

METROPOLITAN RADIOLOGY, P.C.

Phone: 553-3133
32405 WEST TWELVE MILE ROAD
FARMINGTON HILLS, MICHIGAN 48018

UNITED STATES
NUCLEAR REGULATOR
COMMISSION REGION 111

License No. 21-17086-01

February 20, 1981

GENTLEMEN:

This letter refers to the routine safety inspection conducted by Mr. W.P. Reichhold of your office at Metropolitan Radiology P.C.

During this inspection, certain violations were found. This is our written response on how we have corrected these violations.

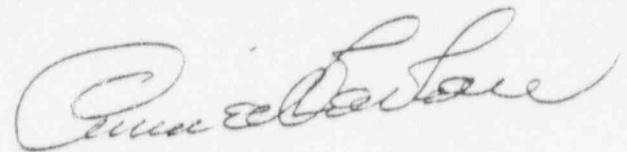
1) We called Picker Corporation and applied for a Loaner Dose Calibrator. We can send it to Picker for recalibration when necessary. Linearity checks are now being done on a daily basis.

2) We sent our G.M. Counter to Medi-Ray Inc. for repair, but they sent it back still unoperable. We are now sending it to Michigan Nucleonics of Farmington for the necessary repairs. Pharmatopes rented us a G.M. Counter so we can perform our daily surveys until ours is repaired.

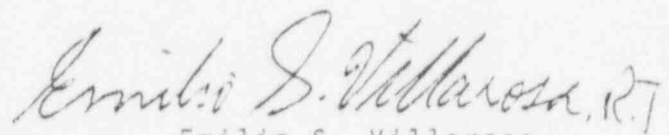
3) Daily records showing the receipt, transfer and disposal of the byproduct materials are being logged.

4) We are sending you the records regarding (10cfr section 20.401(a)) which states the exposures for July and August 1980. We kept our duplicate.

These statements are verified and sworn to be true by the nuclear medicine technologist, Emilio S. Villarosa R.T.; C.N.M.T. and Dr. C. Tavlan, Radiologist.



Dr. C. Tavlan
Radiologist



Emilio S. Villarosa
Nuclear Medicine Tech.

FEB 23 1981

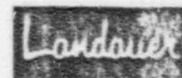
8106160442

ACCOUNT NO.	SERIES CODE
73163	

EXPOSURE PERIOD	PROCESS NO.	PREPARATION DATE	QUARTERLY SUMMARY PLAN *	NO. COP	OVER LEV	NOTE	FILE NO.
1 MONTH U	K8249	90880	2. 1 AL. QUARTED TO DATE 3. NO SUMMARY 5. COMB. 2 AND 3 ABOVE	2	1	C9999	CT 1

R. S. Landauer, Jr. & Co.
Division of Technical Operations, Incorporated

Glenwood Science Park
Glenwood, Illinois 60425
Telephone (312) 755-7000



RADIATION DOSIMETRY REPORT

PR 1885 - 10132

PARTICIPANT NAME	SOCIAL SECURITY NO.	NOTE (1) FBI (2) DOH	EXPOSURE TYPE	EXPOSURE TO BADGE (IN MILLIREMS) FOR THE PERIOD OR PERIODS INDICATED BELOW					ENERGY RANGE	CUMULATIVE TOTALS - IN MILLIREMS			ADJUSTMENTS	PERMISSIBLE ACCUMULATED DOSE (IN MILLIREMS)	UNUSED PART OF PERMISSIBLE ACCUMULATED DOSE (IN MILLIREMS)	SEX	BIRTH DATE			NO. OF BADGE REPORTS TO DATE	NO. OF REPORTS THIS QUARTER	NO. OF REPORTS THIS YEAR	DATE OF PERMANENT TOTAL
				GAMMA & X RAY	BETA	THERMAL NEUTRON	FAST NEUTRON	TOTAL		CALENDAR QUARTER OR 13 WEEKS	YEAR TO DATE	PERMANENT					MO	DAY	YR				
FOR EXPOSURE PERIOD 07/05/80 TO 08/04/80									0703	1004	198												
CONTROL			G1	M				M		M	M	M								82	1		675
CONTROL			G1	M				M		M	M	M								49	1		576
KAREN	377520456		G1	M				M		M	M	M							22861	62	1		675
AN C	373484140		G1	M				M		M	M	480	D						12429	61	1		1174
TERI A	366589001		G1	M				M		M	M	M							60352	13	1		773
AROSA EMILIO	376647358		G1	M				M		M	M	M							62943	9	1		1177
AROSA EMILIO	376647358		UE					M		M	30	270							62943	9	1		1179

POOR ORIGINAL

POOR ORIGINAL

EXPLANATION AND REMARKS CONCERNING THE REPORT.

