



NUCLEAR CONSULTANTS CORPORATION

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LABORATORIES IN ST. LOUIS,
LOS ANGELES AND CLEVELAND
OFFICES IN MAJOR CITIES

November 14, 1966

Director
Isotopes Branch
Division of Materials Licensing
U. S. Atomic Energy Commission
1717 "H" Street
Washington 25, D.C.

Gentlemen:

The purpose of this letter is to report in writing the average Iodine-131 thyroid burdens of certain individuals since the week ending October 15, 1966, which is the second week of the fourth quarter starting October 3, 1966. The enclosed fractional permissible Iodine-131 thyroid burden reports are not in terms of microcuries but may be converted to microcuries by multiplying the tabulated values by 0.15 μC of Iodine-131. Therefore, on these reports $1.00 = 0.14 \mu\text{C}$ of Iodine-131.

An additional change has been made in the air handling system in the Iodine-131 tagging room. A 4-inch duct connecting the base cabinet of the Iodine-131 diagnostic capsule production hood to the main exhaust duct has been added. This duct maintains the base cabinet at a negative pressure at all times. Previously, the base cabinet was maintained at a negative pressure only when the window of the diagnostic capsule production hood was fully closed. The dispensing mechanism for diagnostic capsule production is currently located in the base cabinet of the capsule production hood. A new dispensing mechanism has been designed, and engineering drawings will be distributed for quotations in the very near future. This dispensing mechanism would be located inside the hood proper and should eliminate leakage problems we have had in the past. These two steps have been taken in addition to the

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previously described corrective measures as outlined in our letter dated July 25, 1966. Most of the Iodine-131 thyroid burdens herein reported are attributable to leaks which have occurred in the old dispensing mechanism. Some thyroid burdens which occurred as a result of external contamination reported by the individuals concerned and verified by the health physics department using a single channel analyzer are not included in this report.

The names of the individuals involved are listed in a separate part of this report.

Sincerely yours,

NUCLEAR CONSULTANTS
DIVISION MALLINCKRODT CHEMICAL WORKS

Donald W. Soldan

Donald W. Soldan, Manager
Health Physics Department

DWS:HS
Enclosures

Copy to Manager, Region III
Division of Compliance, USAEC



NUCLEAR CONSULTANTS

DIVISION MAILINCKRODT CHEMICAL WORKS

[REDACTED]
[REDACTED]

Technologist No. 1

Technologist No. 2

[REDACTED]

Technician No. 1

Above is a list of individuals reported on our overexposure report dated November 14, 1966.



1966 FRACTIONAL PERMISSIBLE IODINE-131 THYROID BURDEN*

Technologist No. 1

Name

<u>PERIOD OF EXPOSURE</u>	<u>1/3/66-4/3/66</u>	<u>4/4/66-7/3/66</u>	<u>7/4/66-10/2/66</u>	<u>10/3/66-1/1/67</u>
	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
<u>WEEK STARTING</u>	<u>W.S.</u>	<u>W.S.</u>		<u>W.S.</u>
1/3	4/4	7/4		10/3 .98
1/10	4/11	7/11		10/10 1.49**
1/17	4/18	7/18		10/17 1.00**
1/24	4/25	7/25		10/24 1.02**
1/31	5/2	8/1		10/31 1.24**R1
2/7	5/9	8/8	.19	11/7 1.22***
2/14	5/16	8/15	.84	11/14
2/21	5/23	8/22	.85	11/21
2/28	5/30	8/29	.40	11/28
3/7	6/6	9/5	.88	12/5
3/14	6/13	9/12	.84	12/12
3/21	6/20	9/19	.92	12/19
3/28	6/27	9/26	.94	12/26

QUARTERLY AVERAGE

.73

*Fractional Permissible Thyroid Burden based on a permissible quarterly average thyroid burden of 0.14 microcuries of Iodine-131.

**Reportable on air concentration basis.

R1--Restricted from working in the I-131 tagging room.

