

MATERIALS LICENSE

Amendment No. 22

*Adm, 1/98*

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

OFFICIAL RECORD COPY

Licensee		In accordance with the letter dated June 20, 1997,	
1. Lockheed Martin Corporation		3. License Number SUB-831 is amended in its entirety to read as follows:	
2. P. O. Box 8555 Philadelphia, Pennsylvania 19101		4. Expiration Date	October 31, 2000
		5. Docket or Reference No.	040-07344
6. Byproduct, Source, and/or Special Nuclear Material	7. Chemical and/or Physical Form	8. Maximum Amount that Licensee May Possess at Any One Time Under This License	
A. Uranium (Natural or depleted in the isotope Uranium-235)	A. Any	A. 200 kilograms	
B. Thorium	B. Any	B. 200 kilograms	
9. Authorized use			
A. and B. Research and development as defined in 10 CFR 30.4 and manufacturing related to missile and space programs.			

CONDITIONS

- 10. Licensed material may be used at the licensee's facilities at 100 Campus Drive, Newtown, Pennsylvania, 3198 Chestnut Street, and 401 E. Hunting Park Avenue in Philadelphia, Pennsylvania; Building 100 and Astrospase Division facilities on 230 Mall Boulevard, Building 21, and 720 Vandenburg Road in King of Prussia, Pennsylvania; and at temporary job sites of the licensee anywhere in the United States where the U.S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material.
- 11. A. Licensed material shall be used by, or under the supervision of, individuals designated by the Ionizing Radiation Advisory Group, Dr. Todd A. Hoover, M.D., Chairman.  
B. The Radiation Safety Officer for this license is John L. Andrews.
- 12. The licensee shall not use licensed material in or on human beings or in field applications where activity is released except as provided otherwise by specific condition of this license.
- 13. The licensee may transport licensed material in accordance with the provisions of 10 CFR 71, "Packaging and Transportation of Radioactive Material."

Information in this record was deleted in accordance with the Freedom of Information Act, exemption [redacted] FOIA-2007-304

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PDR ADDCK 04007344  
PDR

*dl* *F-45*  
ML 10

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number

SUB-831

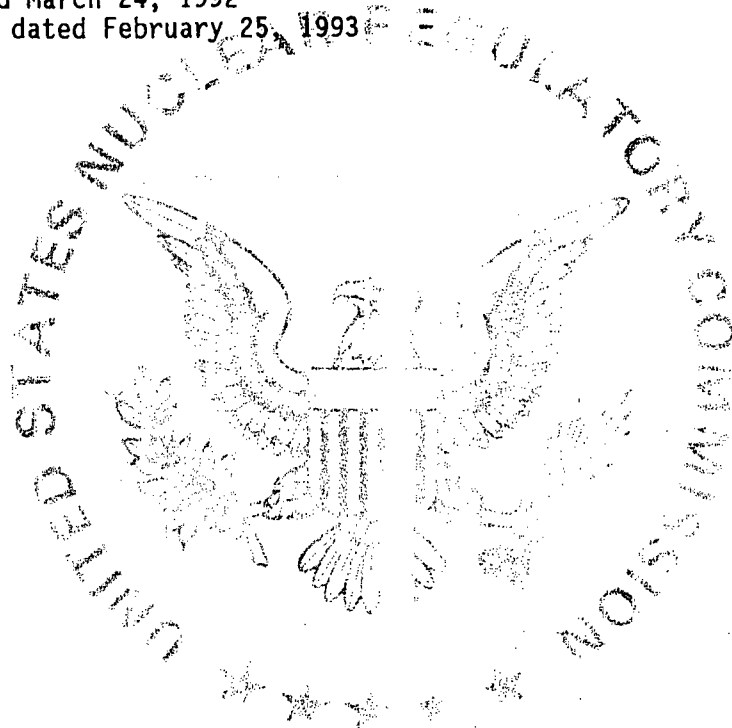
Docket or Reference number

040-07344

Amendment No. 22

14. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

- A. Application dated April 26, 1989
- B. Letter dated June 28, 1990
- C. Letter dated March 24, 1992
- D. Application dated February 25, 1993



For the U.S. Nuclear Regulatory Commission

**ORIGINAL SIGNED BY:  
JOHN D. KINNEMAN**

By

Nuclear Materials Safety Branch  
Region I  
King of Prussia, Pennsylvania 19406

Date     AUG - 5 1997

AUG - 5 1997

Eileen M. Wisser  
Manager, Environmental Health and Safety  
Lockheed Martin Corporation  
P. O. Box 8555  
Philadelphia, PA 19101

Dear Mr. Wisser:

This refers to your license amendment request. Enclosed with this letter is the amended license.

