

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 the application dated May 24, 1995,	
1. Harris Semiconductor		3. License Number 37-24841-01 is amended in its entirety to read as follows:	
2. 125 Crestwood Road Mountaintop, PA 18707-2189		4. Expiration Date July 31, 2001	
		5. Docket or Reference No. 030-31330	
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. Cobalt 60	A. Sealed sources (AECL/Nordion International, Inc. Model C-166, C-167, C-185, or C-198)	A. Not to exceed 1090 curies per source and 25,000 curies total	
9. Authorized use			
A. In AECL/Nordion International, Inc. Gammacell Model 220 Irradiator for the irradiation of material except explosives, flammables, or corrosives.			

CONDITIONS

10. Licensed material may be used only at the licensee's facilities located at 125 Crestwood Road, Mountaintop, Pennsylvania.
11. A. Licensed material shall only be used by, or under the supervision and in the physical presence of, Peter F. Borza, James P. Murphy, or individuals who have received the training described in the application dated May 24, 1995 and have been designated in writing by the Radiation Safety Officer.
- B. The Radiation Safety Officer for this license is Peter F. Borza.
12. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
13. A. Sealed sources and detector cells containing licensed material shall be tested for leakage and/or contamination at intervals not to exceed six months or at such other intervals as are specified by the certificate of registration referred to in 10 CFR 32.210, not to exceed three years.
- B. Notwithstanding Paragraph A of this Condition, sealed sources designed to emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed three months.

ML 10

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

37-24841-01

Docket or Reference Number

030-31330

Amendment No. 01

- C. In the absence of a certificate from a transferor indicating that a leak test has been made within six months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.
- D. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to any use or transfer as a sealed source.
- E. Sealed sources and detector cells need not be leak tested if:
- (i) they contain only hydrogen-3; or
 - (ii) they contain only a radioactive gas; or
 - (iii) the half-life of the isotope is 30 days or less; or
 - (iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or
 - (v) they are not designed to emit alpha particles, are in storage, and are not being used. However, when they are removed from storage for use or transfer to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source or detector cell shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.
- F. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission and the source or detector cell shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within five days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety Branch, 475 Allendale Road, King of Prussia, Pennsylvania 19406. The report shall specify the source or detector cell involved, the test results, and corrective action taken.
- G. The licensee is authorized to collect leak test samples for analysis by Applied Health Physics. Alternatively, tests for leakage and/or contamination may be performed by persons specifically licensed by the Commission or an Agreement State to perform such services.
14. The licensee shall not perform repairs or alterations of the irradiator involving removal of shielding or access to the licensed material. Removal, replacement, and disposal of sealed sources in the irradiator shall be performed by persons specifically licensed by the Commission or an Agreement State to perform such services.
15. The licensee shall conduct a physical inventory every six months to account for all sealed sources and devices containing licensed material received and possessed under the license.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

37-24841-01

Docket or Reference Number

030-31330

Amendment No. 01

16. The procedures contained in the manufacturer's instruction manual for the irradiator authorized by this license shall be followed and a copy of this manual shall be made available to each person using or having responsibility for the use of the device.
17. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
18. 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 May 24, 1995
 - B. Letter dated May 29, 1996

Date

JUL - 3 1996

For the U.S. Nuclear Regulatory Commission

Original Signed By:

Steven R. Courtemanche

By

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

JUL - 3 1996

License No. 37-24841-01
Docket No. 030-31330
Control No. 121857

Raymond T. Ford
Director, Manufacturing
Harris Semiconductor
125 Crestwood Road
Mountaintop, PA 18707-2189

Dear Mr. Ford:

Please review the enclosed document carefully and be sure that you understand all conditions. 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.

Please be advised that your license expires at the end of the day, in the month, and year stated in the license. Until your license is terminated, you must conduct your program involving byproduct materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

1. Operate in accordance with NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Notify NRC, in writing, within 30 days:
 - a. when an authorized user or Radiation Safety Officer, permanently discontinues performance of duties under the license or has a name change; or
 - b. when the mailing address on the license changes (no fee is required if the location of byproduct material remains the same).
3. In accordance with 10 CFR 30.36(b) and/or license condition, notify NRC, promptly, in writing, and request termination of the license when you decide to terminate all activities involving materials authorized under the license.

OFFICIAL RECORD COPY

10

4. Request and obtain a license amendment before you:
 - a. permit anyone to work as an authorized user under the license;
 - b. change Radiation Safety Officer;
 - c. order byproduct material in excess of the amount, or radionuclide, or form different than authorized on the license;
 - d. add or change the areas of use, or address or addresses of use identified in the license application or on the license; or
 - e. change ownership of your organization.
5. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date of your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of byproduct material after your license expires is a violation of NRC regulations. A license will not normally be renewed, except on a case-by-case basis, in instances where licensed material has never been possessed or used.

In addition, please note that NRC Form 313 requires the applicant, by his/her signature, to verify that the applicant understands that all statements contained in the application are true and correct to the best of the applicant's knowledge. The signatory for the application should be the licensee or a certifying official of the licensee rather than the Radiation Safety Officer or a consultant.

You will be periodically inspected by the NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC will result in enforcement action against you. This could include issuance of a notice of violation, or imposition of a civil penalty, or an order suspending, modifying or revoking your license as specified in the "General Statement of Policy and Procedure for NRC Enforcement Actions," (Enforcement Policy), NUREG 1600.

