

Lockheed Martin Commercial Space Systems Newtown
License Renewal/Amendment
NRC # 37-02006-09
April 25, 2003

LOCKHEED MARTIN

April 25, 2003

Q-2

Ms. Elizabeth Ullrich
Nuclear Materials Safety Branch
US Nuclear Regulatory Commission: Region 1
476 Allendale Road
King of Prussia, PA 19406-1415

Subject: License Renewal
Amendment Application
Reference: License No. 37-02006-09
Docket No. 030-12894

Dear Ms. Ullrich,

Lockheed Martin Commercial Space Systems hereby submits an Application For Material License Form 313 with attachments for the purpose of renewal and amendment of license number 37-02006-09. The intent of the amendments is to 1) request a change regarding item 6B Thorium; 2) change of facility name; 3) permission to change the Radiation Safety Officer and Assistant Radiation Safety Officer position; 4) change in members of the Radiation Safety Committee, and authorized radioactive material users.

1. Please terminate present item 6B Thorium. Thorium is no longer handled at Lockheed Martin Commercial Space Systems in Newtown. Magnesium-thorium alloy materials have been shipped to the Lockheed Martin Facility located at 1111 Lockheed Martin Way, Sunnyvale, CA 94089. The California State License number is 0169-43, contact person is Donald Mercado, phone number (408) 742-0759. A Confirmation Close-Out Survey of the magnesium-thorium handling areas was completed by Porter Consultants on December 6, 2001. A copy of this report is included as attachment No 3.
2. The facility name, Lockheed Martin Corporation Communications and Power Center has been changed to Lockheed Martin Commercial Space Systems (LMCSS).
3. LMCSS requests permission to change the Radiation Safety Officer (RSO) to Richard J. Shaw, Senior Occupational Health & Safety Engineer, and to

133877

Lockheed Martin Commercial Space Systems Newtown
License Renewal/Amendment
NRC # 37-02006-09
April 25, 2003

T A B L E O F A T T A C H M E N T S

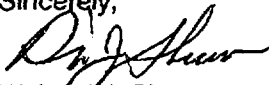
Lockheed Martin Commercial Space Systems Newtown
License Renewal/Amendment
NRC # 37-02006-09
April 25, 2003

change the previous RSO Sydney Porter, CHP to the Assistant Radiation
Safety Officer.

4. LMCSS request permission to change the members of the Radiation
Safety Committee (RSC) and radiation material users.

Should you have any questions or comments on these matters, please contact
me at phone (215) 497-1331.

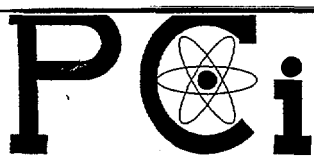
Sincerely,



Richard J. Shaw
Sr. Occupational Health & Safety Engineer

Enclosures

Cc: C. Krisch - LMCSS (w/o enclosures)
C. LumKong-LMCSS (w/o enclosures)
R. Herschitz - LMCSS (w/o enclosures)
S. Bean LM-VF
File 5.4



Porter Consultants, Inc.
125 Argyle Road
Ardmore, PA 19003-3201
Phone (610) 896-5353
FAX (610) 642-7804

PCI TR-465

Attachment No. 3

PCI-TR-465

"Confirmation Close-Out Survey Of The Lockheed Martin Mag-Thorium Panel Areas, Newtown, Pennsylvania"

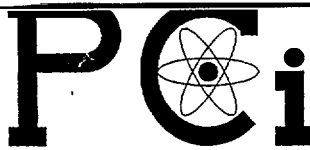
Dec. 6, 2001

Prepared for:

**Brad Heim,
Lockheed Martin Industrial Safety**

Prepared by:

S. W. Porter, Jr., CHP



Porter Consultants, Inc.

