

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

LOCKHEED MARTIN

May 23, 2003

Ms. Sheryl Villar
Team Leader
Licensing Assistance Team
Division of Nuclear Materials Safety
US Nuclear Regulatory Commission: Region 1
475 Allendale Road
King of Prussia, PA 19406-1415

Q-2

Subject: Changes to Submitted License Renewal & Amendment Application

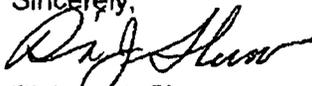
Reference: License No. 37-02006-09
Docket No. 030-12894
Control No. 133106

Dear Ms. Villar

As a result of technical review, attached is the License Renewal and Application Document with requested changes.

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

133106

F16

NMSS/53NI MATERIALS-002

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

LOCKHEED MARTIN

April 25, 2003

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

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

TARI F OF ATTACHMENTS

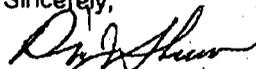
Lockheed Martin Commercial Space Systems Newtown
License Renewal/Amendment
NRC # 37-02006-09
April 25, 2003

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

NRC FORM 313 (10-2002) 10 CFR 30.32, 33, 34, 35, 38, 39, and 40	U.S. NUCLEAR REGULATORY COMMISSION	APPROVED BY OMB: NO. 3150-0120 Estimated burden per response to comply with this mandatory collection request: 7 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Send comments regarding burden estimate to the Records Management Branch (T-5 EB), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.	EXPIRES: 10/31/2005
APPLICATION FOR MATERIAL LICENSE			

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH: DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS U.S. NUCLEAR REGULATORY COMMISSION WASHINGTON, DC 20555-0001 ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS: IF YOU ARE LOCATED IN: CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO: LICENSING ASSISTANT SECTION NUCLEAR MATERIALS SAFETY BRANCH U.S. NUCLEAR REGULATORY COMMISSION, REGION I 475 ALLENDALE ROAD KING OF PRUSSIA PA 19406-1415 ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO: SAM NUNN ATLANTA FEDERAL CENTER U. S. NUCLEAR REGULATORY COMMISSION, REGION II 81 FORSYTH STREET, S.W., SUITE 23785 ATLANTA, GEORGIA 30303-8931 PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTIONS.	IF YOU ARE LOCATED IN: ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO: MATERIALS LICENSING BRANCH U.S. NUCLEAR REGULATORY COMMISSION, REGION III 801 WARRENVILLE RD LISLE, IL 60532-4351 ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, OR WYOMING, SEND APPLICATIONS TO: NUCLEAR MATERIALS LICENSING SECTION U.S. NUCLEAR REGULATORY COMMISSION, REGION IV 611 RYAN PLAZA DRIVE, SUITE 400 ARLINGTON, TX 76011-8084
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030-12894

X

1. THIS IS AN APPLICATION FOR (Check appropriate item) <input type="checkbox"/> A. NEW LICENSE <input checked="" type="checkbox"/> B. AMENDMENT TO LICENSE NUMBER <u>37-02006-09</u> <input checked="" type="checkbox"/> C. RENEWAL OF LICENSE NUMBER <u>37-02006-09</u>	2. NAME AND MAILING ADDRESS OF APPLICANT (Include ZIP code) Lockheed Martin Commercial Space Systems 100 Campus Drive Newtown, Pa 18940
3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED Lockheed Martin Radiation Effects Laboratory 230 Mall Blvd. Building 100, Room M8820 King of Prussia, Pa 19406	4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION Richard J. Shaw TELEPHONE NUMBER (215) 497-1331

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE

5. RADIOACTIVE MATERIAL a. Element and mass number; b. chemical and/or physical form; and c. maximum amount	6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.
7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.	8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.
9. FACILITIES AND EQUIPMENT.	10. RADIATION SAFETY PROGRAM.
11. WASTE MANAGEMENT.	12. LICENSE FEES (See 10 CFR 170 and Section 170.31) FEE CATEGORY: <u>3</u> AMOUNT ENCLOSED: <u>3</u>

13. CERTIFICATION. (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39, AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO

CERTIFYING OFFICER -- TYPED/PRINTED NAME AND TITLE Charles G. Krisch, Vice President	SIGNATURE 	DATE 9/29/2003
--	----------------------	--------------------------

FOR NRC USE ONLY					
TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
			3		
APPROVED BY				DATE	133106

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

Attachment No. 2

Renewal Summary

Lockheed Martin Corporation, Commercial Space Systems Newtown hereby submits NRC Form 313 Application For Material License for the purpose of license renewal/amendment, including changing the RSO and Assistant RSO, changing the licensee name, changing RSC members and authorized users.

Please delete item 6B Thorium from license number 37-02006-09. Confirmation Close-Out Survey of the LMCSS magnesium-thorium panel a.3a is Attachment 3. Please remove rooms 158A and 179G from the authorized RAM use locations.

The radioactive materials used at both the Newtown (exempt Cesium 137 sources); and Valley Forge sites will be under the control of the Radiation Safety Committee, a Radiation Safety Officer, an Assistant Radiation Safety Officer, and one set of Standard Operating Procedures. The details of this requested license renewal/amendment are enclosed.



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



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."