Please review the enclosed document carefully and be sure that you understand and fully implement all the conditions incorporated into the amended license. If there are any errors or questions, please notify the U.S. Nuclear Regulatory Commission, Region I Office, Licensing Assistance Team, (610) 337-5093 or 5239, so that we can provide appropriate corrections and answers.

Thank you for your cooperation.

Sincerely,

**Original Signed By:**

John D. Kinneman, Chief  
Nuclear Material Safety Branch 2  
Division of Nuclear Materials Safety

License No. SUB-831  
Docket No. 040-07344  
Control No. 124711

Enclosure:  
Amendment No. 22

DOCUMENT NAME: R:\WPS\MLTR\LSUB831

To receive a copy of this document, indicate in the box: "C" = Copy w/o attach/encl "E" = Copy w/ attach/encl "N" = No copy

OFFICE	DNMS/RI	N	DNMS/RI	N			
NAME	JBondick/jmb <i>JB</i>		JKinneman				
DATE	07/24/97		08/5/97		07/ /97		07/ /97

OFFICIAL RECORD COPY **ML 10**

LOCKHEED MARTIN



MISSILES & SPACE  
VALLEY FORGE OPERATIONS

P. O. BOX 8555, PHILADELPHIA, PA 19101  
PHONE: (610) 354-5167  
FAX: (610) 354-5749

June 20, 1997

Licensing Assistance Section: Region 1  
US Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Re: License Amendment Application: SUB-831  
Program Code 11300  
Docket No. 040-07344

Dear Sir:

Attached are two copies of our Amendment Request to Materials License No. SUB-831 on your Application Form 313. A check, in the amount of \$ 580.00 for the required fee, has been sent separately to the St. Louis PO Box by our Disbursements office in Florida .

This Amendment Request pertains to the addition of the new Lockheed Martin Communications and Power Center (CPC) in Newtown, PA as a worksite for MgTh spacecraft materials activity.

We have a goal of receiving this Amendment by mid-August. If there are any questions or comments concerning this application, please contact our Radiation Safety Officer, Mr. John L. Andrews, at (610) 354-3840; he will expeditiously support you in this effort..

Sincerely,

Eileen M. Wisser  
Manager, Environmental Health and Safety

Attachment

OFFICIAL RECORD COPY ML 10

124711  
JUN 23 1997

cc: J. L. Andrews (RSO)

T, Hoover, M. D.

S. Powers, Manager, Environmental Safety and Health, CPC

(7-96)  
10 CFR 30, 32, 33  
34, 35, 36, 58 and 40

Estimated burden per response to comply with this information 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. Forward comments regarding burden estimates to the Information and Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0120), Office of Management and Budget, Washington, DC 20503. NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

### 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. 040-07344**

**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 19408-1415

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION  
U.S. NUCLEAR REGULATORY COMMISSION, REGION II  
101 MARIETTA STREET, NW, SUITE 2900  
ATLANTA, GA 30323-0199

**IF YOU ARE LOCATED IN:**

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

MATERIALS LICENSING SECTION  
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  
811 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TX 78011-8064

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.

**1. THIS IS AN APPLICATION FOR (Check appropriate item)**

- A. NEW LICENSE
- B. AMENDMENT TO LICENSE NUMBER SUB-831
- C. RENEWAL OF LICENSE NUMBER \_\_\_\_\_

**2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip code)**

Lockheed Martin Corporation  
Valley Forge Operations  
PO Box 8555  
Philadelphia, PA 19101

**3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED**  
Valley Forge Space Center                      Communications & Power Center  
230 Mall Blvd.    100 Campus Drive  
King of Prussia, PA                                      Newtown, PA  
(and temporary job sites, see attachment)

**4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION**

John L. Andrews, R50

TELEPHONE NUMBER  
(610) 354-3840

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 which will be possessed at any one time.