Since serious consequences to employees and the public can result from failure to comply with NRC requirements, prompt and vigorous enforcement action will be taken when dealing with licensees who do not achieve the necessary meticulous attention to detail and the high standard of compliance which NRC expects of its licensees.

Raymond T. Ford
Harris Semiconductor

-3-

Thank you for your cooperation.

Sincerely,

Original Signed By:
Steven R. Courtemanche

Steven R. Courtemanche
Division of Nuclear Materials Safety

License No. 37-24841-01
Docket No. 030-31330
Control No. 121857

Enclosures:

1. Amendment No. 01
2. 10 CFR Parts 2, 19, 20, 21, 30, 36, and 170
3. NRC Forms 3 and 313

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	SCourtemanche/src						
DATE	06/25/96	06/	/96	06/	/96	06/	/96

OFFICIAL RECORD COPY



HARRIS
IRRADIATOR

125 Crestwood Road
Mountaintop, PA 18707

MS 16
K-4

May 29, 1996

US NUCLEAR REGULATORY COMMISSION
Region I
475 Allendale Road
King Of Prussia, PA 19406-1415

Attention: Stephen R. Courtemanche
Division of Nuclear Materials Safety

SUBJECT: License No. 37-24841-01, Docket No. 030-31330, Control No. 121857
Response to May 4, 1996 Letter regarding Harris Renewal Application dated May 24, 1995

Dear Mr. Courtemanche:

The following additional information is provided in reference to your letter of May 4, 1996 in order to continue NRC review of our renewal application of 5/24/95. My responses are in the same order as the questions in your letter.

1. No. I do not wish to remove authorization for AECL/Nordion International Inc. Model Nos C-166 and C-167 sealed sources. The source model nos. should be listed as C-166, C-167, C-185 and C-198.
2. Yes, I confirm that James P. Murphy is to be added to the license as a specifically named user of the Gammacell Irradiator.
3. A qualified Instructor may be the irradiator manufacturer's Representative, an experienced irradiator Operator or a Health Physicist Consultant familiar with (1) knowledge of the basic design, operation and preventative maintenance of our irradiator, (2) principles and practices of radiation protection including the biological effects of radiation, (3) written procedures for routine and emergency irradiator operations, and (4) Harris license application, the actual NRC license and NRC regulations.
4. Yes, the floor supporting the irradiator is a ground floor with no floors beneath it.
5. Yes, the room housing the Gammacell is posted in accordance with 10 CFR 20.1902.
6. Yes, survey meters will be also calibrated if the servicing involves more than just battery replacement and the servicing occurs prior to the next scheduled calibration.
7. Disposal of all radioactive waste shall be performed by transfer to a licensee specifically authorized to accept it.
8. Page 4, Item 11.A. has been changed to reflect: Dose to Embryo/Fetus 500 mrem during Gestation period. Women must declare their pregnancy in writing before fetal monitoring can be initiated.

OFFICIAL RECORD COPY

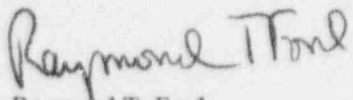
ML 10

121857
JUN - 4 1996

9. Refer to question 8 above.

Please do not hesitate to contact me if further information is required for our license renewal

Sincerely,

A handwritten signature in cursive script that reads "Raymond T. Ford". The signature is written in dark ink and is positioned above the printed name and address.

Raymond T. Ford
Director, Manufacturing
Harris Semiconductor
125 Crestwood Road
Mountaintop, PA 18707-2189



ITEM #5 - NRC form 313

Radioactive Material to be Possessed

- a. Source: Cobalt-60 in solid form doubly encapsulated in stainless steel tubing called pencils. Each pencil contains 1090 curies of Cobalt-60. The source chamber is surrounded with 10 inches of solid Lead shielding.
- b. Source Model No. : Nordion International Inc. sealed source Model Nos. C-166, C-167, C-185 or C-198.
- c. Total No. of sources in the Irradiator: 8 pencils.
- d. Maximum amount of Cobalt-60 to be possessed in the Irradiator at any one time: 25,000 curies.

NOTE: A copy of the AECL/Nordion International Inc. Certificate of Registration with the USNRC is attached for reference. Certificate No. NR-169-D-119-U

ITEM #6 - NRC form 313

Purpose For Which Licensed Material Will Be Used

To be used in a Nordion International Inc. Model GC-220 Gammacell Irradiator for irradiation of materials other than explosives or highly flammable or corrosive products.

ITEM #7 - NRC form 313

Individuals Responsible For Radiation Safety Program and Their Training and Experience

Radiation Safety Officer: Peter F. Borza

Background and Training

AB in Chemistry - 1966; MS in Chemical Engineering - 1989

These curriculum deal with radiation and nuclear energy in required Physics and Chemistry courses.

16 hours training 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.

10. Natural Background Radiation

The average individual in the USA received about 360 mrem/yr. of radiation exposure from sources that are part of our natural and manmade environment. This is broken down as follows:

Radon	200 mrem/yr.
Medical/Dental Radiation	40 mrem/yr.
Cosmic Radiation	30 mrem/yr.
Food, Water, Air	40 mrem/yr.
Terrestrial	40 mrem/yr.
Consumer Products	10 mrem/yr.

11. A. Basic Radiation Exposure Limits

The table below gives the basic occupational radiation exposure limits in millirem. These limits represent the maximum allowable doses. You should always keep your exposure as low as reasonably achievable.