□



123 MAGYIC ROAD
Ardmore, PA 19003-3201
Phone (610) 896-5353
FAX (610) 642-7804

PCI TR-465

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

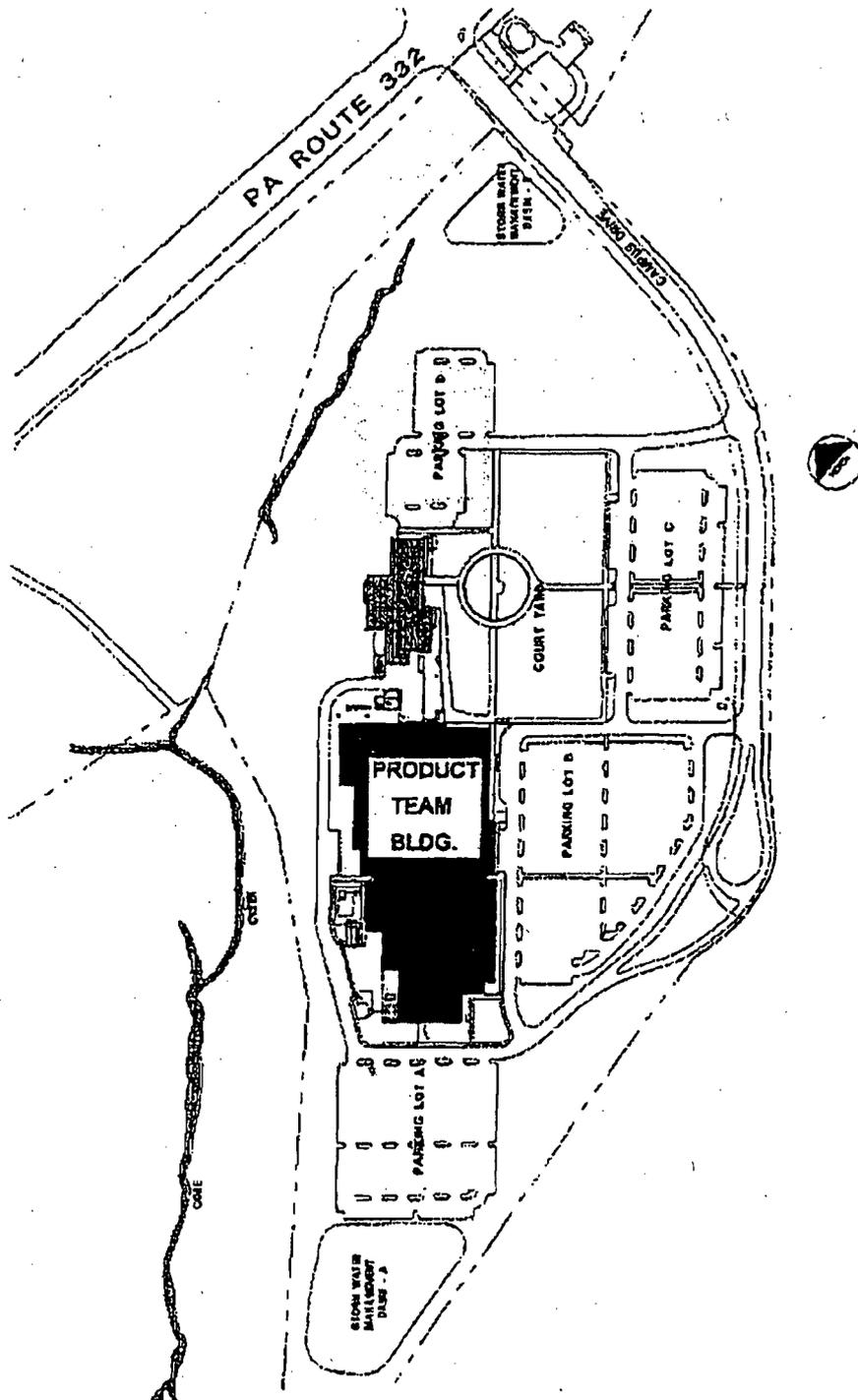
All of the affected areas were carefully surveyed for gamma radiation as well as being smeared for both removable alpha activity. The hallways were also checked for gamma.

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

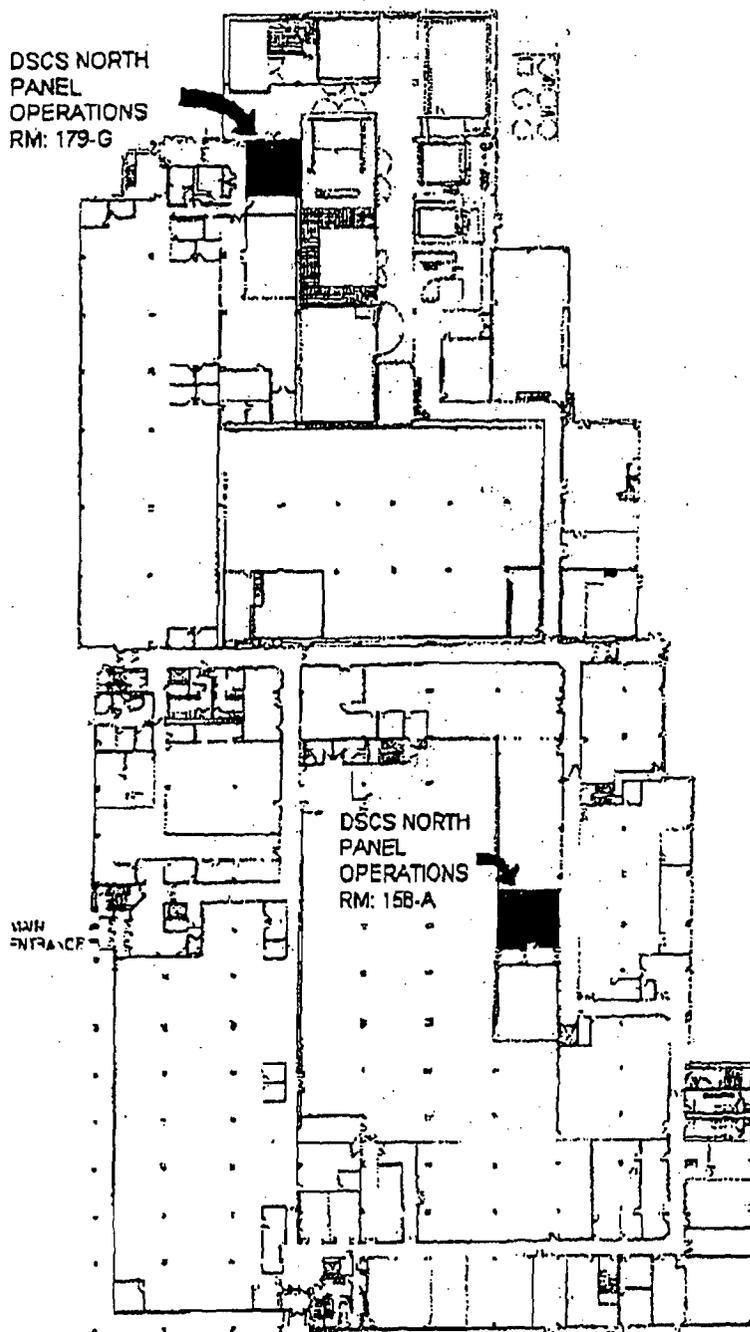
Attachment B: Removable contamination in Room 158A (44 Smear Survey Locations)