1. CUMULATIVE RANGE COVERED

Exposures reported in millirems from gamma and x-ray 18 KEV to 20 MEV, beta over 1.5 MEV, neutrons, 1 MEV to 10 MEV. Dosage beyond these limits is recorded but not necessarily in millirems unless arrangements were made for calibration at other energy ranges. (X & RAY badge 10 KVP to 90 KVP)

2. MINIMUM DOSAGE COVERED

Exposures below minimum quantity measurable are recorded "M" "M" to current period columns equals less than 10 millirems X or gamma, 40 millirems hand beta, 20 millirems fast neutron, or 10 millirems thermal neutron. For special dental X Ray badge (DE X RAY) "M" equals less than 5 millirems. "M" in cumulative total column means all previous current exposures have been minimal, unless adjustments to these totals have been made at customer's request.

3. DETERMINATION OF CUMULATIVE DATA

Cumulative totals equal sum of non minimal readings for badges returned for processing and reported to date. Minimal exposures are added or zero if other than weekly reporting periods are used. The 13 week summary will be the nearest interval of greater duration. Calendar quarters are selected to most nearly conform to NRC and state recording requirements considering starting date and length of monitoring periods chosen.

4. SKIN DOSE TOTALS

Total and cumulative skin dose values given are the sum of both the low penetrating radiation and the high penetrating radiation. (Thus they will be the sum of all previous skin dose plus total body exposures listed).

5. ADJUSTMENTS TO CUMULATIVE DATA

To aid in proper presentation of information for records required by the NRC and other regulatory bodies, amendments to the cumulative totals (columns 13, 14 and 15) may have been made increasing or decreasing the totals from those originally reported. Such amendments are made at the request of an authorized representative of the client and are only to reflect supplementary data demonstrating that the film badge exposure originally occurred in such a manner as to either overstate or understate the true dosage to the badge assignee. (Refer to adjustment column). Addition of previous exposure prior to commencement of use of the particular film badge assignment reported may also be reflected in the cumulative total.

6. USE OF CONTROL DOSIMETER

Reporting is ordinarily in net exposure and the control dosimeter reading is deducted from the personnel dosimeter reading. If the control appears to have been exposed differently from the personnel dosimeters, the values of the personnel dosimeters are normalized to our controls only and a non-minimal control reading reported. A control dosimeter reading is given in arbitrary units, not necessarily millirems. If the control dosimeter reading is subtracted but is equal to 20 mR or greater, that subtracted value will be reported at the bottom of your report.

7. REPORTING OF BETA AND/OR SOFT X RAY

Minimal beta or soft x-ray skin dose readings are unreported until after a positive skin dose exposure is recorded.

8. RING BADGE READINGS

Ring badge readings are calculated as if due to X or gamma rays. If produced by beta the dosage may be understated. Reinterpretation is possible under these circumstances.

9. GENERAL RADIATION EXPOSURE GUIDES*

TYPE OF EXPOSURE GUIDE VALUE

Whole body head & neck, 1250 millirem per quarter; blood forming organs, 5000 millirem per year (up to lens of eye); or gonads 3000 millirem is permitted in a calendar quarter as long as the accumulated occupational dose to the whole body does not exceed 5000 millirem x (age/18).

Skin of whole body 7,500 millirem per quarter

Hands, forearms, feet 18,750 millirem per quarter and ankles

*U.S.N.R.C. regulations, Title 10, Part 20, Code of Federal Regulations (9/1/78). NOTE: Certain states and other regulatory agencies may follow guides that are different from the above.

(COLUMN 4) NOTES.