<u>Location of Exposure</u>	<u>Maximum Limit</u>
Whole Body	5000 m rem - Annually
Lens of Eye	15000 m rem - Annually
Skin or Any Extremities	50000 m rem - Annually
Dose to Embryo/Fetus **	500 m rem - During Gestation Period
General Public	100 m rem - Annually

* Medical and dental exposures for diagnostic and/or therapeutic purposes are not included in the dose limits.

* Occupational dose limits for minors = 10% of listed.

** Women must declare pregnancy in writing before fetal monitoring can be initiated.

Detailed information on radiation safety regulations can be found in US Nuclear regulatory Commission Regulations, Title 10, Part 20, Code of Federal Regulations.

MAY - 4 1996

License No. 37-24841-01
Docket No. 030-31330
Control No. 121857

Raymond T. Ford
Director, Manufacturing
Harris Semiconductor
125 Crestwood Road
Mountaintop, PA 18707-2189

Dear Mr. Ford:

This is in reference to your renewal application dated May 24, 1995. In order to continue our review, we need the following additional information:

1. Please confirm that you want the authorization for AECL/Nordion International Inc. Model Nos. C-166 and C-167 sealed sources removed from your license.
2. Confirm that James P. Murphy is to be added to the license as a specifically named person.
3. Page 1, Item 8, of your application states that individuals other than Peter F. Borza may teach your course on radiation safety and the use of the Gammacell 220. Provide the minimum qualifications that an instructor must have in order to teach the course.
4. Either confirm that the floor has been tested to support the irradiator, or that there are no rooms under the room where the irradiator is.
5. Confirm that the room is posted in accordance with 10 CFR 20.1902.
6. Page 3, Item 10.2, of your application states that survey meters will be calibrated by the manufacturer at least annually. Confirm that survey meters shall also be calibrated if the servicing involves more than just battery replacement and the servicing occurs prior to the next scheduled calibration.
7. Please describe how licensed material shall be disposed of when you no longer require it.
8. Page 4, Item 11.A. of your Radiation Safety Training gives the limit for the dose to an embryo/fetus as an annual limit. This limit should be changed to reflect that the period should only be for the gestation period.

OFFICIAL RECORD COPY

ML 10

Raymond T. Ford
Harris Semiconductor

-2-


9. Note that 10 CFR 20.1003 states, in part, that in order to be a declared pregnant worker, the individual must do so in writing.

We will continue our review upon receipt of this information. Please reply in duplicate to my attention at the Region I Office and refer to Mail Control No. 121857. If you have any technical questions regarding this deficiency letter, please call me at (610) 337-5075.

In order to continue prompt review of your application, we request that you submit your response to this letter within 30 calendar days from the date of this letter.

Sincerely,

Original Signed By:
Francis M. Costello

 Steven R. Courtemanche
Division of Nuclear Materials Safety

License No. 37-24841-01
Docket No. 030-31330
Control No. 121857

Enclosures:

1. 10 CFR Parts 19, 20, 21, 30, and 36
2. Regulatory Guide 10.9

DOCUMENT NAME: R:\WPS\DLTR\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	N				
NAME	SCourtemanche/src							
DATE	05/02/96		05/ /96		05/ /96		05/ /96	

OFFICIAL RECORD COPY

JUN 15 1995

Raymond T. Ford
Director, Manufacturing
Harris Semiconductor
125 Crestwood Road
Mountaintop, PA 18707-2189

SUBJECT: LICENSE RENEWAL APPLICATION


Dear Mr. Ford:

This is to acknowledge receipt of your application for renewal of materials(s) license identified below. Your application is deemed timely filed, and accordingly, the license will not expire until final action has been taken by this office.

Any correspondence regarding the renewal application should reference the control number specified below.

Sincerely,

Original Signed By:
Cheryl K. Buracker

 Sheryl Villar, Chief
Licensing Assistance Section
Nuclear Materials Safety Branch
Division of Radiation Safety
and Safeguards

License No. 37-24841-01
Docket No. 030-31330
Control No. 121857

DOCUMENT NAME: S:\PENDING\HARRIS.DTL

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	DRSS/RI	N	/	N	/		
NAME	MPerkins/gcb	SVillar	CKB				
DATE	06/13/95	MMF	06/15/95	fd	06/ /95	06/ /95	

OFFICIAL RECORD COPY

ML 10



030-31330

X

May 23, 1995

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

Subject: Renewal of NRC License #37-24841-01
Expires 6/30/95 - Program Code: 03520

Gentlemen:

We are requesting renewal of NRC License #37-24841-01. Enclosed are two copies of a completed application for renewal and documents reflecting our current Radiation Safety Program.

Also enclosed is a check in the amount of \$760.00 as payment for the renewal fee, as established in the Schedule of Materials Fees found in 10 CFR 170.21.

Very truly yours,

HARRIS SEMICONDUCTOR

Peter F. Borza
Radiation Safety Officer

Enclosures

Licrad.sam/bh

cc: E. Scaran, Lic. & App. Radiation File
Melbourne: D. Bock, J. Steiner

121857

OFFICIAL RECORD COPY

ML 10

MAY 30 1995

APPLICATION FOR MATERIAL LICENSE

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 9 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.

