



BOX 6172 LAMBERT FIELD • ST. LOUIS, MISSOURI 63145 • 314 AX 1-0540

December 18, 1967

Director, Division of Compliance
U. S. Atomic Energy Commission
1717 "H" Street
Washington, D.C. 20545

Dear Sir:

On June 5, 1967 routine thyroid measurements disclosed 2.28 times the permissible amount of ^{131}I , or 0.32 microcurie, in the vicinity of the thyroid gland of an individual. External contamination measurements indicated that this activity was external and fixed in the hair on the back of the individual's neck, and did not constitute an exposure to the thyroid gland. The last measured thyroid burden of this individual during the preceding week was zero. His only involvement with ^{131}I since the last measurement was in repair of the dispensing mechanism of the diagnostic capsule production machine on the Saturday of that week. He had since washed his hair, indicating that the residual activity was fixed. The total observed values were recorded to follow the decay and removal of the activity from the hair.

This individual is considered to be one of the most experienced, knowledgeable, and conscientious employees at Mallinckrodt/Nuclear, especially with regard to radiation safety practices and procedures. However, a joint effort on his part and that of the Health Physics Department did not reveal the cause of the contamination at that time.

In retrospect, we believe that the contamination had been deposited earlier in the week on the underside of the base cabinet by the operator of the diagnostic capsule machine under circumstances similar to those described in our letter dated October 5, 1967.

We were unaware of this situation at that time and assume that the individual who repaired the mechanism was contaminated by contact with this surface. However, subsequent preventative measures (described in our letter of October 5, 1967) have been put into effect and have prevented recurrence of the problem. These steps include:

1. Strict enforcement of the use of only qualified supervisors in making adjustments on the machine.

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions

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2. Use of headcovers and respirators during such adjustments.
3. Immediate check for thyroid burden or contamination following work on the machine.

Sincerely yours,

MALLINCKRODT/NUCLEAR

A handwritten signature in dark ink, reading "Donald W. Soldan". The signature is written in a cursive style with a large, stylized "D" and "S".

Donald-W. Soldan, Manager
Health Physics Department

DWS:cd

encl.

cc: Manager, Region III
Division of Compliance
U. S. Atomic Energy Commission
Suite 410 Oakbrook Professional Bldg.
Oak Brook, Illinois 60523

December 18, 1967

The individual referred to in this report is

[REDACTED]

Ex 6

MALLINCKRODT/NUCLEAR

1967 FRACTIONAL PERMISSIBLE IODINE-131 THYROID BURDEN*

<u>NAME</u>		<u>SOCIAL SECURITY NUMBER</u>				<u>IDENTIFICATION NUMBER</u>	
Omitted		Omitted					
<u>Period of Exposure</u>	<u>1/2/67-4/3/67</u>	<u>4/3/67-7/3/67</u>		<u>7/3/67-10/2/67</u>		<u>10/2/67-1/1/68</u>	
<u>Week Starting</u>	<u>1 st. quarter</u>	<u>W. S.</u>	<u>2nd quarter</u>	<u>W. S.</u>	<u>3rd quarter</u>	<u>W. S.</u>	<u>4th quarter</u>
1/2	.09	4/3	0	7/3	.00	10/2	.03
1/9	0	4/10	0	7/10	.00	10/9	.12
1/16	-	4/17	-	7/17	.07	10/16	.02
1/23	.04	4/24	0	7/24	.00	10/23	0
1/30	.10	5/1	0	7/31	.01	10/30	.14
2/6	-	5/8	0	8/7	-	11/6	.13
2/13	0	5/15	0	8/14	.00	11/13	.06
2/20	-	5/22	.12	8/21	-	11/20	.04
2/27	0	5/29	0	8/28	-	11/27	.01
3/6	-	6/5	2.28	9/4	.03	12/4	0
3/13	0	6/12	.99	9/11	.02	12/11	
3/20	0	6/19	.39	9/18	-	12/18	
3/27	-	6/26	.21	9/25	.10	12/25	
Quarterly Average	.02		.30		.02		

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