B.1 This film appears to have been damaged by light. The accuracy of any reading given would be affected thereby.

B.2 This film appears to have been damaged by moisture. The accuracy of any reading given would be affected thereby.

B.3 This film appears to have been damaged by chemical fogging. The accuracy of any reading given would be affected thereby.

B.4 This film appears to have been manufactured faultily. The accuracy of any reading given would be affected thereby.

B.5 This film appears to have been damaged by heat or pressure. The accuracy of any reading given would be affected thereby.

C. Evidence of contamination

DA This film packet appears to have been exposed out of the badge, therefore, the value given is based on a high energy gamma calibration and is valid only if the exposure were due to high energy gamma. If it were due to beta particles, the dosage may be from 1.5 to 20.0 times the reported value. If it were due to lower energy x or gamma rays, the value reported may be from 1.1 to 20.0 times the actual dosage.

DC This film packet is partially light-tight. There is apparently a dose recorded, however, no exact quantitative determination can be made.

DD This film badge appears to have been shielded during exposure. The dose reported is not an exact quantitative determination, but only an indication that the badge was exposed.

(COLUMN 5) DOSIMETER TYPE USE

- A - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- B - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- C - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- D - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- E - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- F - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- G - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- H - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- I - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- J - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- K - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- L - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- M - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- N - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- O - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- P - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- Q - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- R - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- S - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- T - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- U - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- V - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- W - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- X - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- Y - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)
- Z - GAMMA, BETA, FAST NEUTRON (NEUTRON 14)

- OPTIONAL CODE (WHEN USED)
- ADDITIONAL BETA CALC. & COMBIN.
- ADDITIONAL BETA CALC.
- COMBINATION HOLDER

(COLUMN 12) ENERGY RANGE

For some badges, the range column may contain either L, M, or H to indicate the approximate effective dose of the x or gamma exposure. L approximately 100 KEV (effective between approximately 100 KEV and approximately 250 KEV (effective); in excess of approximately 250 (Very low energy x or gamma result in exposure, predominantly separately itemized as type

(COLUMN 16) ADJUSTMENTS

- A - Adjustments made to cumulative this or previous report at customer's request
- B - Subtractions
- C - Additions & Subtractions
- D - Dosage data supplied by customer prior to inception of landauer service
- E - Dosage data supplied by customer prior to inception of landauer service changes have also been made
- F - Previous lifetime exposure supplied
- G - Previous lifetime exposure supplied additional changes have also been

(COLUMNS 17-18) PERMISSIBLE AGE

Unless birth date and lifetime exposure are supplied by the customer, no reported in columns 17 and 18. If supplied this data, column 17 is multiplying 5000 times the difference in years and 18 (if age is given this value is computed on a month) 18 is determined by subtracting column 17. Permissible values are given by 8, 1957 recommendations Committee on Radiation Protection. These values are given for exposures only.

ACCOUNT NO.	SERIES CODE
73163	

AN RAD CLN
TAULAN
12 MILE RD
CN MI 48024

RADIATION DOSIMETRY REPORT

EXPOSURE PERIOD	PROCESS NO.	PREPARATION DATE	QUARTERLY SUMMARY PLAN *	NO. OF	OVER LEV	NOTE	FIG NO.
1 MONTH U	K2608	92980	2 CAL. QUARTER TO DATE 3 NO. SUMMARY 5 COMB 2 AND 3 ABOVE	2	1	00099 CT	1