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 30323-0199

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 _____

C. RENEWAL OF LICENSE NUMBER 37-24841-01

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

125 CRESTWOOD ROAD
MOUNTAINTOP, PA 18707-2189

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 3E

AMOUNT
ENCLOSED \$ 760.00

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

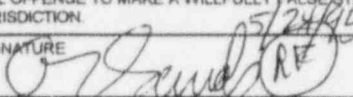
THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39 AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT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

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 740 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 - TYPED/PRINTED NAME AND TITLE

RAYMOND T. FORD, DIRECTOR, MANUFACTURING

SIGNATURE



DATE

5-24-95

FOR NRC USE ONLY

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

121857

ITEM #5 - NRC form 313

Radioactive Material To Be Possessed

- a. Source: Cobalt - 60 in solid form doubly encapsulated in stainless steel pencils. Each pencil contains 1090 curies of Cobalt - 60. The source chamber is surrounded with 10 inches of solid Lead.
- b. Source Model No.: Sealed source Model No. C-198, AECL/Nordion International Inc.
- c. Total No. of sources in the Irradiator: 8 pencils.
- d. Maximum amount of Cobalt - 60 to be possessed in the Irradiator at any one time: 25,000 curies.

NOTE: A copy of the AECL/Nordion International Inc. Certificate of Registration with USNRC is attached for reference. Certificate No. NR-169-D-119-U.

ITEM #6 - NRC form 313

Purpose For Which Licensed Material Will Be Used

To be used in a Gammacell 220 Irradiator for irradiation of materials other than explosive or highly flammable or corrosive products.

ITEM #7 - NRC form 313

Individuals Responsible For Radiation Safety Program And Their Training and Experience

Radiation Safety Officer: Peter F. Borza

Background and Training

AB in Chemistry - 1966/MS in Chemical Engineering - 1989

These curriculum deal with radiation and nuclear energy in required Physics and Chemistry courses.

16 hours training 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 - November 1989.

Spent 8 hours at Harris Semiconductor Somerville, N.J. reviewing Gammacell 220 operation and procedures prior to transfer of this equipment to Harris Semiconductor, Mountaintop, PA 1989.

User of Licensed Material: James P. Murphy

Background and Training

Jim is a degreed Physicist and is aware of Radiation and Nuclear energy through his course of study.

In 1989, Jim spent 8 hours with Zeno Streletz and Peter Borza at Harris Semiconductor, Somerville, N.J. reviewing operation procedures and calculations of dose for Gammacell 220 irradiation runs. He has also gained a more in-depth experience via working with the G.E. Valley Forge, PA. Irradiator site for more than 1 year.

Jim has supervised the Gammacell 220 operation for the past 5 years and obtained hands on experience in irradiator use and safety. He also is in close contact with AECL/Nordion International Inc. as the need arises.

ITEM #8 NRC form 313

Training For Individuals Working In or Frequenting Restricted Areas

The attached section entitled "Radiation Safety Training" is an outline of a training program to be given to all authorized persons working in or frequenting the Gammacell room. Peter F. Borza, RSO shall be the course director and will teach or cause the subject matter to be taught by a qualified Radiation Instructor. A multiple choice written test will be utilized to test the understanding of the training (attached). Records documenting the training of each authorized will be maintained. A multiple choice written test will be utilized to test the understanding of the training (attached). Records documenting the training of each authorized person will be maintained. James P. Murphy will train all irradiator operator in the operation and procedures involved in use of the Gammacell 220. On the job training will consist of several complete irradiations procedures under the supervision of James P. Murphy. A list of authorized /trained personnel shall be posted at the entrance to the Gammacell room for the purpose of notifying that only those on the authorized list are allowed in the restricted Gammacell area.

Occasionally, customer's of Harris Semiconductor, Mountaintop, PA wish to witness a test or to audit irradiator procedures as part of their Quality program. These auditors are required to adhere to training procedures established in the attached document entitled "Visitor's Procedure - Gammacell Irradiation Area", dated 7/24/91.

Item #9 NRC form 313

Facilities and Equipment

The Gammacell 220 Irradiator will be located adjacent to the High Rel test area on the ground floor. This area is a low population area away from the main plant traffic. The irradiator will be located in a separately constructed room with a locking door. Access to this equipment will be restricted to authorized persons who will be required to wear film badges while in the room. The door will be kept locked. The room will be constructed of non-combustible materials and be equipped with an automatic sprinkler system. Flammables or Corrosives shall not be stored within. The area will be designated as a restricted area.

Item #10 NRC form 313

Radiation Safety Program

- 10.1 All authorized personnel entering the Gammacell room will be required to wear a type 11 film badge that will be changed on a monthly basis. Exposure reports will be reviewed monthly by both Siemens Gammasonic and Harris for exposure levels. Annually, individual reports are given to all badge holders. Monthly reports are available for employee review.
- 10.2 A calibrated, operable survey meter that can measure up to several hundred milliroentgens per hour will be available. The meter will be calibrated within +/-20% of the actual values over the range of the instrument. Calibration records shall be kept for a minimum of 2 years after each calibration. The instrument will be calibrated by the manufacturer at least annually.
- 10.3 Leak Testing: Applied Health Physics, Inc. of 2986 Industrial Blvd, Bethel Park, PA. 18102 shall be retained on annual contract to perform the required wipe testing at intervals not to exceed 6 months. Their NRC licence no. is 37-09135-01. The results will be evaluated and reported to Harris biannually.
- 10.4 (Gammacell Operation procedure attached). Operating and emergency procedures will be provided to each person who uses the irradiator. These will be maintained at the Gammacell control station and posted in a visible area near the station.