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



LMCSS Newton Site
Product Team Building

DSCS NORTH
PANEL
OPERATIONS
RM: 179-G



Magnesium Thorium Handling Areas shaded in BLACK



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>	
	<u>Avg</u>	<u>Max</u>	<u>Avg</u>	<u>Max</u>
(above bkgr	20 cp 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 .



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

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: Surface - Thorium Alpha

Bkg for β = 13c/m Eff. for β = 11%

Smear Location: Smears taken 8/22/01

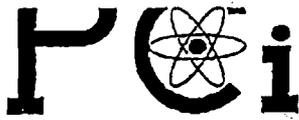
Smear #	Counts/10min	Gross cpm	Bkg cpm	Net cpm	Net dpm	Cleanup Criteria Exceeded / Results
α 1	1	0.1	0.2	0	0	NO
β 2	1	0.1	0.2	0	0	"
α 3	3	0.3	0.2	0.1	0.6	"
β 4	2	0.2	0.2	0	0	"
α 5	1	0.1	0.2	0	0	"
β 6	4	0.4	0.2	0.2	0.2	"
α 7	2	0.2	0.2	0	0	"
β 8	1	0.1	0.2	0	0	"
α 9	2	0.2	0.2	0	0	"
β 10	2	0.2	0.2	0	0	"
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.

SM P. [Signature]
Tech Signature

8/29/01
Date

Pennoni SmrCnt4.9.99



125 Argyle Road
Ardmore, PA 19003-3201
Phone (610) 896-5353
FAX (610) 642-7864

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: Surfaces - 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: *SW. P...*

Date: 12/1/01

PcanoniSmrCnt4.9.99



ALL INFORMATION
Ardmore, PA 19003-3201
Phone (610) 896-5353
FAX (610) 642-7804

Smear Counting Log

Customer: LOCKHEED-NEWTOWN

Site: ROOM 17.9E

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 Alpha

Bkg for β = 13c/m Eff. for β = 11%

Smear Location: Smears taken on 8/27/01

Smear #	Counts/10min	Gross cpm	Bkg cpm	Net cpm	Net dpm	Cleanup Criteria Exceeded / Results
α A	3	0.3	0.2	0.1	0.1	ND
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.

S.W. Porter, Jr.
Tech Signature

12/1/01
Date

Pennoni Srv Cmt 4.9.99

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

Attachment No. 4

**List of Radioactive Sources, including
 Maximum Form and Maximum Amount
 For Inclusion on License No. 37-02006-09**

Element and Mass Number	Chemical and/or Physical Form	Maximum Activity per Source and Total	Facility Where Material is Stored and Used	Comments
Any byproduct material with atomic numbers 3 through 83 inclusive	Neutron-irradiated electronic components	200 microcuries per component and 100 millicuries total	Lockheed Martin Valley Forge Space Center	Non destructive evaluation of radiation effects
Cobalt 60	Sealed sources (AECL) Capsule Model C-166, C-167, or C-198)	(b)(4) curies per source and curies total	Lockheed Martin Valley Forge Space Center	For use in AECL Model Gamma Cell 220 irradiator

5/2/03

Attachment No. 5

Statement of Purpose for Use of Licensed Material

LMCSS uses licensed material for the overall purpose of research and development as defined in 10 CFR 30.4 and manufacturing related to missile and space programs.

The uses include:

- The Neutron-Irradiated Electronic Components will be used for nondestructive evaluation of radiation effects following reactor exposure.
- The Cobalt 60 is currently being used in two AECL Model 220 Gamma Cells for irradiation of material. The purpose is to determine the effects of radiation on spacecraft material from simulation of cosmic radiation.

Attachment No. 6

Radiation Safety Committee Members & RSO Resume

Before obtaining licensed materials, the proposed RSO will have successfully completed the training described in Appendix G in NUREG – 1556, Vol 5, dated October 1998. Before being named as the RSO, future RSO's will have successfully completed the training described in Appendix G in NUREG – 1556, Vol. 5, dated October 1998. Within 30 days of naming a new RSO, we will submit the RSO's name to NRC for inclusion in our license.

