

## MATERIALS LICENSE

Amendment No. 01

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.

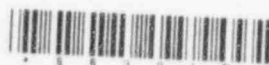
OFFICIAL RECORD COPY

Licensee		In accordance with letter dated March 7, 1997	
1. Harris Semiconductor		3. License Number 37-24841-02 is amended in its entirety to read as follows:	
2. 125 Crestwood Road Mountaintop, Pennsylvania 18707-2189		4. Expiration Date April 30, 2002	
		5. Docket or Reference No. 030-32138	
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. Sodium 24	A. Any	A. 2 millicurie	
B. Silicon 31	B. Any	B. 2 millicuries	
C. Phosphorus 32	C. Any	C. 2 millicurie	
D. Scandium 47	D. Any	D. 4 millicuries	
E. Chromium 51	E. Any	E. 4 millicurie	
F. Cobalt 58	F. Any	F. 1 millicurie	
G. Copper 64	G. Any	G. 1 millicurie	
H. Zinc 65	H. Any	H. 1 millicurie	
I. Arsenic 76	I. Any	I. 1 millicurie	
J. Bromine 82	J. Any	J. 1 millicurie	
K. Antimony 122	K. Any	K. 1 millicurie	
L. Antimony 124	L. Any	L. 1 millicurie	
M. Gold 198	M. Any	M. 1 millicurie	
9. Authorized use			
A. through M. for possession, storage, and use in manufacturing silicon chips.			

## CONDITIONS

10. Licensed material may be used only at the licensee's facilities at 125 Crestwood Road, Mountaintop, Pennsylvania and at 1700 Fostoria Road, Findlay, Ohio.
11. A. Licensed material shall be used by, or under the supervision of, Peter F. Borza and William Kasselmann.
- B. The Radiation Safety Officer for this license is Peter F. Borza.
12. This license does not authorize commercial distribution of licensed material to persons generally licensed pursuant to 10 CFR 31 or to persons exempt from licensing pursuant to 10 CFR 30.

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**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License Number

37-24841-02

Docket or Reference Number

030-32138

Amendment No. 01

13. 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 March 19, 1991
- B. Letter dated December 28, 1991
- C. Letter dated March 7, 1997

APR 30 1997

Date \_\_\_\_\_

For the U.S. Nuclear Regulatory Commission

Original Signed By:

John R. McGrath

By

Nuclear Materials Safety Branch

Region 1

King of Prussia, Pennsylvania 19406

APR 30 1997

Peter F. Borza  
Radiation Safety Officer  
Harris Semiconductor  
125 Crestwood Road  
Mountaintop, PA 18707-2189

Dear Mr. Borza:

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 R. McGrath**

John R. McGrath  
Senior Health Physicist  
Division of Nuclear Materials Safety

License No. 37-24841-02  
Docket No. 030-32138  
Control No. 124372

Enclosure:  
Amendment No. 01

DOCUMENT NAME: R:\WPS\MLTR\L3724841.01

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				
NAME	McGrath <i>JRM</i>						
DATE	04/08/97	04/ /97	04/ /97	04/ /97			

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125 Crestwood Road  
Mountaintop, PA 18707-2189

March 7, 1997

030-32138

Licensing Assistance Section  
Nuclear Materials Safety Branch  
U.S. Nuclear Regulatory Commission, Region I  
475 Allendale Road  
King of Prussia, PA 19406-1415

Subject: Amendment of NRC License #37-24841-02  
Expires April 30, 2002, Docket No. 030-32138

Gentlemen:

We are requesting amendment of NRC License #37-24841-02 for the purpose of clarifying restrictive wording of our present license and also to request that Ray Lau be replaced by William Kasselmann as the person who will supervise the licensed materials at the Findlay, Ohio Harris facility. All other information pertinent to this license remains the same as previously submitted. Please note that we shall conduct our radiation program in accordance to our present license dated November 6, 1996 until NRC approval is received in the form of an amended license.

Enclosed are two copies of a completed amendment application and a check in the amount of \$580.00 as payment for the amendment fee as established in the Schedule of Materials Fees found in 10CFR170.21.

Very truly yours,

Peter F. Borza  
Radiation Safety Officer  
Enclosures

cc: E. Scaran, Lic. and App. Radiation File  
Melbourne: D. Bock, P. Rosenberg, J. Steiner  
Findlay: W. Kasselmann

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MAR 12 1997

## APPLICATION FOR MATERIAL LICENSE

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 estimate 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.