Item #10 NRC form 313

- 10.5 The licensee shall not perform repairs or alterations of the irradiator involving removal of shielding or access to the licensed material. Removal, replacement and disposal of sealed sources in the irradiator shall be performed by a person specifically licensed by NRC or an agreement state for such work.

Item #11 NRC form 313

Waste Management

There will be no hazardous or radioactive waste generated from operation of this irradiator.

RADIATION SAFETY TRAINING

1. Instruction

The Pennsylvania Bureau of Radiation Protection and the US NRC both mandate that all individuals working in or frequenting the vicinity of radiation producing machines or radioactive materials shall be properly and adequately instructed in the use of necessary safeguards and procedures and be supplied with such safety devices as may be required.

2. Rules, regulations and Operating Procedures

Each licensee must post NRC and Pennsylvania Bureau of Radiation "Notice to Employees" as well as information describing pertinent documents, regulations and operating procedures stating where they can be examined by employees. All of the above are available from Peter F. Borza, Radiation Safety Officer.

3. Supervision

As dictated by our Nuclear Regulatory Commission Materials License, our licensed material, the Gammacells are under the supervision of James P. Murphy, Hi Rel Engineering.

4. Radiation

Radiation is defined as any or all of the following: Alpha Rays, Beta Rays, Gamma Rays, X-rays, Neutrons, high speed electrons, high speed protons, and other atomic particles; but not sound or radio waves or visible, infrared or ultraviolet light.

5. The Radiation Emitting Sources In This Plant Are

Nine (9) Ion Implanters - Emit X-rays
Two (2) Scanning Electron Microscopes - Emit X-rays
One (1) Radiographic X-ray - Emits X-rays.
One (1) Gammacell Irradiator - Has source containing 8 Cobalt
Sixty (60) pencils emitting Gamma radiation.

All of the radiation emitting equipment is registered with the Commonwealth of Pennsylvania. The Gammacell is licensed by the Federal Government Via NRC.

The radiation emitting sources in this plant can be broken up into two types. The first type emits X-radiation by generating high voltages. This type of equipment only emits radiation when in use. When this equipment is shut off, it does not emit radiation of any kind.

The second type of radiation source are those pieces of equipment that actually contain a radioactive isotope. The Gammacell is the only piece of equipment of this kind here in Mountaintop other than equipment containing minute amounts of radioactivity. The Gammacell contains Cobalt 60 as the source. A radioactive isotope such as Cobalt 60 continuously emits radioactivity. The exposure to such a radioactive source is controlled through shielding the isotope. In the case of the Gammacell, the isotope is surrounded by ten (10) inches of solid Lead. The radioactivity is unable to penetrate this Lead shield and thus the user is never exposed to the source material.

The Gammacell is used to test the effect of radiation on various solid state components that must be "rad hard". That is, resistant to the effects of radiation. Objects to be irradiated are lowered into the shielded capsule and then exposed to gamma radiation. This type of radiation does not result in residual radioactivity in the irradiated part.

6. Surveys/Wipe Tests

All radiation equipment is surveyed every six months by Peter Borza, R.S.O. Wipe tests on sealed sources will be done by Applied Health Physics, Bethel, PA every six (6) months.

7. Radio Frequency Radiation

Radio Frequency Radiation is defined as electromagnetic fields within the frequency range of 10 KHz to 100 KHz in the federal recommendations.

Manmade RF radiation is part of modern society. Applications are found in communications, transportation, defense, industry, consumer products, security and medicine. Essentially, everyone in the United States is continuously exposed to low levels of RF radiation and some people who live or work near powerful sources are exposed to higher levels. RF radiation sources have steadily increased in number and their uses have diversified so that a general increase in exposure levels in the environment has occurred. Various effects have been observed in experimental animals exposed to intensities found in the general environment but human data do not indicate any relationship between prolonged low level RF radiation exposure and increased mortality or morbidity including cancer incidence.

8. Definitions taken from Title 10 CFR 20 NRC Regulations

One Curie - Equal to that amount of a specific radionuclide which disintegrates at a rate of 37 billion disintegration's per second.

8. Definitions taken from Title 10 CFR 20 NRC Regulations

One Rad - The dose corresponding to the absorption of 100 ergs per gram. A measure of the dose of any radiation to body tissues in terms of the energy absorbed per unit mass of the tissue.

Rem is the special unit of any of the quantities expressed as dose equivalent. The dose equivalent is equal to the absorbed dose in rads multiplied by the quality factor (1 rem = 0.01 sievert).

Sievert is the SI unit of any of the quantities expressed as dose equivalent. The dose equivalent in sieverts is equal to the absorbed dose in grays multiplied by the quality factor (1 SV = 100 rems).

Gray (Gy) is the SI unit of absorbed dose of 1 Joule/Kilogram (100 rads).

One Roentgen - The quantity of X or gamma radiation such that the associated corpuscular emission per 0.001293 grams of air produces, in air, ions carrying one electrostatic unit of quantity of electricity of either sign.

Radiation Area - An area which is accessible to individuals and in which there exists radiation at such levels that a major portion of the body could receive in any one hour a dose in excess of 5 millirem, at 30 centimeters from the radiation source or from any surface that the radiation penetrates.

Restricted Area - Any area access to which is controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials.