125 Argyle Road
Ardmore, PA 19003-3201
Phone (610) 896-5353
FAX (610) 642-7804

PCI TR-465

Confirmation Close-out Survey Of The Lockheed Martin Mag-Thorium Areas

A. INTRODUCTION

At the request of Brad Heim, on Sept. 22, 2001, PCI performed a series of surveys to determine if the rooms in the Lockheed Martin CPC where Mag-Thorium had been used could be unconditionally released from radiation protection restrictions. Detailed surveys and measurements were taken.

B. DESCRIPTION AND CLASSIFICATION OF BUILDING AREAS WHERE Mag-Thorium MATERIALS WERE UTILIZED.

AFFECTED: 1. Room 158A, including tables, work benches, cabinets, shelves, stands, and the outside of the absolute filter vacuum cleaner.

2. Room 179G. including tables, test benches, and thermal boxes.

POSSIBLY AFFECTED:

1. The hall area outside of both rooms.

C. OBJECTIVE OF SURVEY

The objective of this project is to perform a confirmatory survey of the rooms where the Mag-Thorium was utilized, to verify if radioactive material is present, that the residual radioactive contamination levels are below those specified in the USNRC Regulatory Guide 1.86, "Guidelines For Decontamination Of Facilities And Equipment Prior To Release For Unrestricted Use Or Termination Of Licenses For Byproduct, Source, Or Special Nuclear Material."

D. INSTRUMENTATION FOR RAD SURVEYS (REF: NUREG/CR-5849)

a. Surface/Area Scans for Gamma: A Ludlum Survey Meter Model 19, Serial # 77635, calibrated on Oct. 3, 2001.

The detection sensitivity is 100 % for Thorium Daughter gammas.

b. Gross Alpha on Smears: A Zinc Sulfide- PM Tube detector, Johnson Model ASP-2A, Serial # 973 in a three inch Pb shield, connected to a SAM-2 scaler, Serial # 569. The detection sensitivity (17 % for Thorium-230) yields an MDA far less than 20 d/m/100cm squared.

E. SURVEYS OF AFFECTED AREAS

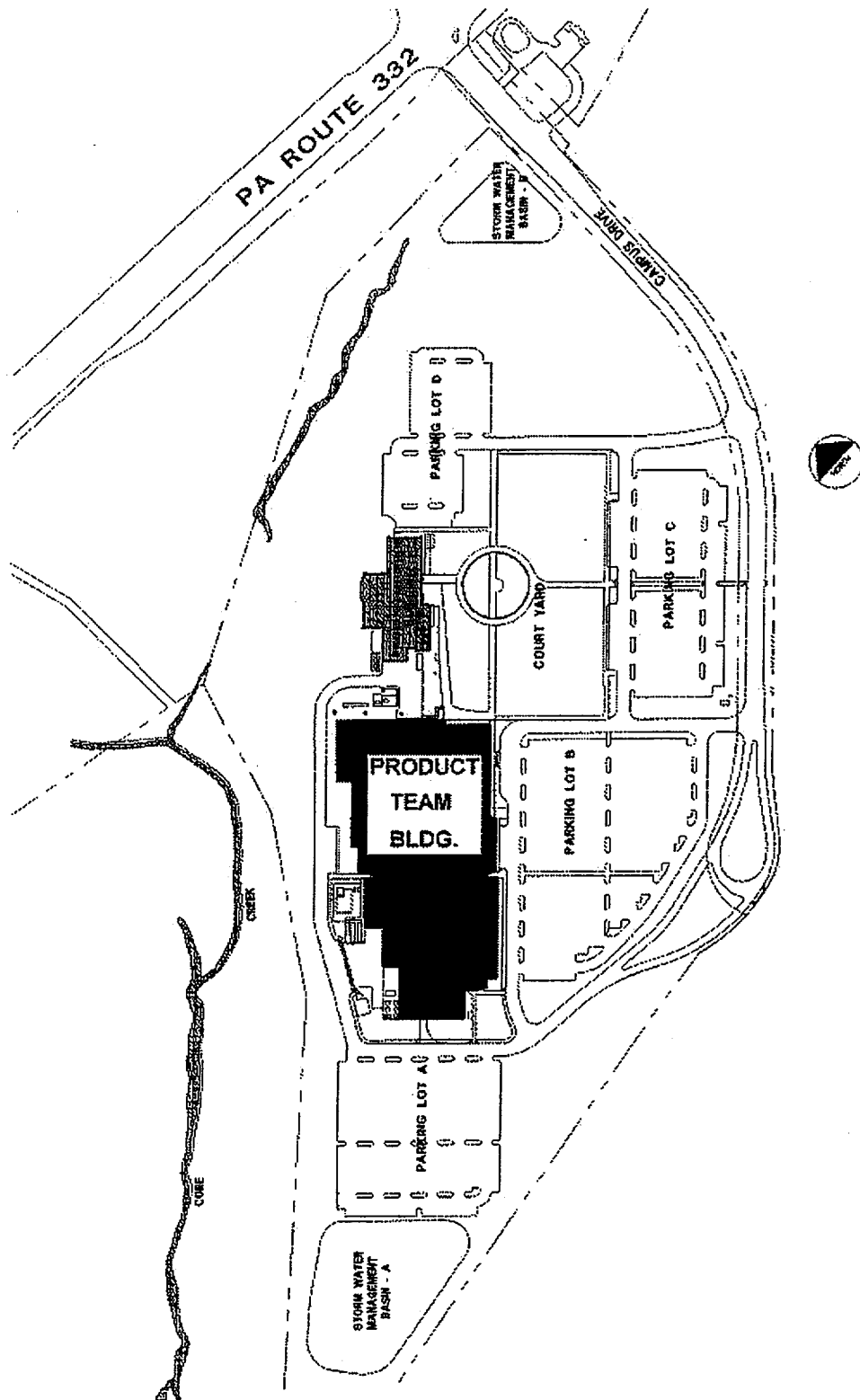
All of the affected areas were carefully surveyed for gamma radiation as well as being smeared for both removable alpha activity. The hallways were also checked for gamma.