**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. LICENSEE FEES (See 10 CFR 170 and Section 170.31)**

FEE CATEGORY 2C                      AMOUNT \*  
ENCLOSED \$ 580.00

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

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 82 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION. \*Separately mailed to St. Louis on 6/16/97

CERTIFYING OFFICER - TYPED/PRINTED NAME AND TITLE  
Sal Capodici, Vice President, Valley Forge Operations

SIGNATURE  
*John L. Andrews*

DATE  
June 19, 1997

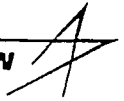
**FOR NRC USE ONLY**

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
			\$		
APPROVED BY				DATE	

JUN 23 1997

Lockheed Martin Missiles & Space  
Valley Forge Operations  
Post Office Box 8555 Philadelphia, P. 19101  
Telephone 610.354.1776 Facsimile 610.354.6090

**LOCKHEED MARTIN**




**Salvatore C. Capodici**  
Vice President

24 January 1997

To Whom It May Concern:

John Zimmerman, Director of Operations, Valley Forge Missiles & Space, is hereby authorized to sign on behalf of Lockheed Martin Missiles & Space for all Environment Health and Safety issues affecting the following Lockheed Martin facilities in King of Prussia, Pennsylvania: 230 E. Mall Boulevard, and Building B, Vandenberg Avenue. In the absence of written direction to the contrary, this authorization shall remain in effect through December 31, 1997.

  
Salvatore C. Capodici, Vice President  
Valley Forge Operations

AMENDMENT SUBMITTAL DETAIL

Item No. 1 Application For Amendment

This Amendment Application is submitted for the principal reason of adding as a second site, our soon-to-be-completed facility in Newtown, PA. The name of this new facility is the Communications and Power Center (CPC). It is a separate and parallel- managed facility under our Missile and Space organization which is headquartered in Sunnyvale, CA.

Current plans anticipate being ready to accept radioactive MgTh hardware at the CPC in late August of this year. Due to the limited nature of the activity contemplated at this new site, the activity is to be 'accessory' to the Valley Forge Space Center as the principal site for the license i.e., the location where the Radiation Safety Officer is resident.

The Docket No. used previously is 040-07344.

Item No. 2 Name and Mailing Address of the Applicant

No change.

Item No. 3 Addresses For Use and Possession

This request is to add the Lockheed Martin Corp. Communications and Power Center (CPC) as the second site for this license. It is a soon-to-be-completed facility in Newtown, PA.; a mid-summer Certificate of Occupancy date is expected.

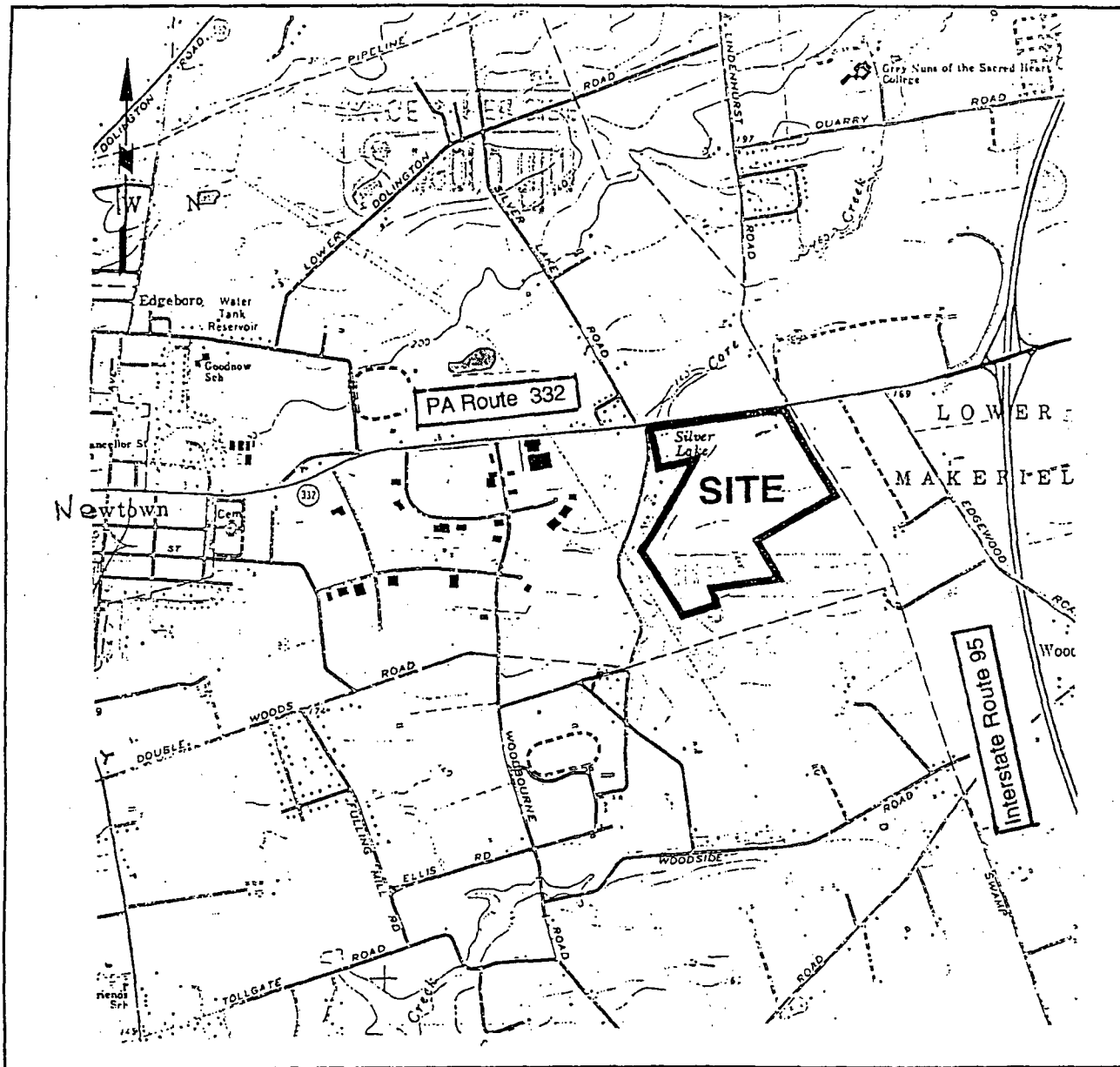
The Newtown, PA site is at Campus Drive which is on the south side of PA State Route 332 as shown on Figure 1. The location of the two Lockheed Martin buildings and a separate Holy Family College facility at the site are shown in detail on Figure 2; the larger building is the Product Team Building to be added as a radioactive material location. This new site is a 45 minute drive from the Valley Forge site.