R. S. Landauer, Jr. & Co.
Division of Technical Operations, Incorporated

Glenwood Science Park
Glenwood, Illinois 60425
Telephone (312)755-7000



PR 1201 - 10424

PARTICIPANT NAME	SOCIAL SECURITY NO.	BIRTH DATE	SEX	EXPOSURE TO BADGE (IN MILLIREMS) FOR THE PERIOD OR PERIODS INDICATED BELOW				ENERGY RANGE	CUMULATIVE TOTALS - IN MILLIREMS			ADJUSTMENTS	PERMISSIBLE ACCUMULATED DOSE (IN MILLIREMS)	UNUSED PART OF PERMISSIBLE ACCUMULATED DOSE (IN MILLIREMS)	SEX	BIRTH DATE			NO. OF BADGE REPORTS TO DATE	NO. OF REPORTS THIS QUARTER	NO. OF ADJUSTMENTS TO DATE	TOTAL PERMANENT DOSE (IN MILLIREMS)	
				RAW DATA	BETA	INTERNAL NEUTRON	FAST NEUTRON		TOTAL	CALENDAR QUARTER OR 13 WEEKS	YEAR TO DATE					PERMANENT	MO.	DAY					YR.
FOR EXPOSURE PERIOD 07/05/80				TO 08/04/80				0705	1004	1980													
IN SANDRA	364667928		G1	M				M		M		M			F	72156		7	1			180	
FOR EXPOSURE PERIOD 08/05/80				TO 09/04/80				0705	1004	1980													
CONTROL			G1	M				M		M		M						33	2			670	
CONTROL								M		M		M						50	2			670	
N KAREN	377520456		G1	M				M		M		M					22851	63	2			670	
AN C	373484140		G1	M				M		M		M	480	D			12429	62	2			1170	
R TERI A	366580001		G1	M				M		M		M			F	60352		14	2			770	
AROSA EMILIO	376647358		G1	M				M		M		M			M		62503		10	2		1170	
AROSA EMILIO	376647358		U3					M		M	30	270			M		62503		10	2		1170	
IN SANDRA	364667928		G1	M				M		M		M			F	72156		8	2			180	
GIA NARJIS	386627515		G1	M				M		M		M			F	81651		2	1			680	

FEB 23 1981

POOR ORIGINAL

FEB 23 1981

POOR ORIGINAL

2
TYPE
3-RIGHT WRIST
6-LEFT WRIST

3-OTHER EXTREMITY
8-OTHER TOTAL BODY
9-MONITOR

IMPORTANT: SEE REVERSE SIDE FOR ADDITIONAL EXPLANATION

AN "H" (HIGH ENERGY) DESIGNATION, WHEN ONLY LOW ENERGY EXPOSURE IS POSSIBLE, MAY INDICATE THAT THE FILM PACKET IS NOT PROPERLY INSERTED IN HOLDER

* COLUMN 16 IS USED TO SEPARATELY REPORT BETA DOSE AND THERMAL NEUTRON DOSE IF EXPOSURE TYPE (COLUMN 15) IS 2. BETA DOSE IS BEING REPORTED IF EXPOSURE TYPE (COLUMN 15) IS 1. THERMAL NEUTRON DOSE IS BEING REPORTED

1. NAME OF PERSON TO WHOM BADGE IS ISSUED

2. NAME OF PERSON TO WHOM BADGE IS ISSUED

1. Name of person to whom badge is issued (last, first, middle initial)
2. Address of person to whom badge is issued (street, city, state, zip)
3. Date of birth (month, day, year)
4. Date of issue (month, day, year)
5. Date of expiration (month, day, year)
6. Date of return (month, day, year)
7. Date of receipt (month, day, year)
8. Date of payment (month, day, year)
9. Date of collection (month, day, year)
10. Date of disposal (month, day, year)

3. TYPE OF EXPOSURE REPORTED

1. Exposure to x-rays, gamma rays, or other ionizing radiation
2. Exposure to ultraviolet light
3. Exposure to infrared radiation
4. Exposure to radio waves
5. Exposure to microwaves
6. Exposure to sound waves
7. Exposure to heat
8. Exposure to cold
9. Exposure to vibration
10. Exposure to magnetic fields
11. Exposure to electric fields
12. Exposure to chemical agents
13. Exposure to biological agents
14. Exposure to nuclear radiation
15. Exposure to cosmic rays
16. Exposure to solar radiation
17. Exposure to terrestrial radiation
18. Exposure to radon gas
19. Exposure to radon progeny
20. Exposure to radon daughters

4. TYPE OF EXPOSURE REPORTED

1. Exposure to x-rays, gamma rays, or other ionizing radiation
2. Exposure to ultraviolet light
3. Exposure to infrared radiation
4. Exposure to radio waves
5. Exposure to microwaves
6. Exposure to sound waves
7. Exposure to heat
8. Exposure to cold
9. Exposure to vibration
10. Exposure to magnetic fields
11. Exposure to electric fields
12. Exposure to chemical agents
13. Exposure to biological agents
14. Exposure to nuclear radiation
15. Exposure to cosmic rays
16. Exposure to solar radiation
17. Exposure to terrestrial radiation
18. Exposure to radon gas
19. Exposure to radon progeny
20. Exposure to radon daughters