9. Film Badges

All employees working in radiation areas must for their own protection wear a film radiation badge. Siemens, a Health Physics Firm, supplies Harris with Type 11 Film Badges. A film badge may be obtained from Peter Borza, (Ext. 398) or Arnie Mrozinski (Ext. 207). The badge is simply a piece of film that when exposed to radiation will become a darker color. The shade of the film can be correlated with known data to estimate the accumulated dose. Siemens collects the badges at the end of each monitoring period (usually one month) and generates a report of the exposure estimated for each badge. The reports are reviewed by both Siemens and by Harris every month and all badge holders may see these reports at their request.

10. Natural Background Radiation

The average individual in the USA received about 360 mrem/yr. of radiation exposure from sources that are part of our natural and manmade environment. This is broken down as follows:

Radon	200 mrem/yr.
Medical/Dental Radiation	40 mrem/yr.
Cosmic Radiation	30 mrem/yr.
Food, Water, Air	40 mrem/yr.
Terrestrial	40 mrem/yr.
Consumer Products	10 mrem/yr.

11. A. Basic Radiation Exposure Limits

The table below gives the basic occupational radiation exposure limits in millirem. These limits represent the maximum allowable doses. You should always keep your exposure as low as reasonably achievable.

<u>Location of Exposure</u>	<u>Annual Limit</u>
Whole Body	5000 m rem
Lens of Eye	15000 m rem
Skin or Any Extremities	50000 m rem
Dose to Embryo/Fetus	500 m rem
General Public	100 m rem

* Medical and dental exposures for diagnostic and/or therapeutic purposes are not included in the dose limits.

* Occupational dose limits for minors = 10% of listed.

* Women must declare pregnancy before fetal monitoring can be initiated.

Detailed information on radiation safety regulations can be found in US Nuclear regulatory Commission Regulations, Title 10, Part 20, Code of Federal Regulations.

11. B. Radiation Protection Techniques

Time - Refers to duration of exposure time. The shorter the time the less the exposure. Longer times increase the likelihood for biological effects. Used in reducing exposure to high radiation fields.

Distance - Refers to the variation of radiation intensity with distance from the source.

$$\text{Intensity} = 1/d^2$$

Intensity of radiation varies as the reciprocal of the square of the distance. Used to reduce exposure to high radiation fields. (Ex.)

Source	2 ft. = 1/4	5 ft. = 1/25	10 ft. = 1/100
50 mR	12.5 mR	2 mR	0.5 mR

Shielding - Refers primarily to Lead although concrete and other materials also may be used. Each material possesses the ability to block certain levels or radiation for each thickness known as half value layers. Therefore, it is possible to calculate the thickness of Lead or Concrete necessary to reduce a radiation field to safe levels. For example, the Co-60 source in the Gammacell requires 10 inches of Lead to reduce the gamma radiation to safe levels. Alpha radiation may be stopped by a sheet of paper. Beta radiation requires about 1/24 inch of Aluminum to stop it. The degree of shielding depends on the intensity of the radiation field.

11. C. Radiation Detection Instruments

In addition to the film badge program described in Item #9, the Gammacell Room will be equipped with a rate meter and a probe. These will be attached to a speaker such that personnel in the room may hear the audible clicks and view the meter reading. A calibrated, operable survey meter will be available for routine use in the room. All authorized personnel will be instructed in proper use of these equipments.

12. Safety Measures

It is impossible to completely cover safety steps for each individual piece of equipment in this short text. The following are general safety steps:

- A. Only trained, qualified operators should be operating radiation emitting equipment. No other personnel should enter these areas.
- B. Badge holders must wear their badges in radiation areas.
- C. Care must be taken not to exceed voltage limits on high voltage equipment.
- D. Interlocks on equipment must never be jumped or by-passed.
- E. Lead aprons should be worn where applicable.
- F. Know your equipment or do not use it. You should be completely checked out and familiar with its use.
- G. The Gammacell 220 must never be moved unless Atomic Energy of Canada/Nordion Int. Inc. comes and prepares it for the move.
- H. All equipment must be provided with a lock so that it may be kept from being used by anyone except a qualified operator.
- I. Everyone connected with radiation work should read the Pennsylvania Bureau of Radiation Protection Administrative Code, Title 25, Chapters 219 and 220 and the United States Nuclear Regulatory Commission Rules and Regulations, Title 10 CFR Parts 19 and 20. They should also be familiar with the State and Federal documents entitled "Notice to Employees".
- J. If you have any questions concerning radiation safety, please contact Pete Borza, R.S.O. on Ext. 398

13. Compliance With Dose Limits for
Individual Members of the Public - 10 CFR 20.1302

Surveys shall be made of radiation levels in unrestricted and controlled areas, and radioactive materials in effluents released to unrestricted and controlled areas to demonstrate compliance with the dose limits for the public per 10 CFR 20.1301. The total effective dose equivalent to individual members of the public from the licensed operation does not exceed 100 m rems in a year. The dose in any unrestricted area from external sources does not exceed 2 m rems in any one hour.

14. Records of Individual Monitoring Results

Per 10 CFR 20.1502 each licensee as a minimum shall monitor occupational exposure to radiation and shall supply and require the use of individual monitoring devices by

1. Adults likely to receive in one (1) year from sources external to the body, a dose in excess of 10% of the limits in 10 CFR 20.1201 A.
2. Minors and declared pregnant women likely to receive from external sources to the body, a dose in excess of 10% of the limits in 10 CFR 20.1207 or 10 CFR 20.1208.
3. Individuals entering a very high radiation area.