1 2 4 8 2 6  
As a matter of note, the (non-automatic) license renewal process which was started by our filing in September 1995 included the deletion of all sites other than the Valley Forge Space Center. Our understanding is that all related site deletion issues were settled by several subsequent submissions. Despite that, the (automatic ?) renewal, effected as Amendment 21, deleted none of the 4 additional sites listed on Amendment 20. Our desire is that resolution of these sites status not hold up timely addition of the CPC site.

Item No. 4 Contact Person

No change.





SCALE 1" = 2000'

Figure 1 CPC Location Map  
2

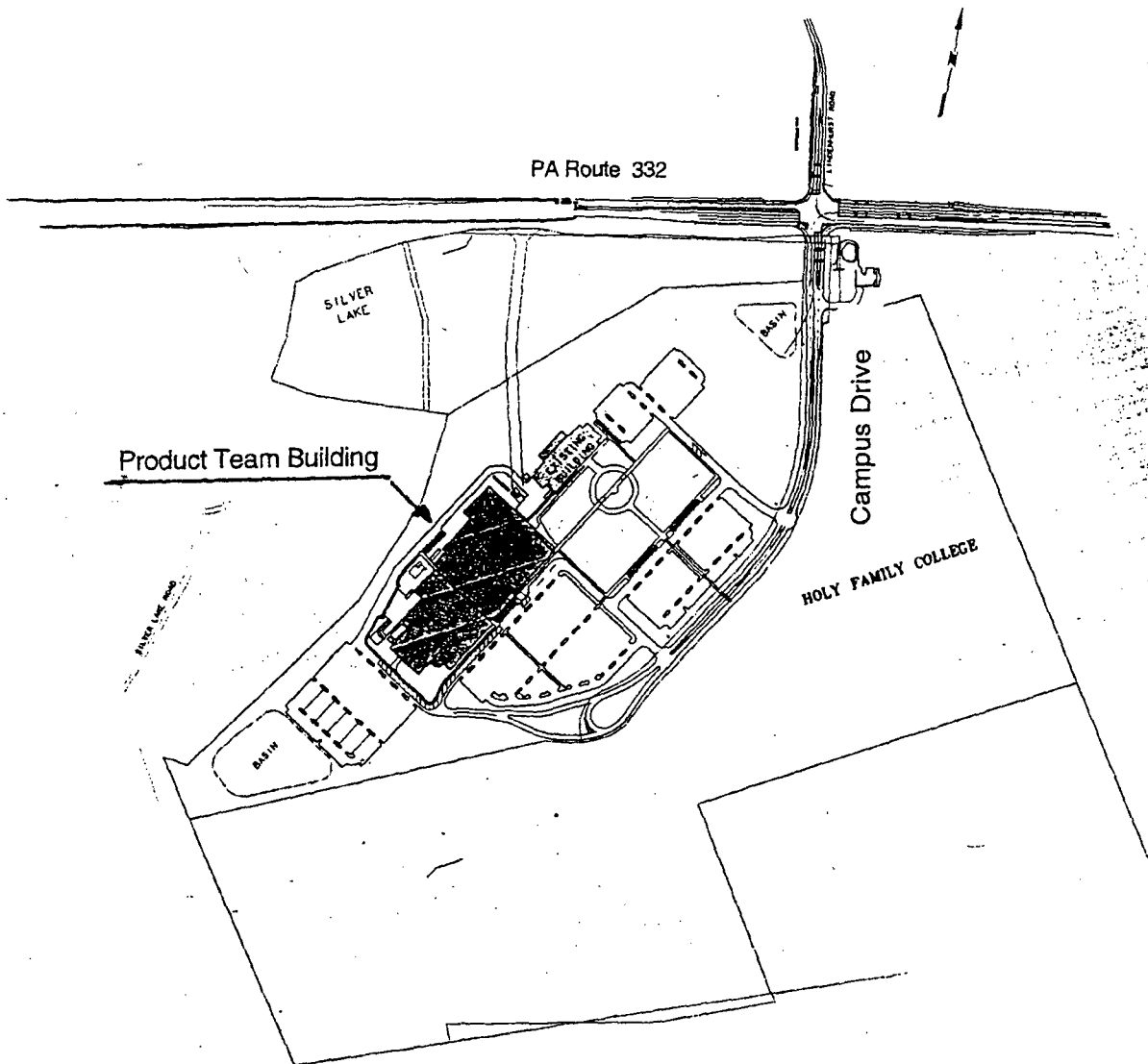


Figure 2 CPC Site Detail  
3

Item No. 5 Radioactive Material

No change.

It is noted that the only source material contemplated for the CPC Site is six thoriated- magnesium alloy metal hardware panels for a spacecraft program being transferred from the Valley Forge facility. Each of these panels incorporates approximately 40 microcuries of thorium; each weighs about 40 pounds and is thin and about 4 by 7 feet in area. Four builtup panels are to be received; two are to have their components moved to two new panels. The new panels are being machined elsewhere and the two panels being 'emptied' will be abandoned as normal radioactive waste.

Four panels will have some new hardware components added and will be tested at the CPC prior to shipment to another facility for assembly and test at the full spacecraft level. This CPC work is scheduled for completion prior to the license expiration date.

Raw stock MgTh which had been stored has been removed from this primary site by transfer to another licensee.

Item No. 6 Purpose For Licensed Material Use