Name	Title	RSC Designation
Roman Herschitz, PhD	Manager, Specialty Engineering Department LMCSS	Chairman Member
Clare Lumkong	Manager, ESH LMSSC	Assistant Chairman Member
Richard J. Shaw	Senior Occupational Health & Safety Engineer Proposed RSO (proposed) LMSSC, M&DS Valley Forge	Secretary RSO (proposed) Member
Scott Bean	Staff Occupational Safety & Health Analyst M&DS Valley Forge ESH	Member
Mark W. MacGregor	Payload Power Specialist LMCSS Antenna	Member
Sydney Porter, CHP	Assistant Radiation Safety Officer for MCSS, M&DS Valley Forge	Assistant RSO Member
Larry Bruccoliere	Test Engineer LMCSS Valley Forge Survivability Engineering	Member
Robert Horton	Supervisor Failure Analysis X-Ray LMCSS	X-Ray Advisor

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

RICHARD J. SHAW

Proposed RSO

*Senior Occupational Health & Safety Engineer
Environmental, Safety & Health Component
Lockheed Martin Commercial Space Systems, Newtown*

Radiation Education and Certification Coursework:

- MS - Environmental Health; Temple University, Philadelphia, PA
Health Physics; Summer Semester, 1995 – graduated 1996
- 40 Hour Radiation Safety Officer Training Course – CSI Radiation Safety Academy,
Gaithersburg, Maryland, April 8-12, 2002
- U.S. Army Officer (74A) - attended Chemical School, Ft McClellan, Al. Nuclear
Weapons Effects, Radiation Safety Training, September 1983 to February 1984.

Experience:

*Lockheed Martin Commercial Space Systems Newtown
100 Campus Drive
Newtown, PA 18940
April, 2002 – Present*

Duties include:

- Maintain the LMCSS Radiation Safety Program to include training, standard operating
procedures, employee exposure monitoring, surveys, leak testing, and equipment calibration.
- Renewal and Amendment of the NRC license held by LMCSS.
- Support the X-ray safety program which includes reviewing standard operating
procedures, conducting audits and inspections for failure analysis x-ray equipment
and equipment for non-destructive testing, and use of a 3.5 MeV flash X-ray.
- Coordinator and member of the Radiation Safety Committee.

Sydney W. Porter, Jr., CHP

Sydney W. Porter, Jr., CHP
Professor, Adjunct, Drexel University, Graduate School of Environmental Sciences
Diplomat: American Academy of Health Physics
Elected Fellow: Health Physics Society in 1997

Summary:

Over 40 years of experience in the fields of health physics, radiation dosimetry (including Radon), radiological environmental monitoring, emergency planning, nuclear engineering, radiation dosimetry and radiochemistry; certified by the American Board of Health Physics, (comprehensive practice) in 1966, recertified every four years; Elected President of the Health Physics Society Radon Section; Past President and founder of the Eastern PA Chapter of American Association of Radon Scientists and Technologist, Inc (AARST); Past President of National AARST, 1991-1992

Health Physics Audit Experience:

Mr. Porter has over 40 years of experience in professional power reactor Health Physics, including seven years experience as a member of the US Department of Defense Reactor Inspector General's Team. He has performed over thirty-five audits on pressurized water power reactors, plus numerous audits on boiling water reactors, high temperature gas cooled reactors and sodium-cool reactors, as well as research and testing reactors. He has also many years' experience in dose calculations from radionuclide releases as well as the design and implementation of radiological environmental monitoring programs (both on and off facility types); and also with installation; calibration and use of installed radiation-monitoring systems.

Mr. Porter has investigated over twenty suspected overexposure incidents and performed detailed dosimetry assessments, as well as having taught over forty two-day Dosimetry/Hot Particle Assessment classes (28 continuing education credits from the American Board of Health Physics). An important part of this class is a detailed appraisal of the existing dosimetry programs and procedures.

Research and Testing Reactor Audits include the Martin Nuclear Division APPR Prototype as well as the TRIGA mark1 (1600 MW pulse) – All radiation safety procedures, including radionuclide production operations, hot cell operations, stack monitor design and implementation. Special Department of Defense Site Audits include a Bormarc Missile Site – Assessment of a Broken Arrow incident (plutonium contamination). Technologically Enhanced Natural Occurring Radioactive Material Audits include Radium Dial Painting Facilities, Thorium in Glass Factory and Burial Ground, Radium Separation Factory, Lansdowne, PA, Radium Tailings in Private Homes, Orange, NJ, US Radium Corp. spoils site and Quehanna D&D site. University audits include University of Pennsylvania, Temple University and Drexel University. Dozens of large and small laboratory site have been audited.

Certifications:

Comprehensive certification in health physics (CHP) by the American Board of Health Physics in 1967. Re-certified in 1981, 1985, 1989, 1993, 1997 (through 2001).

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Certification in the EPA Radon Measurement Proficiency Program, 1991 to present.
Pennsylvania State (department of Environmental Protection) Radon Testing,
Certification #0004.

Experience:

1974-Present: President, Porter Consultants, Inc.

Responsibilities: include design, measurement, management, evaluation, implementation, calculation or control of the following areas: environmental radioactivity, power reactor health physics, environmental radiological dose assessment, radiation hazard surveys, emergency planning and occupation and medical radiation exposure. From 1979-1982 was Head, Radio-effluent and Dose Assessment Section, Three Mile Island Nuclear Station (all TMI accident related). Also responsible for the Radiological Environmental Monitoring Program at TMI. Responsible for a broad range of radiation dosimetry assignments (both external and internal) during both routine and emergency conditions. Radiation Dosimetry Consultant to the states of Pennsylvania, New Jersey, Delaware and Iowa.