The following attachments (A-C) indicate the detailed locations of Surveys, as well as the actual gamma levels.

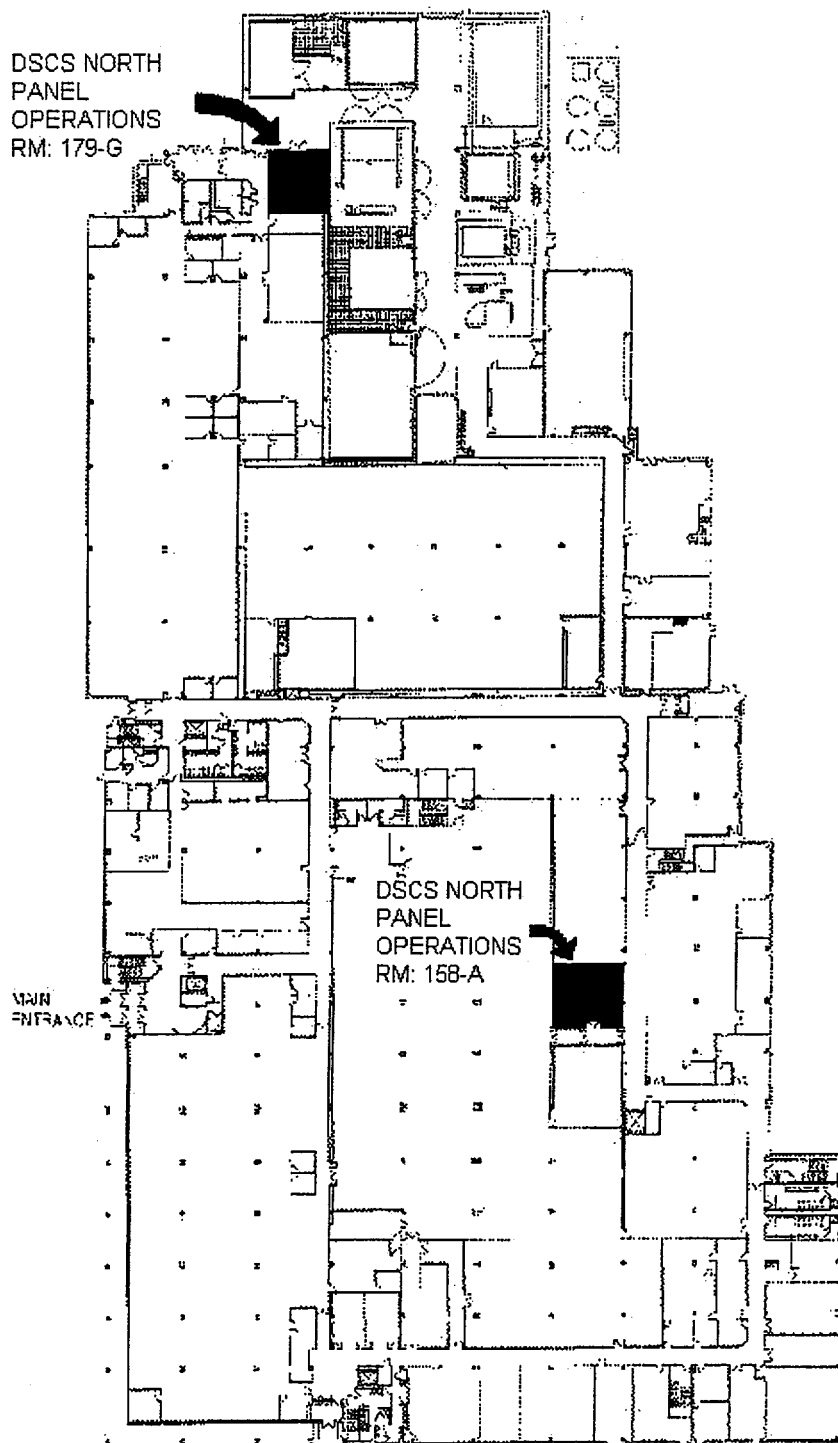
Attachment A: Overall Maps of Known & Suspected Rad Mat Use Areas

Attachment B: Removable contamination in Room 158A (44 Smear Survey Locations)

Attachment C: Removable contamination in Room 179G (15 Smear Survey Locations).



LMCSS Newton Site
Product Team Building



Magnesium Thorium Handling Areas shaded in **BLACK**



Porter Consultants, Inc.

125 Argyle Road
Ardmore, PA 19003-3201
Phone (610) 896-5353
FAX (610) 642-7804

PCI TR-465

F. SUMMARY OF RESULTS

<u>Type</u>	<u>Allowable</u>		<u>Results Found</u>	
	Avg	Max	Avg	Max
(above bkgr	20 μ R/hr		All within normal range	bkgr range
α Removable	20 d/m/100cm ²	60 d/m/100cm ²	1 d/m/100 sq. cm;	<3 d/m/100 sq. cm
β Removable	1000 d/m/100cm ²	3000 d/m/100cm ²	N/A	
α Fixed	100 d/m/100cm ²	300 d/m/100cm ²	N/A	
β Fixed	5000 d/m/100cm ²	15000 d/m/100cm ²	N/A	

NOTE: REFER TO ATTACHMENTS B & C for actual SMEAR COUNT RESULTS.

G. CONCLUSIONS

Decontamination efforts have been successful in lowering the few above background readings to well below the allowable contamination limits. This Facility is ready to be released for Unrestricted Use .



Porter Consultants, Inc.
125 Argyle Road
Ardmore, PA 19003-3201
Phone (610) 896-5353
FAX (610) 642-7804

PCI Form 13
Updated 4.9.99

Smear Counting Log

Customer: LOCKHEED-NEWTOWN

Site: ROOM 158A

Scaler: Model: SAM-2 Ser. #: 569 Cal. Date:

α Detector: Model: ASP-2A Ser. #: 973 Cal. Date:

β Detector: Model: GP-200 Ser. #: 658 Cal. Date:

Bkg. for α = 0.2 c/m Eff. for α = 17 %

Smear Location: Surfaces - Thorium Alpha

Bkg. for β = 13c/m Eff. for β = 11%

Smear Location: Smears taken 8/22/01

Smear #	Counts/10min	Gross cpm	Bkg cpm	Net cpm	Net dpm	Cleanup Criteria Exceeded /Results
α 1	1	0.1	0.2	0	0	NO
β 2	1	0.1	0.2	0	0	"
α 3	3	0.3	0.2	0.1	0.6	"
β 4	2	0.2	0.2	0	0	"
α 5	1	0.1	0.2	0	0	"
β 6	4	0.4	0.2	0.2	1.2	"
α 7	2	0.2	0.2	0	0	"
β 8	1	0.1	0.2	0	0	"
α 9	2	0.2	0.2	0	0	"
β 10	2	0.2	0.2	0	0	"
α 11	2	0.2	0.2	0	0	"
β 12	4	0.4	0.2	0.2	1.2	"
α 13	1	0.1	0.2	0	0	"
β 14	1	0.1	0.2	0	0	"
α 15	1	0.1	0.2	0	0	"
β 16	4	0.4	0.2	0.2	1.2	"
α 17	2	0.2	0.2	0	0	"
β 18	2	0.2	0.2	0	0	"
α 19	1	0.1	0.2	0	0	"
β 20	5	0.5	0.2	0.3	1.8	"
α 21	6	0.6	0.2	0.4	2.4	"
β 22	2	0.2	0.2	0	0	"
α 23	1	0.1	0.2	0	0	"
β 24	2	0.2	0.2	0	0	"

NBS Traceable α Std: Th-230, 15,100d/m. 10 min count = 25,040 = 2,504 c/m = 17% eff.

NBS Traceable β Std: Bi-210, 25,000 d/m. 10 min. count = 27,415 = 2,742 c/m = 11% eff.

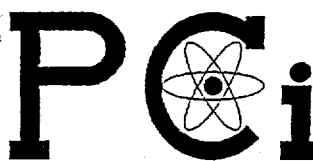
SW Porter
Tech Signature

11/28/01
Date

PennoniSmrCnt4.9.99

$$\begin{aligned} L_D &= 3 + 4.65\sqrt{B} \\ &= 3 + 4.65\sqrt{\frac{.2}{10}} \\ &= 3 + 4.65(0.1414) = 3.7 \end{aligned}$$

$$MDA = \frac{3.7}{.17} = 21.5 \text{ dpm}$$



Porter Consultants, Inc.
125 Argyle Road
Ardmore, PA 19003-3201
Phone (610) 896-5353
FAX (610) 642-7804

PCI Form 15
Updated 4.9.99

Smear Counting Log

Customer: LOCKHEED-NEWTOWN

Site: Room 15-B-A (Cont.)

Scaler: Model: SAM-2 Ser. #: 569 Cal. Date:

α Detector: Model: ASP-2A Ser. #: 973 Cal. Date:

β Detector: Model: GP-200 Ser. #: 658 Cal. Date:

Bkg for α = 0.2 c/m Eff. for α = 17 %

Smear Location: Surfact - Thorium Alpha

Bkg for β = 13c/m Eff. for β = 11%

Smear Location: _____

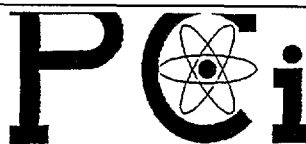
Smear #	Counts/10min	Gross cpm	Bkg cpm	Net cpm	Net dpm	Cleanup Criteria Exceeded /Results
α 25	2	0.2	0.2	0	0	NO
β 26	1	0.1	0.2	0	0	"
α 27	2	0.2	0.2	0	0	"
β 28	2	0.2	0.2	0	0	"
α 29	5	0.5	0.2	0.3	1.8	"
β 30	6	0.6	0.2	0.4	2.4	"
α 31	1	0.1	0.2	0	0	"
β 32	1	0.1	0.2	0	0	"
α 33	4	0.4	0.2	0.2	1.2	"
β 34	2	0.2	0.2	0	0	"
α 35	1	0.1	0.2	0	0	"
β 36	1	0.1	0.2	0	0	"
α 37	1	0.1	0.2	0	0	"
β 38	3	0.3	0.2	0.1	0.6	"
α 39	5	0.5	0.2	0.3	1.8	"
β 40	4	0.4	0.2	0.2	2.2	"
α 41	4	0.4	0.2	0.2	1.2	"
β 42	3	0.3	0.2	0.1	0.6	"
α 43	1	0.1	0.2	0	0	"
β 44	2	0.2	0.2	0	0	"
α						
β						
α						
β						