No change.

Item No. 7 Individuals Responsible For Radiation Safety And Their Experience

The Radiation Safety Officer will remain as John L. Andrews; he is now organizationally in the Transition Team component and remains resident at Valley Forge. He will be assisted by Jeff Evans, Staff Safety and Health Engineer, who is resident at the CPC. Mr. Evans will act as Deputy RSO and has considerable prior radiation safety experience as detailed in his resume shown below.

Mr. Evans will be a Member of the Ionizing Radiation Advisory Committee (IRAG).

The license renewal request documentation, dated April 3, 1996, page 11, we show Dr. Todd A. Hoover, M.D. as the IRAG Chairman; the current License Amendment (No. 21) incorrectly shows Dr. S. J. Mucha, M.D. as the Chairman.

Item No. 7 Continued

Resume

Jeff Evans  
Staff Safety and Health Engineer  
Communications and Power Center (starting July 1997)

A. Education

B.S. - Occupational Safety and Industrial Hygiene Management; Millersville University, Millersville, PA

M.S. - Environmental Health Science; Temple University, Philadelphia, PA  
Health Physics; Spring Semester, 1995 (2 credits). Instruction on operation of radiation survey instruments, theory of ionizing and non-ionizing radiation, in depth review of the NRC regulations, radiation safety program development for effective protection of radiation workers.

Radiation Safety - American University, Washington, DC  
Physics Department - Dr. Romeo Segnan. Instruction covered review of scintillation counting for P-32; S-35, performing a contamination survey for beta emitters, sealed source leak surveys, radiation survey instrumentation, theory of ionizing radiation and NRC regulations.