1969-1974: Vice President of Health Physics Operations; Co founder of Radiation management

Corporation (RMC) in Philadelphia, PA

1963-1969: Head Radiological Safety Department, Armed Forces Radiobiology Research Institute (AFRRI) in Bethesda, MD

1957-1963: Assistant Coordinator, then Coordinator of Health Physics, Electric Boat Co., General Dynamics Corporation in Groton, CT

Education:

St Johns College, MD-BS, Physical Sciences, (b)(6)
John Hopkins University - Graduate studies in Physical Chemistry, 1956
New York University - Graduate studies in Radiochemistry

Professional Organizations:

American Association of Radon Scientists and Technologists – President (1991-1992)
Air Pollution Control Association
American Association of Physicists in Medicine
American Chemical Society
American Industrial Hygiene Association
American Nuclear Society
American Physical Society
American Society of Testing Materials
Health Physics Society – Charter Member,

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Past president of two chapters, President Radon Section
Society for Risk Analysis – Charter Member
Society of Radiation Protection (UK)

Publications:

Published over thirty peer reviewed journal articles, books and guides relating to health physics, radiation dosimetry, emergency planning, environmental impact and radiological environmental subjects. Over three hundred Technical Reports produced for customers over the past twenty-five years.

Attachment No. 7

**Authorized Radioactive Materials Users (Principle Investigators)
Resumes of the Principle Investigators**

Before using licensed materials, authorized users will receive the training described in Appendix G in NUREG – 1556, Vol. 5, dated October 1998.

Name	Title	Radioactive Material
Larry Bruccoliere	Engineering Specialist LMCSS Valley Forge	Neutron irradiated electronic components; Cobalt 60
Stephen K. Moyer	Engineering Specialist LMCSS Valley Forge	Neutron irradiated electronic components; Cobalt 60

Larry Bruccoliere

(W) 610-354-5902

larry.j.bruccoliere@lmco.com

TITLE: Test Engineer

SUMMARY: Extensive experience in the production and testing of electronic parts in a radiation environment. Expertise in the improvement of production, testing and data presentation techniques through the use of computers. Attention to all details and excellent organizational skills. Strong background in testing, leadership, and creative problem solving.

EXPERIENCE: Lockheed Martin Corp. 1974 to Present

1/82 to Present – Specialty Engineering – Test Engineer

Responsibilities:

Conduct EMC / EMI testing per program requirements.
Responsible for the maintenance and operation of two Radiation Sources.
Radiation testing of electronic parts in neutron, gamma ray, and flash x-ray environments.
Design and build circuits for radiation exposures.
Program and setup a wide assortment of automated test equipment to perform parametric testing of electronic devices.
Organize and maintain Labs test database on Lockheed Martin's server.
Property Manager for Specialty Engineering.
Write Purchase Orders for supplies and equipment.
Interface with outside test laboratories for neutron testing.
Interface with outside customers dealing with specialized test and support.
Maintain accurate documentation of radioactive components for both the Nuclear Regulatory Commission and Environmental Health and Safety.
Receives yearly radiation safety training to perform duties.

11/79 to 1/82 - Systems Test - Test Conductor

Responsibilities:

Spacecraft Test Conductor on the DSCS Vehicle.
Responsible for setup and running simulation test using automated test equipment.
Assumed responsibility for meeting schedule goals.
Allocated time according to shift change.

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4/79 to 11/79 - RF Laboratory – RF Test Technician
Responsibilities:

Initiated the development of special test fixtures for GaAs FET's.
Monitor and run high temperature life test.
Conduct and schedule testing of over 500 FET's.

2/77 to 4/79 - Engineering Ground Support – Test Technician
Responsibilities:

Check out and test manufacturing panels.
Troubleshoot and repair of Ground Station Equipment.
Make instantaneous wiring modifications and maintain accurate documentation.

6/74 to 2/77 - Parts & Micro-Electronics Lab. - Test Technician
Responsibilities:

Run a wide variety of mechanical and electrical tests on electronic parts and hybrids.
Perform life test, including shock, acceleration, and burnout.
Troubleshoot and diagnose problems on micro-electronic boards.
Operator of a hybrid x-ray machine.

Education: Camden County Technical School
Sicklerville, NJ
Associates Degree

Stephen K. Moyer

Stephen K. Moyer
Engineering Specialist
Specialty Engineering, LMCSS, Valley Forge, PA

Education:

EE, BSEET, Ohio Institute of Technology, Columbus, Ohio

Radiation Training:

Radiation Safety Training for Authorized Radiation Users (9/99)

Experience:

Lockheed Martin Corp, Newtown, PA (1984 to present)
Test Engineering Specialist

Coordinates radiation testing of electronic parts in neutron, gamma ray, cosmic ray, and flash x-ray environments. Design and develop circuits and software for the radiation exposure performance testing of all in-house electronics.

Design and conduct heavy-ion testing at Brookhaven National Laboratory to simulate cosmic ray effects in space.

Design and conduct gamma ray and flash x-ray testing at LMMS Radiation Test Facility in King of Prussia, PA. Testing includes developmental parametric studies as well as production radiation hardness assurance testing.

Principal Investigator (PI) responsible for radiation safety in the LMMS Radiation Test Facility. Receives yearly training to perform duties.

Attachment No. 8

Facilities and Equipment

LMCSS has facilities, storerooms and equipment for the proper utilization and control of radioactive materials at the Valley Forge, Pennsylvania sites. Site maps have been provided in the following pages identifying the locations where the radioactive materials are used and stored.