NBS Traceable α Std: Th-230, 15,100d/m. 10 min count = 25,040 = 2,504 c/m = 17% eff.

NBS Traceable β Std: Bi-210, 25,000 d/m. 10 min. count = 27,415 = 2,742 c/m = 11% eff.

Tech Signature

Date



Porter Consultants, Inc.

125 Argyle Road
Ardmore, PA 19003-3201

Phone (610) 896-5353

FAX (610) 642-7804

Smear Counting Log

Customer: LOCKHEED-NEWTOWNSite: ROOM 17.9 G

Scaler: Model: SAM-2 Ser. #: 569 Cal. Date:

 α Detector: Model: ASP-2A Ser. #: 973 Cal. Date: β Detector: Model: GP-200 Ser. #: 658 Cal. Date:Bkg. for α = 0.2 c/m Eff. for α = 17 %Smear Location: Surface - Thorium AlphaBkg. for β = 13 c/m Eff. for β = 11 %Smear Location: Smears taken on 8/22/01

Smear #	Counts/10min	Gross cpm	Bkg cpm	Net cpm	Net dpm	Cleanup Criteria Exceeded /Results
α A	3	0.3	0.2	0.1	0.6	NO
β						
α B	4	0.4	0.2	0.2	1.2	"
β						
α C	4	0.4	0.2	0.2	1.2	"
β						
α D	5	0.5	0.2	0.3	1.8	"
β						
α E	4	0.4	0.2	0.2	1.2	"
β						
α F	5	0.5	0.2	0.3	1.8	"
β						
α G	1	0.1	0.2	0	0	"
β						
α H	1	0.1	0.2	0	0	"
β						
α I	3	0.3	0.2	0.1	0.6	"
β						
α J	4	0.4	0.2	0.2	1.2	"
β K	4	0.4	0.2	0.2	1.2	"
α L	1	0.1	0.2	0	0	"
β M	2	0.2	0.2	0	0	"
α N	2	0.2	0.2	0	0	"
β O	1	0.1	0.2	0	0	"

NBS Traceable α Std: Th-230, 15,100d/m. 10 min count = 25,040 = 2,504 c/m = 17% eff.NBS Traceable β Std: Bi-210, 25,000 d/m. 10 min. count = 27,415 = 2,742 c/m = 11% eff.

Tech Signature

PennoniSmrCnt4.9.99

Date

12/1/01

BETWEEN:

License Fee Management Branch, ARM
and
Regional Licensing Sections

: (FOR LFMS USE)
: INFORMATION FROM LTS
: -----
:
: Program Code: 11300
: Status Code: 2
: Fee Category: 3E 2C 3M
: Exp. Date: 20030531
: Fee Comments: _____
: Decom Fin Assur Req'd: Y
: ::::::::::::::::::::::::::::::::::::::

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED

Applicant/Licensee: LOCKHEED MARTIN CORPORATION
Received Date: 20031027
Docket No: 3012894
Control No.: 133877
License No.: 37-02006-09
Action Type: Amendment

2. FEE ATTACHED

Amount: _____
Check No.: /

3. COMMENTS

Signed M.A. Perkins
Date 10/28/2003

B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered /__/_/)

1. Fee Category and Amount: _____

2. Correct Fee Paid. Application may be processed for:

Amendment _____
Renewal _____
License _____

3. OTHER _____

Signed _____
Date _____