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:

NUCLEAR MATERIALS LICENSING SECTION  
U.S. NUCLEAR REGULATORY COMMISSION, REGION II  
101 MARIETTA STREET, NW, SUITE 2900  
ATLANTA, GA 30323-0190

## 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  
611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TX 76011-8064

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) <input type="checkbox"/> A. NEW LICENSE <input checked="" type="checkbox"/> B. AMENDMENT TO LICENSE NUMBER <u>37-24841-02</u> <input type="checkbox"/> C. RENEWAL OF LICENSE NUMBER _____		2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip code)  Harris Semiconductor 125 Crestwood Road Mountaintop, PA 18707-2189			
3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED (a) 125 Crestwood Road Mountaintop, PA 18707-2189 (b) 1700 Fostoria Road Findlay, Ohio 45840		4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION  Peter F. Borza, R.S.O.  TELEPHONE NUMBER (717) 474-6761			
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 <u>3B</u> 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 52 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.					
CERTIFYING OFFICER - TYPE/PRINTED NAME AND TITLE  Raymond T. Ford, Director, Manufacturing		SIGNATURE  DATE <u>3-10-97</u>			
FOR NRC USE ONLY					
TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
			\$		
APPROVED BY				DATE	
					1 2 4 3 7 2 MAR 12 1997

License #37-24841-02 Amendment

## 5. RADIOACTIVE MATERIAL

Byproduct, source, and/or <u>special nuclear material</u>	Chemical and/or <u>physical form</u>	Maximum amount possessed at any <u>one time</u>
A. Antimony 122	Irradiated silicon chips or wafers	1 millicurie
B. Antimony 124	Irradiated silicon chips or wafers	1 millicurie
C. Arsenic 76	Irradiated silicon chips or wafers	1 millicurie
D. Bromine 82	Irradiated silicon chips or wafers	1 millicurie
E. Chromium 51	Irradiated silicon chips or wafers	4 millicuries
F. Cobalt 58	Irradiated silicon chips or wafers	1 millicurie
G. Copper 64	Irradiated silicon chips or wafers	1 millicurie
H. Gold 198	Irradiated silicon chips or wafers	1 millicurie
I. Phosphorus 32	Irradiated silicon chips or wafers	2 millicurie
J. Silicon 31	Irradiated silicon chips or wafers	2 millicuries
K. Sodium 24	Irradiated silicon chips or wafers	2 millicuries
L. Zinc 65	Irradiated silicon chips or wafers	1 millicurie
M. Scandium 47	Irradiated silicon chips or wafers	4 millicuries

### 6.0 Purpose For Which Licensed Material Will Be Used

Byproduct materials in exempt concentrations are induced in semiconductor chips, wafers and devices incidental to their exposure in a reactor to neutron radiation for purposes of altering their electrical properties.

### 7.0 Individuals Responsible For Radiation Safety Program and Their Training

**Radiation Safety Officer:** Peter F. Borza

#### Background and Training

- Currently Chief Chemist/RSO of the Harris Semiconductor facility at Mountaintop, PA.
- BA in Chemistry - 1966; MS in Chemical Engineering - 1989.  
These curricula deal with radiation and nuclear energy in required Physics and Chemistry courses.



License #37-24841-02 Amendment

**7.0 ( cont.)**

- 16 hours in Radiation Defense at the Office for Disaster Preparedness, Cayuga County, Auburn, New York - 1980.
- A total of 80 hours of Industrial Hygiene seminars at Harvard School of Public Health of which 8 hours dealt with Radiation fundamentals.
- Completed 36 hour Radiation Safety Officer's training course at the University of Texas Health Science Center at San Antonio, Texas - Nov. 1989.
- RSO responsibility at Haris Mountaintop facility 1987 to present.
- RSO responsibility for Cobalt 60 possession license 1990 to present.

- 7.1 William Kasselmann, C.I.H** will directly supervise the use of materials for this license at the Harris Semiconductor Findlay, Ohio site providing assurance to Mr. Borza that the provisions, conditions and record keeping requirements for this license are maintained at the Findlay location.

Background and Training

- Mr. Kasselmann is a Certified Industrial Hygienist with Radiation Safety Officer responsibility at the at the Harris Semiconductor facility at Findlay, Ohio.
- Mr. Kasselmann received training in radiological safety in the course of his Certified Industrial Hygienist curriculum.