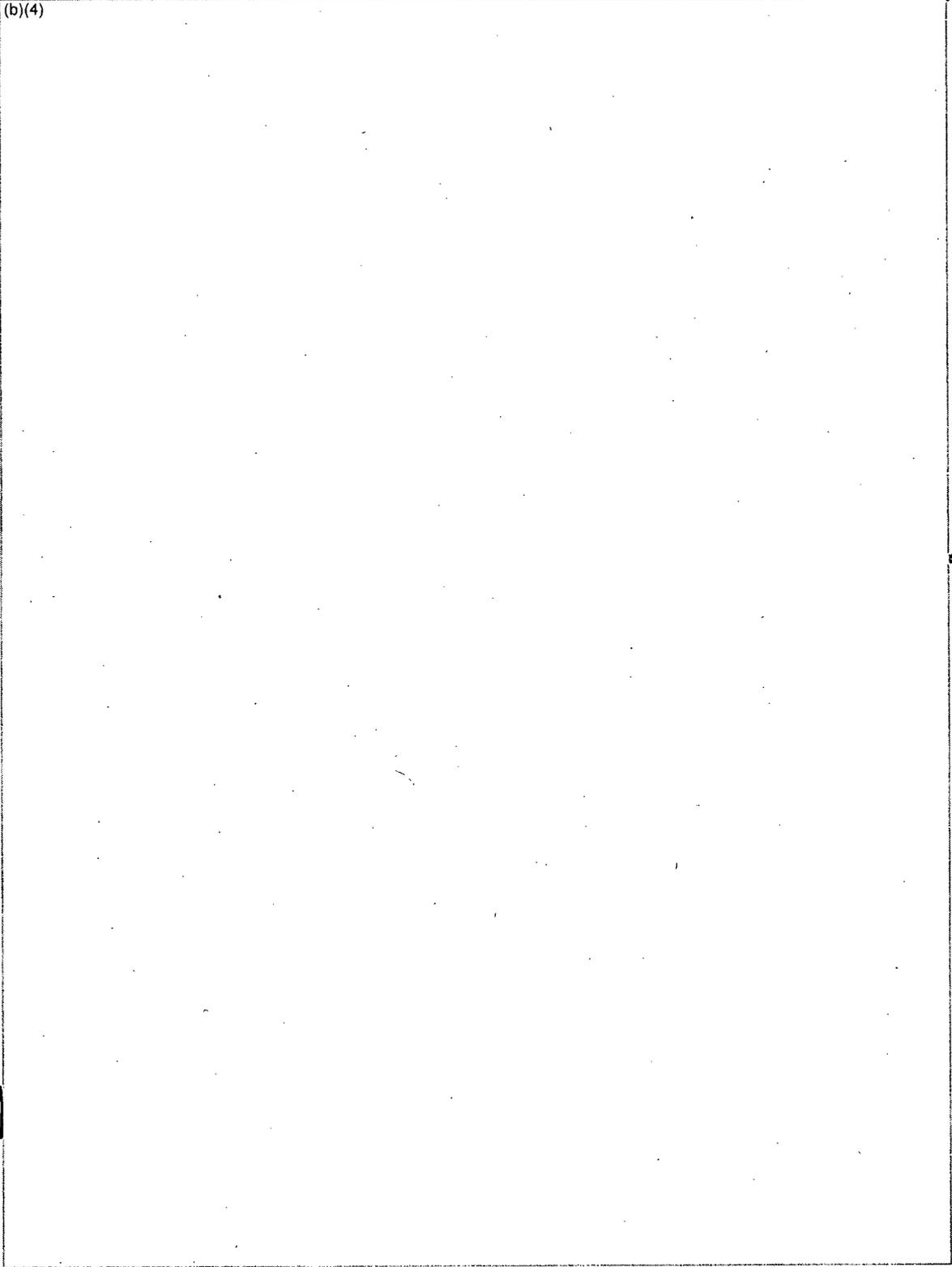
The Cobalt 60 sealed sources remain in use at the Valley Forge site, Building 100, Room 104 as part of the Gamma cell 220 Irradiator. We will ensure that each area where a self-shielded irradiator is located corresponds to the "Conditions of Normal Use" and "Limitations and/or Other Considerations of Use" on the applicable irradiator's Sealed Source and Device Registration Certificate; the floor beneath a self-shielded irradiator is adequate to support the weight of the irradiator; each self-shielded irradiator is secured to prevent unauthorized access or removal; and each area where a self-shielded irradiator is located is equipped with an automatically operated fire detection and control system (sprinkler, chemical, or gas) or the location of the area and other controls ensure a low-level radiation risk attributed to fires.

LMCSS has continued the research and development work with the neutron irradiated electronic components as previously listed under the current license. This material will be tested and stored at the Valley Forge site, Building 100, Room (b)(4)

