for me to locate each badge for updating.

5) I have contacted the Physicist with regards to the possibility of having lead in the walls of the proposed temporary mammography suite.

6) No further business. Meeting adjourned. The next meeting will be held in July of 1990.

Respectfully submitted,

James Brand

James Brand, RT/RDMS
Radiology Supervisor

NUCLEAR MEDICINE DEPARTMENT

PROCEDURE CHECK LIST:

Patient Name_____ Date_____

Procedure_____

	Initial
1) Room Area Survey	_____
2) Dose Calibrator Constancy Check	_____
3) Flood Study Performed	_____
4) TLD Ring Badge Worn	_____
5) Syringe Shields Used	_____
6) uci MO^{99} / MCI ^{99m}Tc	_____
	Total

Amount and Type of Reagent Used _____
(See manufacturers instructions in procedure manual or package insert)

Technologist_____

NUCLEAR MEDICINE DEPARTMENT

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Technologist_____

October 1990

WEST SHORE HOSPITAL

NUCLEAR MEDICINE

TITLE Weekly Wipe Test

PROCEDURE A weekly wipe test of designated areas shall be performed each Friday in the following manner.

1. Use alcohol swabs in cabinet to swipe.

2. Swipe each designated area which is labeled 1-8, refer to room map in front of log book. Put each individual swipe in a baggie (found in bottom cabinet).

3. Turn on Thyroid Uptake probe.

4. Set appropriate window settings for Tecnitium A. Upper window 999 B. Lower window 0

5 Take a background reading (10 minutes) and divide reading by 10 for an average background reading. Record on weekly swipe chart in survey log.

6. Place each bag in Thyroid cylinder and start for 1 minute.

7. Subtract background from each reading and multiply the net by a correction factor of 3.0. This will be the disintegration per minute.

8 Record in weekly swipe test log in daily survey book.

9. Action level 2000 DPM.

10. If you obtain a reading of 2000 DPM in any area, then you must decontaminate that area with Radiac Wash, dispose of contaminated materials in lead vault, and redo the swipe of that area until it is below 2000 DPM.

11. Return Probe window setting to I123 setting.

12. Upper Level 164

13. Lower Level 154

Approved _____

Distribution _____
D: WKWIPT
TXTNUMED

WEEKLY WIPE SURVEYS

Instrument: _____

Serial#: _____

Efficiency Factor: _____

H.V. or Peak: _____

Room: _____

Trigger Level: 2000 DPM

Date: _____

See Map for Area Locations.

Area#	1 min ct. CPM	1 min bkg. CPM	ct. - bkg. NET CPM	Efficiency Factor	Disintegrations DPM
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
20					

October, 1990

WEST SHORE HOSPITAL

NUCLEAR MEDICINE

TITLE: Biliary Scan

POLICY: To assure consistent quality scans

PROCEDURE: A. Materials

1. 4 to 8 millicuries 99m Tc Choletec (Mebrofenin). Increased Bilirubin=Increased mci.
2. Scintillation camera
3. Diverging collimator
4. Hospital cart

B. Dose Preparation

Preparation of Technitium Tc 99m Mebrofenin is done by the follwing aseptic procedure:

1. Waterproof gloves should be worn during the preparation procedure.

2. Place reaction vial in an appropriate lead shield.

3. Swab the rubber closure of the reaction vial with a germicide.

4. Inject 1 to 5 mL sterile additive free sodium pertechnetate Tc 99m injection containing up to 3700 MBq (100 millicuries) Tc 99m into the reaction vial. Be sure to maintain a nitrogen atmosphere in the vial by not introducing air during reconstitution. NOTE: If sodium pertechnetate Tc 99m injection must be diluted for use with Choletec (Kit for the Preparation of Technetium Tc 99m Mebrofenin), only preservative free Sodium Chloride Injection USP should be used.

5. Secure the lead shield cover. Swirl the vial gently to mix contents and let stand for 15 minutes.

6. Record the date and time of preparation on pressure-sensitive label.

7. Affix pressure-sensitive label to shield.

8. Examine vial contents. If the solution is not clear and free of particulate matter and discoloration on visual inspection, it should not be used.

9. Measure the radioactivity by a suitable calibration system and record on the shield label prior to patient administration.

10. Withdraw material with a sterile lead shielded syringe for use within 18 hours of preparation.

11. Storeage: Store the kit as supplied at 10-30 degrees celsius prior to and following reconstitution. Use within 18 hours of reconstitution.

C. Patient Preparation

1. Patient is to have a fat free meal the evening before the exam and is to be NPO after midnight.
2. Instruct patient as to the procedure

D. Procedure

1. Set camera controls

   a. 300,000 counts
   b. Proper intensity 480-70mm
   c. Proper orientation (x-y exc)
   e. Check to see that camera is set (peaked) for 99mTc

2. Inject 4 to 8 millicuries 99m Tc Choletec

3. Position patient so that the liver is visible towards the top of the image

4. Take films at the following intervals:
   5 min--15 min--25 min--35 min--45 min--60 min.,

   a. If the biliary system AND gallbladder are not visualized at 60 min., films will be taken at one (1) hour intervals up to four (4) hours until the gallbladder is visible or radionuclide can be seen in the small bowel.

5. All views to be done in the anterior position

E. Key Points

A perfusion type Liver Scan study may be done in the first five (5) minutes after injection of the radionuclide. After this time, the drainage of the radionuclide into the biliary tree may show as a false positive Liver Scan.

F. Contraindications (consult pharmaceutical literature if necessary)

1. An allergic type reaction may be possible with multiple injections of Disofenin
2. Radiopharmaceuticals are contraindicated in pregnancy and during lactation and in persons less than 18 years of age unless, in the judgment of the physician the situation requires their use.

Approved: Lawrence J. Coulthard

Distribution: _____

F: BILIARY
D: P&P NUC MED
Orig. 6-85
Rev. 1-88