**7.2 Duties Of The Radiation Safety Officer**

- a. Ensure that the use of licensed material is, by, or under the direct supervision of individuals specifically listed on the license.
- b. Ensure that all users of licensed materials have been trained in basic radiation safety and are aware of the conditions of the license and where to obtain posted documentation.
- c. Ensure that personnel who are required to be monitored wear dosimeters when using licensed materials.
- d. Ensure that licensed materials are properly secured against unauthorized removal at all times when not in use.

License #37-24841-02 Amendment

## 7.2 (cont. )

- e. Perform routine inspections of any areas using or storing licensed materials.
- f. Ensure that the terms and conditions of the license are met, and that all required records are maintained.

## 8.0 Training For Individuals Involved in Irradiated Wafer Handling and Processing Including Ancillary Personnel

Training consists of a presentation of the following topics:

- 1. 10CFR Parts 19 and 20
- 2. License requirements
- 3. Operating procedures

Attendance is taken and kept on file in the on-site training data base and in the License file.

## 9.0 Description Of Facilities

Received materials are stored in a designated area prior to processing. The processing area consists of a modern semiconductor facility where wafers are subjected to wafer fabrication processes.

### 9.1 Radiation Detection Instrumentation

<u>Type</u>	<u>Model #</u>	<u># Available</u>	<u>Radiation Detected</u>
Ludlum Ratemeter	2200 or equivalent	3	alpha, beta, gamma
Victoreen Survey	491 or equivalent	1	alpha, beta, gamma

All above instruments are calibrated annually by the Manufacturer or certified Health Physics Lab to +/- 10% of the scale reading.

## 10.0 Radiation Safety Program

- These chips, wafers and semiconductor devices are not be incorporated in any food, beverage, cosmetic, drug or other commodity or product designed for ingestion or inhalation by or application to a human being.
- Harris Semiconductor requires the reactor supplying Irradiation services to certify that the material received at Harris is in compliance with our license limits for all radionuclides possessed.



License #37-24841-02 Amendment

**10.0 (cont.)**

- Harris performs surveys on every lot of material received.
- Harris files periodic reports as specified in NRC regulations. Audits are performed at least once per year to ensure material handling procedures for control of materials as well as record keeping is in accordance with license conditions and NRC regulations.

**10.1 Personnel Monitoring**

- a. Dosimeter badges when required.
- b. Survey Instrumentation ( see 9.1).

**10.2 Routine Surveys**

- a. Surveys of received materials.
- b. Annual area survey.

**10.3 Securing Licensed Materials**

Received rejected materials and any generated waste materials are stored in locked steel cabinet(s). Access to the cabinet(s) is limited to trained personnel.

**11.0 Waste Management**

All waste is in the form of solid silicon wafers, pieces or chips. These materials are labeled as generated with the qty, date, radiation reading, operator initials and recorded in a log. The scrap materials are stored in containers in a locked designated area. Normally solid waste materials are very minimal. Waste disposal is by decay to background or less levels and transfer to a licensee specifically authorized to accept it..

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM  
AND  
REGIONAL LICENSING SECTIONS

(FOR LFMS USE)  
INFORMATION FROM LTS

PROGRAM CODE: 03214  
STATUS CODE: 0  
FEE CATEGORY: 38  
EXP. DATE: 20020430  
FEE COMMENTS: -----  
DECOM FIN ASSUR REQD: N  
.....

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED

APPLICANT/LICENSEE: HARRIS SEMICONDUCTOR  
RECEIVED DATE: 970312  
DOCKET NO: 3032138  
CONTROL NO.: 124372  
LICENSE NO.: 37-24841-02  
ACTION TYPE: AMENDMENT

2. FEE ATTACHED

AMOUNT: -----  
CHECK NO.: -----

3. COMMENTS

REF. 124378 (COMBINGA  
CHECK FOR BOTH ACTIONS  
124371/124372).

SIGNED Mr. A. Perkins  
DATE 3/13/97

B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE 03 IS ENTERED 1)

1. FEE CATEGORY AND AMOUNT: 38 \$580

2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED FOR:  
AMENDMENT -----  
RENEWAL -----  
LICENSE -----

3. OTHER -----  
-----

SIGNED -----  
DATE -----

Log APR 3  
Remitter -----  
Check No 418900  
Amount \$940 \$580  
Fee Category 38  
Type of Fee AND  
Date Check Rec'd 4/2/97  
Date Completed -----  
By: BB

(Also see 124371)  
\$360 applied to  
Control 124371  
3E fee and

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