B. Experience

Lockheed Martin Missiles and Space, East Windsor, NJ  
Coordination of X-ray safety and permit program TLD badge program for radiation safety program. Coordination of annual IRAG meeting for review of Radiation Safety Written Program. Prime activity was in industrial hygiene and safety engineering. 1.5 years experience.

American University, Washington, DC Associate Radiation Safety Officer.  
Performed contamination surveys in University laboratories for phosphorous-32 and sulfur-35 (sequencing gels) and performed leak checks on sealed sources - Cobalt-57, Cobalt-60. Coordinated Radiation Waste Disposal Program for P-32 and S-35. Coordinated Radiation Safety Committee meetings on a quarterly basis. 4 years experience.

C. Certifications

American Society of Safety Engineers, Certified Safety Professional (CSP)

D. Associations

American Society of Safety Engineers  
American Industrial Hygiene Association

Item No. 8 Training For Individuals Working In Or Frequenting Restricted Areas

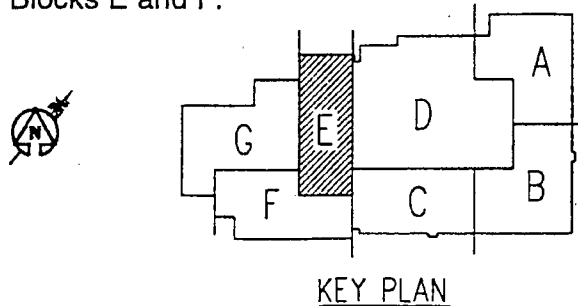
No change.

Item No. 9 Facilities and Equipment

9.1 Facility

At the Newtown site, Figures 1-2, the new Product Team Building is the facility where MgTh (mounting panel) material will be stored, minor machining will be performed and the built-up panel (incorporating functioning hardware) will be tested.

The Product Team Building is a two story structure combining factory and offices; the overall floor area is approximately 350K sq. feet.. In Block layout, shown below, the MgTh will be located in Blocks E and F.



Figures 3 and 4 detail the overall floor layouts. Some areas of the building are high bay rather than two leveled. The Block E area includes the Integration and Test High Bay room which is further detailed in Figure 5; this is where MgTh material is to be stored. The Block F area includes the Milsat Test room which is further detailed in Figure 6; this is where minor machining of MgTh material will be performed and the built-up panel (incorporating functioning hardware) will be tested.

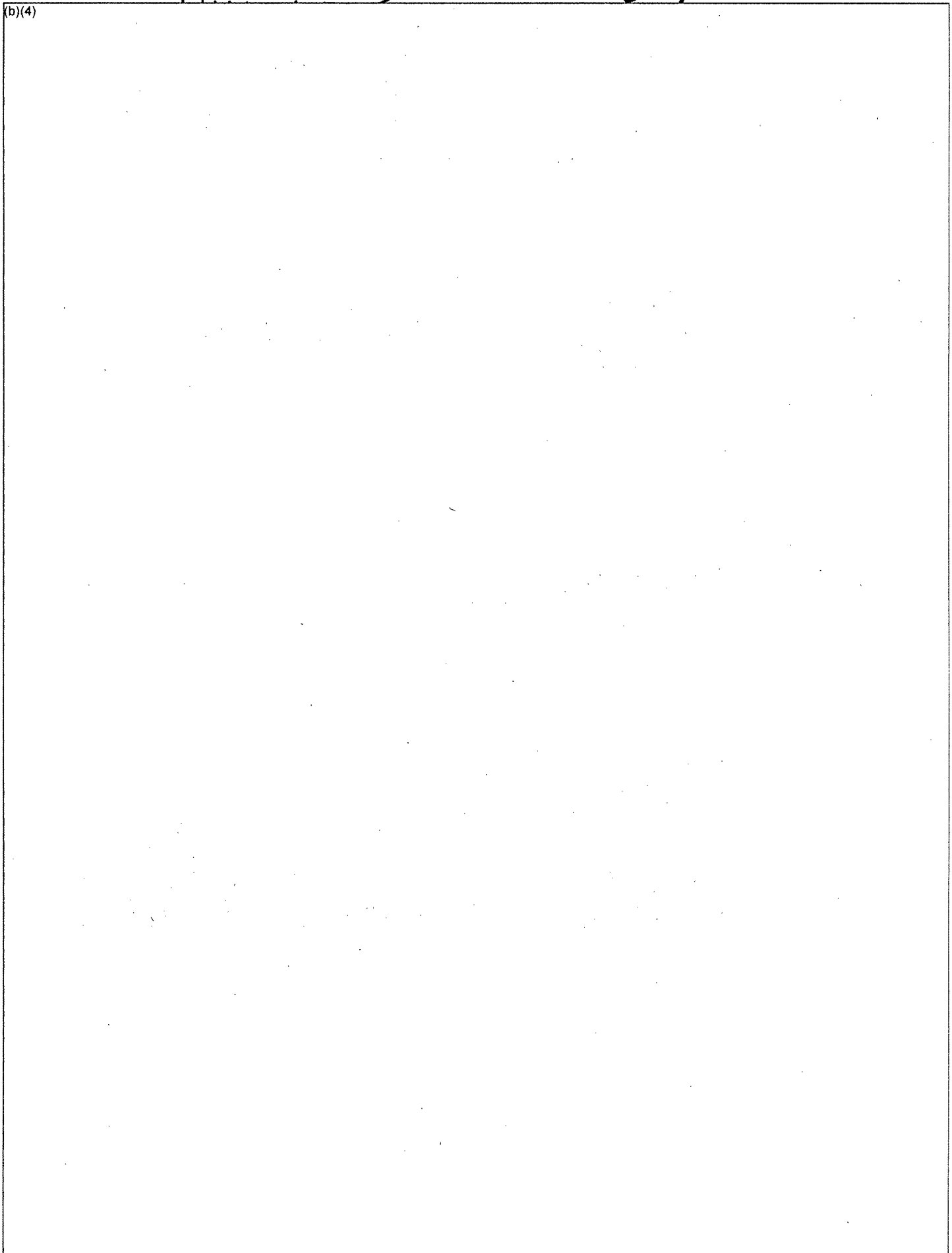
The Product Team Building and the areas detailed above contain high value equipment. There will be adequate continuous security for the safeguarding of the panels which incorporate the MgTh material.