**Gross hand contamination. Not reportable on air concentration basis.

/js

1/6/66

1966 FRACTIONAL PERMISSIBLE IODINE-131 THYROID BURDEN*

Technologist No. 2

Name

<u>PERIOD OF EXPOSURE</u>	<u>1/3/66-4/3/66</u>		<u>4/4/66-7/3/66</u>		<u>7/4/66-10/2/66</u>		<u>10/3/66-1/1/67</u>
	<u>1st Quarter</u>		<u>2nd Quarter</u>		<u>3rd Quarter</u>		<u>4th Quarter</u>
<u>WEEK STARTING</u>		<u>W.S.</u>		<u>W.S.</u>		<u>W.S.</u>	
1/3	2.20** R-1	4/4	.30 U	7/4	1.32**	10/3	.95
1/10	1.17**	4/11	1.05**	7/11	1.12***	10/10	1.19**
1/17	1.49**	4/18	.77	7/18	.63	10/17	1.28**
1/24	1.09**	4/25	1.11**	7/25	.42	10/24	.92
1/31	.83 U	5/2	1.21** R-3	8/1	.87	10/31	.79
2/7	1.40**	5/9	.81	8/8	Vacation	11/7	1.16**
2/14	2.02**	5/16	.82 U	8/15	Vacation	11/14	
2/21	1.24** R-2	5/23	.80	8/22	.40	11/21	
2/28	.92	5/30	.51	8/29	.75	11/28	
3/7	.27	6/6	.38	9/5	.96	12/5	
3/14	.13	6/13	.42	9/12	.86	12/12	
3/21	.04	6/20	.61	9/19	.67	12/19	
3/28	.04	6/27	.78	9/26	.70	12/26	
<u>QUARTERLY AVERAGE</u>							
	.99		.74		.79		

*Fractional Permissible Thyroid Burden based on a permissible quarterly average thyroid burden of 0.14 microcuries of Iodine-131.

**Reportable on air concentration basis.

***Restricted from all work with I-131.

R-1 Restricted from diagnostic capsule production.

/js R-2 Restricted entirely from laboratory Worked as health physics technician.

1/6/66 R-3 Restricted from work in the tagging room.

U Unrestricted.

1966 FRACTIONAL PERMISSIBLE IODINE-131 THYROID BURDEN*

Technician No. 1

Name

<u>PERIOD OF EXPOSURE</u>	<u>1/3/66-4/3/66</u>		<u>4/4/66-7/3/66</u>		<u>7/4/66-10/2/66</u>		<u>10/3/66-1/1/67</u>
	<u>1st Quarter</u>		<u>2nd Quarter</u>		<u>3rd Quarter</u>		<u>4th Quarter</u>
<u>WEEK STARTING</u>		<u>W.S.</u>		<u>W.S.</u>		<u>W.S.</u>	
1/3		4/4	.64 U	7/4	.96	10/3	.82
1/10		4/11	.45	7/11	.67	10/10	1.40**
1/17		4/18	.63	7/18	.77	10/17	2.43***
1/24	.13	4/25	.64	7/25	.90	10/24	1.31 "
1/31	.33	5/2	.33	8/1	2.88***	10/31	.85 "
2/7	.43	5/9	.62	8/8	2.47 R	11/7	1.55***
2/14	.64	5/16	1.59** R	8/15	1.23	11/14	
2/21	1.26**	5/23	.99	8/22	.90	11/21	
2/28	1.57**	5/30	.72 U	8/29	.45 (1)	11/28	
3/7	2.36**	6/6	.23	9/5	.23 (1)	12/5	
3/14	2.75**	6/13	.38	9/12	.45	12/12	
3/21	1.65**	6/20	.25	9/19	.49	12/19	
3/28	.87	6/27	1.39**	9/26	.34	12/26	
<u>QUARTERLY AVERAGE</u>							
	.92		.68		.98		

*Fractional Permissible Thyroid Burden based on a permissible quarterly average thyroid burden of 0.14 microcuries of Iodine-131.

**Reportable on air concentration basis.

R Restricted from diagnostic capsule production.

U Unrestricted.

/js *** Gross hand contamination. Not reportable on air concentration basis.

1/6/66 (1) Vacation. Weekly running average--extrapolated value.