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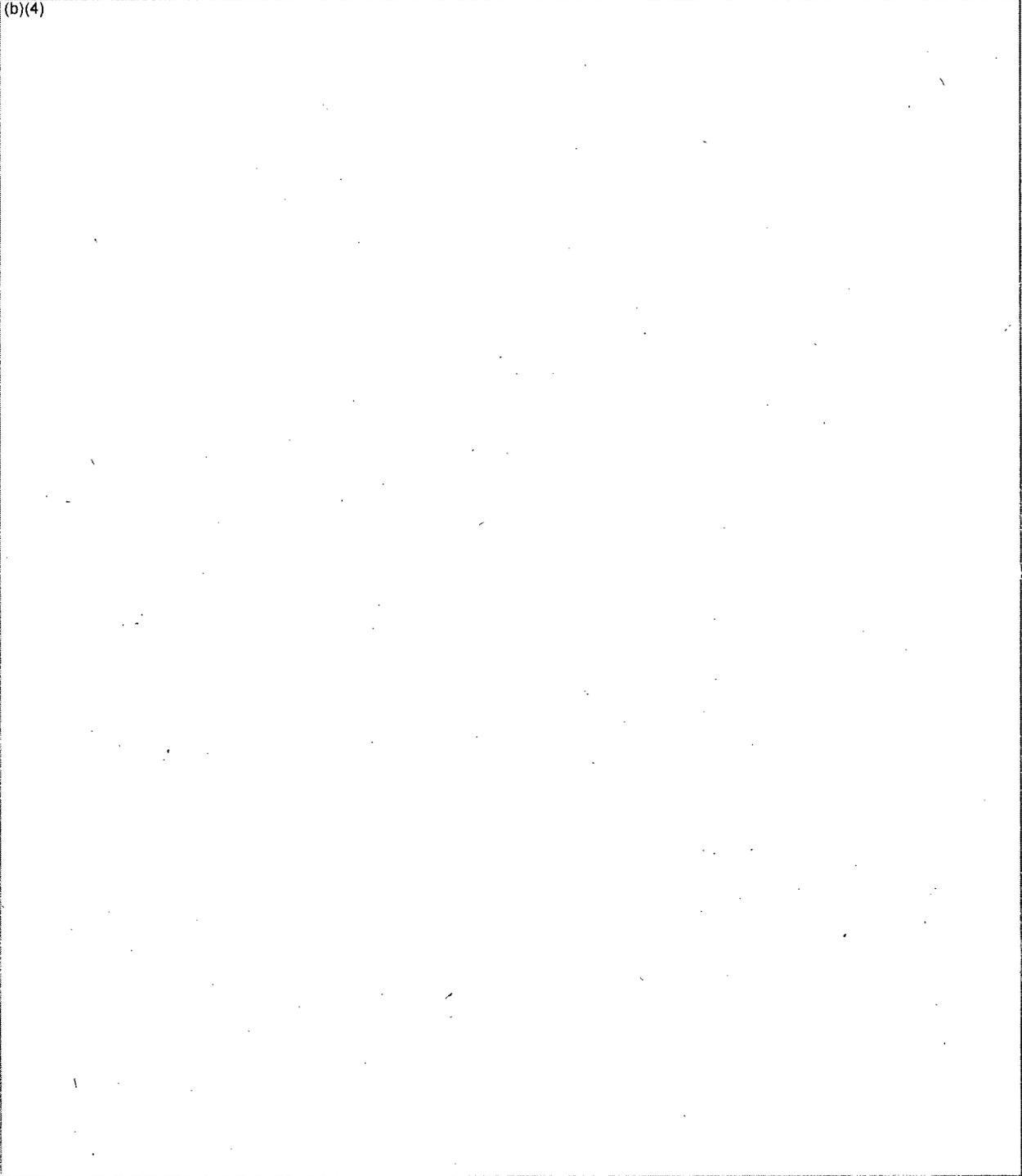
(b)(4)



MAN

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(b)(4)



WMA

Attachment No. 9

RADIATION SAFETY PROGRAM

Neutron Irradiated Parts

We will use instruments that meet the radiation monitoring instrument specifications published in Appendix M to NUREG – 1556, Vol. 7, Program-Specific Guidance About Academic, Research and Development, and other Licenses of Limited Scope, dated December 1999. We reserve the right to upgrade our survey instruments as necessary.

Gamma Cell

We will use instruments that meet the radiation monitoring instrument specifications published in Appendix K to NUREG – 1556, Vol 5, dated October, 1998. Additionally, each survey meter will have been calibrated by the manufacturer or other person authorized by the NRC or an Agreement State to perform survey meter calibrations no more than 12 months before the date the meter is used.

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Instruments used to perform required surveys:

Instrument Type	Radiation Detected	Ranges	Window Thickness	Use
Nuclear Measurements Corp PC-55	Alpha, Beta, Gamma	0/99,000K counts	Window/wss gas flow counter	Measuring swipes
Victoreen Model 470A	Beta, Gamma	0/3,10,30,100, 300,1000 mR/hr, 10R/hr	17 mg/cm ² , 500mg/cm ²	Survey meter
Ludlam Model 18	Alpha, Beta	0/500,000 CPM	0.8 mg/cm ² , 1.2 mg/cm ²	Survey meter
Ludlam Model 19 Micro R Meter	Gamma	0/25, 0/50, 0/250, 0/500, 0/5000 microR/hour	None	Low level survey meter
Eberline SRM 100	Gamma 60 KeV-1 MeV	10 mR/500/hr	Energy compensated GM tube	Area radiation detector
Eberline Model E120	Beta, Gamma	0/50 mR/hr	Side window GM Tube, 30mg/cm ²	Survey meter
Victoreen Model 190	Alpha, Beta, Gamma	1/50,000 CPM	1.4 mg/cm ²	Survey meter
Victoreen Panoramic	Beta, Gamma	0/1000mR/hr	Ion chamber calibrated to 1R/hr ~2mg/cm ² foam	Survey meter
Eberline Geiger Counter Model E520	Alpha, Beta, Gamma	0.01/200 mR/hr	30 mg/cm ²	Survey meter

Material Receipt and Accountability

Physical inventories will be conducted at intervals not to exceed 6 months, to account for all sealed sources and devices received and possessed under the license.

Occupational Dose

We provide dosimetry that meets the Criteria in the section entitled "Radiation Safety Program – Occupational Dose" in NUREG – 1556, Vol. 5 dated October, 1998. All employees and visitors are monitored for exposure - film badges. Badges are changed out every quarter.