9.2 Radiation Safety Equipment

The basic radiation safety equipment to be utilized at the CPC for this material, as well as x-ray radiography equipment, is a set of at least three survey meters and at least eight pocket ionization chamber (PIC) meters. These meters are to be transferred from the East Windsor Lockheed Martin Missiles and Space facility and their periodic calibrations will be maintained, using approved off site vendors.

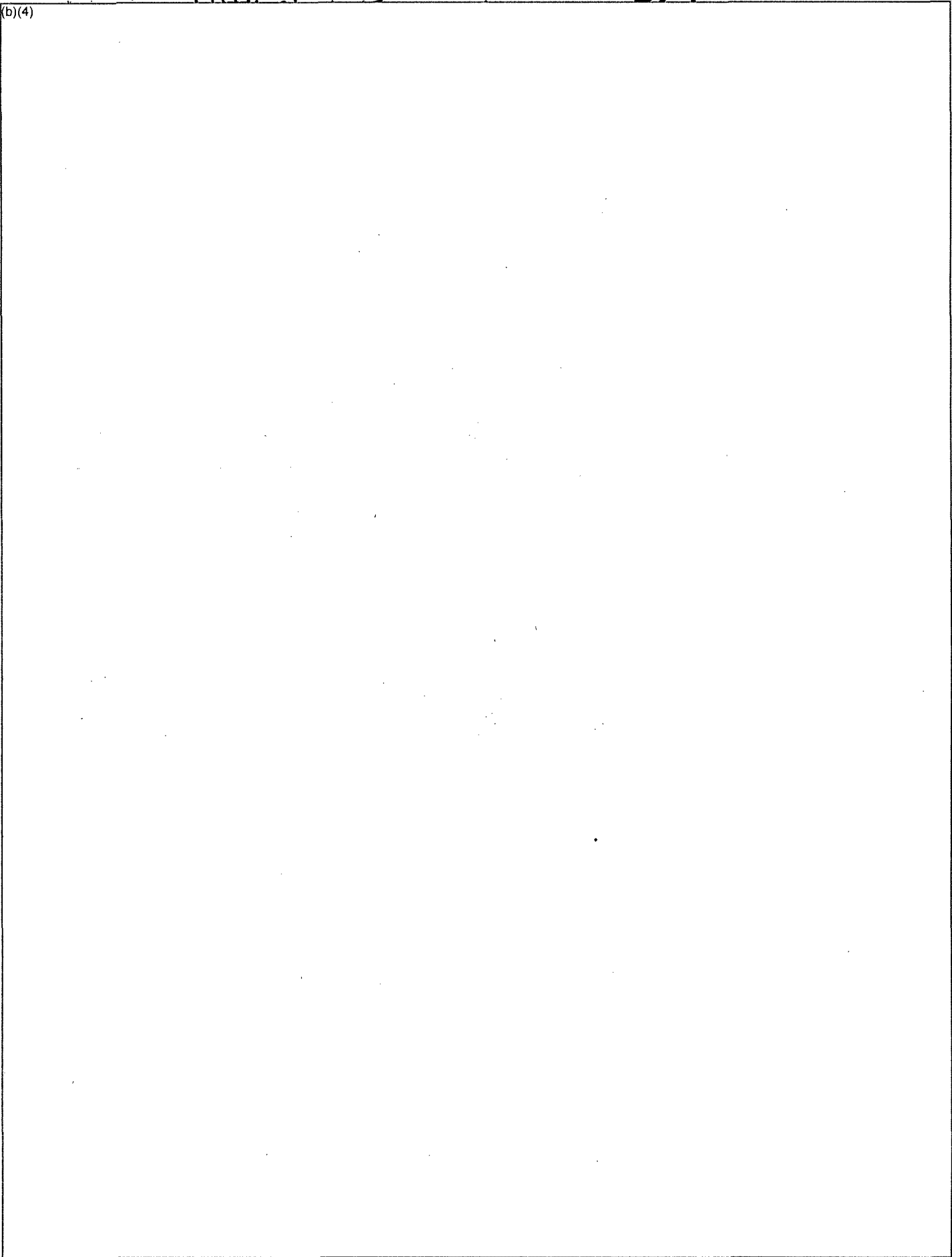
244

(b)(4)



Ex 4

(b)(4)



(b)(4)



(b)(4)

Item No. 9 Facilities and Equipment (Concluded)

9.3 Leak Testing

Leak testing and contamination surveys will be performed at the CPC site, with readings made using the PC-55 instrument at the Valley Forge site.

Item No. 10 Radiation Safety Program

10.1 General

In general, the radiation safety program at CPC is to be an extension of that at Valley Forge. Mr. Jeff Evans (see Item 7, above) will be on site full time as the Deputy RSO and Mr. John Andrews, the RSO, will make periodic visits, initially at least monthly and then at least bimonthly, to direct and review the program in detail. Records of inventory, surveys and activity will be maintained at both CPC and Valley Forge.

The Environmental Safety and Health (ESH) function at CPC will be located in the Product Team Building. The individual employees assigned to the MgTh panel activities are expected to be employees currently associated with the same effort at Valley Forge.

10.2 Personnel Radiation Badges