Each licensee shall maintain records of doses received by all individuals for whom monitoring was required pursuant to 10 CFR 20.1502. These records shall be maintained on NRC Form 5 in accordance with the instructions for NRC Form 5. The licensee shall maintain the records of dose to an embryo/fetus with the records of dose to the declared pregnant woman. The declaration of pregnancy shall also be kept on file, but may be maintained separately from the dose records - 10 CFR 20.2106.

15. ALARA Commitment

By virtue of this Training Program and the Radiation Safety Program of monitoring and surveying the Gammacell Room and the authorized personnel assigned to this operation, Management and Radiation Protection Personnel are committed to keeping occupational exposures "as low as is reasonably achievable" (ALARA). Likewise, all authorized personnel are expected to be vigilant regarding following all safety practices and emergency procedures.

GAMMACELL OPERATION

May 24, 1995

Automatic Operation

1. Raise the drawer by first inserting the key in the key switch and turning it 90 deg clockwise, then press the UP rocker switch.
2. Open the collar doors by grasping the handles and pulling on the lever behind the right handle.
3. Slide the sample chamber locking ring to the right and remove the door by lifting it up and outwards.
4. Place the sample in the chamber. The access tube in the drawer top accommodates accessory tubes and electrical leads, which should be fitted in accordance with the instructions provided in the Gammacell 220 accessories manual.

NOTE: Materials expected to change state during irradiation should be placed in suitable containers.

Liquids expected to expand or boil should be provided with secondary containers for overflow, or vented to one of the access tubes. The sample chamber and source cage will not withstand repeated spills of corrosive materials.

5. Replace the sample chamber door with a forward and downward motion. Move the locking ring to the left until it snaps into position. If difficulties are experienced check that the door is correctly positioned in the port.
6. Close the collar doors, the left one first; ensure that the latch locks the door in place.
7. Set the required irradiation time on the digital timer in the following manner:
 - a. Push the timer reset knob, turn it clockwise 90 deg, and release. The white line on the knob should be horizontal.
 - b. Open the hinged cover which protects the predetermining drums. Turn the knurled wheels either direction until the desired number sequence appears in the windows.
 - c. Rotate the selector switch to hours, minutes or seconds. Close the hinged cover and turn the timer reset knob counterclockwise; press the reset knob to set the timer.

GAMMACELL OPERATION

8. Push the DOWN switch. The drawer will lower to the irradiating position, activate the timer, and remain there until the preset time interval has elapsed when it will automatically raise.
9. To remove the sample, repeat steps 2 and 3.

Manual Operation

1. For initial set up read the preceding steps 2 to 6.
2. Rotate the selector switch to MANUAL.
3. Press the DOWN switch. The drawer will lower and remain there indefinitely until the UP switch is operated.

Power Failure

In the event of a power failure the timer will stop and it will be necessary to raise the drawer manually.

1. Turn the key switch to the OFF position.
2. Spring out the large round button near the lower right corner of the back cover.
3. Push the crank (Figure 2) through the hole until it snaps into the extension on the input shaft of the reducer.
4. Crank in a clockwise direction to raise the drawer.

NOTE:

1. If it is necessary to change an operation time do not alter the digit settings while the drawer is down and the timer is operating. Raise the drawer and set the timer as described in AUTOMATIC OPERATION, step 7.
2. On completion of a timed operation the timer can be reset to the same operation time by depressing the reset knob.
3. If it is required that the drawer be raised during an operation, the timer will store the remaining portion of the preset time until the operation is resumed.

GAMMACELL 220 - GENERAL RULES

May 24, 1995

1. High - Rel Engineering is the sole custodian of the Gammacell and scheduler of its use.
2. Entrance to the Gammacell room is limited to personnel listed on the Approved Users List.
3. Anyone operating the Gammacell equipment is required to have taken the Gammacell training session, passed the 25 question exam, obtained at least 4 hours of supervised on the job training and signed the instruction manual issued by the manufacturer (AECL/NORDION Int. inc.).
4. Personal safety film badges must be worn in the Gammacell room.
5. A record of Gammacell use must be maintained by the user after each use by recording the name, the department and the time of use. This record is to be entered into the log book located in the Gammacell room.
6. No smoking or eating is permitted in the Gammacell room.
7. Personnel in training are only allowed in the Gammacell room when under the supervision of an authorized user.
8. Report immediately any increases in radioactivity as indicated by the ratemeter located in the Gammacell room.
9. The hinged Lead collar on the top of the reactor must never be opened except for the duration of loading or unloading of the Gammacell.
10. The Lead hinged plug on the top of the Gammacell should only be removed during the setting of the lead wires.
11. Keep the inside of the elevator (its floor) and the grooves of the elevator cover clean and dust particle free. Any dirt will interfere with smooth closing of the elevator cover. Never use force to insert this cover. Check for burrs or bending. The cover is made of Aluminum. Gently open (or close) the Lead collar, simultaneously pressing down the interlock button.
12. No fixture to be inserted into the elevator may exceed diameter 5.5" and height 7.5". These fixtures should preferably have a self centering (aligning) feature to insure reproducible radiation doses.
13. Any questions should be referred to J. Murphy (x235) or Peter Borza (x398).