Operating & Emergency Procedures

If we change our operating and emergency procedures without amending our license, we will ensure that: the changes are reviewed and approved by licensee management and the RSO; affected licensee staff are trained in the procedures before they are implemented; the changes are consistent with applicable license conditions and the procedures or commitments submitted in the license application; and the changes do not degrade the safety of the program. Operating and emergency procedures will be developed, implemented, maintained, and distributed and will meet the criteria in the section entitled, "Radiation Safety Program – Operating and Emergency Procedures" in NUREG – 1556, Vol. 5, dated October, 1998.

Leak Tests

Leak tests will be performed at the intervals approved by the NRC or an agreement State and specified in the SSD Registration Certificate. Leak tests will be performed by an organization authorized by NRC or an Agreement State to provide leak testing services to other licensees or using a leak test kit supplied by an organization authorized by NRC or an Agreement State to provide leak test kits to other licensees and according to the manufacturer's (distributor's) and kit supplier's instructions.

Routine Maintenance

We will implement and maintain procedures for routine maintenance of our self - shielded irradiators according to each manufacturer's (distributors) written recommendations and instructions.

Non-Routine Maintenance

We will have the self-shielded irradiator manufacturer (or distributor's) or other person authorized by NRC or an agreement State perform non-routine maintenance.

Radiation Safety Program Outline And Training Requirements

LMCSS Radiation Control Program
Section 6.11

Rev. #
A

Date
1999

The Radiation Control Program outlines the following topics:

1. ALARA policy
2. Radiation Safety Committee
3. Radiation Safety Officer/Assistant RSO responsibilities
4. Procuring, Receiving, Transporting, and Disposal of radioactive materials
5. Handling, Storage, and Use of radioactive materials
6. Personnel Certifications and Training
7. Leak testing of Sealed Radioactive Materials
8. Use of Cesium 137 Sources (low level)
9. Neutron Irradiated Electronic Component, Atomic Numbers 3-83
10. Cobalt 60 Gamma Cells
11. Ionizing Radiation Producing Equipment – X-Ray

Training Requirements

Purpose

The purpose of this Procedure is to set forth the requirements and policies governing the LMCSS Nuclear Related Training.

Scope

These policies apply to all persons who work with radiation/radioactive materials as well as all persons who enter radiation areas for work and/or emergency reasons.

Training for Authorized Users/Principle Investigators

As a minimum, these persons will be given an initial specific 8-hour course on the hazards/regulations/user operating procedures that are specific to the radiation sources/radiation producing machines under control of the authorized users.

This 8 hour course will include the following objectives and elements and will be taught by a person familiar with these elements:

LMCSS AUTHORIZED RADIONUCLIDE USERS

COURSE DESCRIPTION

Upon completion of this course, users will be able to:

Implement components of a radiation protection program that include monitoring and assessment of health risks associated with a variety of radiation sources routinely at LMCSS.

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Demonstrate thorough knowledge of relevant standards and regulations.
Correctly assess the reading on a radiation survey meter.
Prepare for and respond to regulatory inspections.
Understand the relative importance of a wide range of Co-60, Th and neutron irradiated sources.
Communicate with the public regarding radiation protection issues.
Interpret and apply radiation protection limits specified in various federal, state and local regulations.
Address an accidental exposure or release of radioactive material within a laboratory.

TOPICS:

Welcome and Review of Course Objectives
Co-60 and neutron irradiated Emissions
Units of Activity and Dose
Relevant Standards and Regulations
External Radiation Protection, Applicable Critical Organs
Gamma and Beta Shielding and Use of Absorption Curve
Personal Dosimetry: Use of TLD's
Radiation Radiobiology
Skin Radiobiology
Allowable Dose Limits 10 CFR 20 (for Rad Workers and the public.)
Physics of Radiation Detectors
Use of Survey Instruments (hands-on surveying)
Internal Radiation Hazards
Laboratory Instrumentation
Accident/Incident Response
Skin Decontamination
Waste Disposal and Transportation

These Authorized Users will also be given an annual 1-hour refresher course.

Training for Radiation Workers under the Direct Supervision of Authorized Users .

As a minimum, these Radiation Workers will be given a 2-hour course covering the following elements:

Welcome and Review of Course Objectives
Units of Activity and Dose
Relevant Standards and Regulations
External Radiation Protection
Personal Dosimetry: Use of TLD's
Radiation Radiobiology
Use of Survey Instruments
Accident/Incident Response

These Workers will also be given an annual 1-hour refresher class.

Training for Ancillary Persons who may enter Radiation Material Areas.

Persons such as Janitors, Security or Shipping Clerks may occasionally need to briefly enter Radiation/Radioactive Materials Areas. These persons will be given an annual 1-hour class which will cover the highlights of the Radiation Worker Class, described above.

Attachment No. 10

WASTE MANAGEMENT

We will use the Decay in Storage model waste procedures published in Appendix T to NUREG – 1556, Vol. 7, "Program-Specific Guidance About Academic, Research and Development, and other Licenses of Limited Scope," dated December 1999.

The Neutron Irradiated Electronic Components are leak tested when received and held 120 days for decay in storage or until radioactivity levels are at background. These components are not released until measured radioactivity levels cannot be distinguished from background.



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Attachment No. 11

Decommissioning Funding Plan

Lockheed Martin Corporation submitted a trust agreement from the Bank of Montreal Trust Company and a standby letter of credit (LO [REDACTED]) from Wachovia Bank of Georgia for a total amount of US\$226,000.00 to the attention of Dr. Mohamed M. Shanbaky with the USNRC on January 19, 2001. This agreement of financial assurance for decommissioning, covers control No. 129151, currently for license No. 37-02006-09.

The financial assurance will remain in effect for the requested amendment of license 37-02006-09. The trust agreement amount of US\$226,000.00 shall remain the same.