5. TYPE OF EXPOSURE REPORTED

1. Exposure to x-rays, gamma rays, or other ionizing radiation
2. Exposure to ultraviolet light
3. Exposure to infrared radiation
4. Exposure to radio waves
5. Exposure to microwaves
6. Exposure to sound waves
7. Exposure to heat
8. Exposure to cold
9. Exposure to vibration
10. Exposure to magnetic fields
11. Exposure to electric fields
12. Exposure to chemical agents
13. Exposure to biological agents
14. Exposure to nuclear radiation
15. Exposure to cosmic rays
16. Exposure to solar radiation
17. Exposure to terrestrial radiation
18. Exposure to radon gas
19. Exposure to radon progeny
20. Exposure to radon daughters

6. TYPE OF EXPOSURE REPORTED

1. Exposure to x-rays, gamma rays, or other ionizing radiation
2. Exposure to ultraviolet light
3. Exposure to infrared radiation
4. Exposure to radio waves
5. Exposure to microwaves
6. Exposure to sound waves
7. Exposure to heat
8. Exposure to cold
9. Exposure to vibration
10. Exposure to magnetic fields
11. Exposure to electric fields
12. Exposure to chemical agents
13. Exposure to biological agents
14. Exposure to nuclear radiation
15. Exposure to cosmic rays
16. Exposure to solar radiation
17. Exposure to terrestrial radiation
18. Exposure to radon gas
19. Exposure to radon progeny
20. Exposure to radon daughters

7. TYPE OF EXPOSURE REPORTED

1. Exposure to x-rays, gamma rays, or other ionizing radiation
2. Exposure to ultraviolet light
3. Exposure to infrared radiation
4. Exposure to radio waves
5. Exposure to microwaves
6. Exposure to sound waves
7. Exposure to heat
8. Exposure to cold
9. Exposure to vibration
10. Exposure to magnetic fields
11. Exposure to electric fields
12. Exposure to chemical agents
13. Exposure to biological agents
14. Exposure to nuclear radiation
15. Exposure to cosmic rays
16. Exposure to solar radiation
17. Exposure to terrestrial radiation
18. Exposure to radon gas
19. Exposure to radon progeny
20. Exposure to radon daughters

7. REPORTING OF BETA AND GAMMA X-RAY

Annual beta and gamma x-ray dose readings are compared to establish any change in exposure recorded.

8. RING-BADGE READINGS

Ring badge readings are calculated as if due to x or gamma rays. If produced by beta the dosimetry may be understated.

Reinterpretation is possible under these circumstances.

9. OTHER RADIATION EXPOSURE DATA

TYPE OF EXPOSURE GUIDE VALUE
Whole body, head & neck, 1250 millirem per quarter; blood-forming organs, 5000 millirem per year. Up to less of eye or gonads, 2000 millirem is permitted in a calendar quarter or, for purposes of accumulated dose, in a calendar quarter if the dose did not exceed 5000 millirem in a year.

Stomach, 7,500 millirem per quarter.
Hands, forearms, feet, 15,750 millirem per quarter and ankle.

*NBS-NRC regulations, Title 10, Part 29, Code of Federal Regulations (41-29). 1991. Certain states and other regulatory agencies may follow guides that are different from the above.

(COLUMN 4) NOTES

A. ABSENT

B-1 This film appears to have been damaged by light. The accuracy of any reading given would be affected thereby.

B-2 This film appears to have been damaged by moisture. The accuracy of any reading given would be affected thereby.

B-3 This film appears to have been damaged by chemical fogging. The accuracy of any reading given would be affected thereby.

B-4 This dosimeter appears to have been manufactured faulty. The accuracy of any reading given would be affected thereby.

B-5 This film appears to have been damaged by heat or pressure. The accuracy of any reading given would be affected thereby.