Landauer, Inc. will continue to be the vendor used; the program in place at our East Windsor facility will initially handle this effort and at some future date, probably 1998, the service will be directly between CPC and Landauer, Inc. Records will be maintained at both CPC and Valley Forge.

Item No. 11 Waste Management

No change. While little waste is anticipated, waste will probably be directly picked up at CPC by the processor.

BETWEEN:

License Fee Management Branch, ARM  
and  
Regional Licensing Sections

OR LFMS USE)  
INFORMATION FROM LTS

Program Code: 11300  
Status Code: 0  
Fee Category: 2C  
Exp. Date: 20001031  
Fee Comments:  
Decom Fin Assur Req'd: Y

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED

Applicant/Licensee: LOCKHEED MARTIN CORPORATION  
Received Date: 970623  
Docket No: 4007344  
Control No.: 124711  
License No.: SUB-831  
Action Type: Amendment

2. FEE ATTACHED

Amount: \_\_\_\_\_  
Check No.: \_\_\_\_\_

3. COMMENTS

Signed Brown, R.J.  
Date 9/26/97

B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered 1/1)

1. Fee Category and Amount: 2C \$420

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

Amendment \_\_\_\_\_  
Renewal \_\_\_\_\_  
License \_\_\_\_\_

3. OTHER \_\_\_\_\_

Signed \_\_\_\_\_  
Date \_\_\_\_\_

1997 JUL -3 AM 9:54

Log	<u>July 1</u>
Remitter	
Check No.	<u>177-55</u>
Amount	<u>580</u> <u>\$420</u> -- Refunded \$160
Fee Category	<u>2C</u>
Type of Fee	<u>Amo</u>
Date Entered	<u>7/8/97</u>
Date Completed	
By	<u>RB</u>

Dep at St. Louis

07 for 7/8/97

Ltr dtd 7/9/97 sent to licensee  
for Dec 41. 11. today... RB