C. Evidence of contamination

DA This film packet appears to have been exposed out of the badge, therefore, the value given is based on a high energy gamma calibration and is valid only if the exposure were due to high energy gamma. If it were due to beta particles, the dosage may be from 1.5 to 20.0 times the reported value. If it were due to lower energy x or gamma rays, the value reported may be from 1.1 to 20.0 times the actual dosage.

DC This film packet is partially light-struck. There is apparently a dose recorded, however, no exact quantitative determination can be made.

DD This film badge appears to have been stuck during exposure. The dose reported is not an exact quantitative determination, but only an indication that the badge was exposed.

DE This film badge appears to have been scratched during exposure. If a dose recorded, however, no exact quantitative determination can be made.

DF This film badge appears to have been misplaced in the badge. The dose reported is not an exact quantitative determination, but is only an indication if the badge was exposed.

DG Although this film packet was slightly light-struck, there seems to be no apparent effect on the reading.

EH The beta gamma background on this film badge was 1.5 to 1.6, to give a valid fast neutron reading.

DI The reading is based on a 100 kV x-ray. This film badge appears to be defective, please return badge for replacement.

DJ This film packet is too old to process.

DL This control packet appears to have been placed in a film badge, indicating possible misuse. May be intended to show the value of the control films is not if used for personnel monitoring or other radiation measurement purposes.

DM This film appears to have been exposed from the rear of the badge.

DN Amounts shown in columns 7 to 10 have been permanently subtracted from cumulative totals at customer's request.

DI Amounts shown in columns 7 to 10 have been permanently added to cumulative totals at customer's request.

DU Amounts shown in columns 7 to 10 have been supplied by customer for period prior to inception of Landauer service and have been permanently added to cumulative totals.

DV Amounts shown in columns 7 to 10 are previous lifetime exposures supplied by customer and have been permanently added to cumulative totals.

DW Other comment - See attached note.

DX See attached note.

E. Exposure

E-1 Due to the irregular exposure the effective energy cannot be properly determined and the dosage is estimated arbitrarily based on 50 to 150 PKV x-rays as probable source of exposure. If different energy the value reported will not be the actual dosage.

E-2 Due to the irregular exposure the effective energy cannot be properly determined and the dosage is estimated arbitrarily based on gamma or x-ray over 400 KEV as probable source of exposure. If different energy the value reported will not be the actual dosage.

H. Unused.

(COLUMN 5) DOSIMETER TYPE 6

X. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
Y. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
Z. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
A. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
B. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
C. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
D. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
E. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
F. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
G. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
H. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
I. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
J. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
K. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
L. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
M. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
N. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
O. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
P. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
Q. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
R. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
S. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
T. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
U. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
V. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
W. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
X. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
Y. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)
Z. GAMMA, BETA, FAST NEUTRON (INSTRUM 6)

OPTION CODE (WHEN USED)
1 - ADDITIONAL BETA CALC. & CORRECTION
2 - ADDITIONAL BETA CALC.
3 - COMBINATION HOLDER

(COLUMN 12) ENERGY DATA

For some badges, the range code may contain either L, M, or H, made for exposures in excess of the approximate effects of the x or gamma exposure. 1 approximately 100 KEV (effective between approximately 100 KEV approximately 250 KEV (effective) in excess of approximately 250 (Very low energy x or gamma result in exposure, predominately are separately itemized as follows).

(COLUMN 16) ADJUSTMENTS

Adjustments made to cumulative this or previous report at:

A. Additions
B. Subtractions
C. Additions & Subtractions
D. Dosage data supplied by customer prior to inception of Landauer service
E. Dosage data supplied by customer prior to inception of Landauer service changes have also been made.
F. Previous lifetime exposure supplied by customer
G. Previous lifetime exposure supplied by customer additional changes have also been made.

(COLUMNS 17-18) PERMISSIBLE A

Unless birth date and lifetime are supplied by the customer, reported in columns 17 and 18, supplied this data, column 17 multiplying 5000 times the difference in years and 18 (if age is 18) This value is computed on a monthly basis determined by subtracting column 17. Permissible values are given by 8, 1957 recommendations. Committee on Radiation Protection. These values are given for exposures only.