Dimensions	Centimeters	Inches
Overall Width	103.5	40.75
Overall Length	152.4	60.0
Overall Height (drawer up)	212.4	83.6
Overall Height (drawer down)	157.8	62.2
Weight	4,005 kg	(8,830 lb)
Floor Loading	2,584 kg/m ²	(519 lb/ft ²)

ELECTRICAL POWER REQUIREMENTS

220 Volts — 3 phase — 50 or 60 Hz — 0.75 kVA (motor).

The drawer can be operated manually by means of a crank in the event of power failure.

CONTROL PANEL

- Timer with a range of 0.1 — 999.9 calibrated in minutes and seconds. The timer is automatically repetitive permitting continuous experiments of the same time intervals to be completed by pressing the reset button.
- Mode Selector Switch which enables the operator to select time units desired, or manual control.
- Drawer Up-Down Switch for raising or lowering the sample drawer under manual control.
- Control Circuit Fuse
- Key Operated Master Switch providing power supply to the unit and control panel.



**FIGURE 3
CONTROL
PANEL**

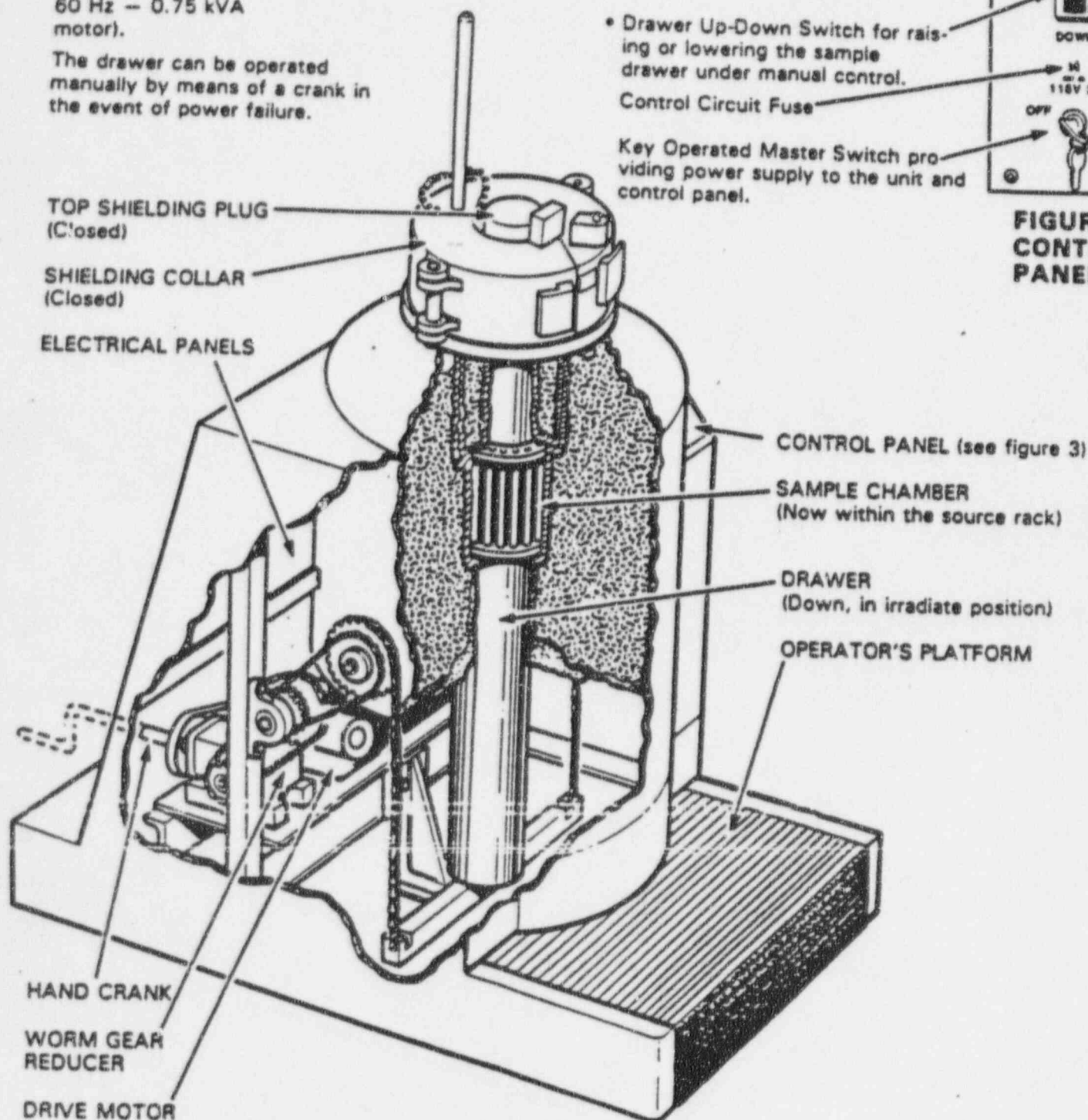


FIGURE 2 GAMMACELL 220 IN IRRADIATE POSITION.



GAMMACELL SAFETY PROCEDURES

1. Only trained, authorized personnel may operate the Gammacell Irradiator equipment. No other personnel may enter the Gammacell room without authorization by Peter Borza, Radiation Safety Officer.
2. Film badge holders must wear their film badges at all times in the Gammacell area.
3. Interlocks on this equipment must never be jumped or by-passed.
4. Repairs or maintenance involving removal of Gammacell 220 Lead shielding shall not be done by Harris personnel.
5. Authorized Gammacell operators must complete Radiation Safety Training and work experience requirements prior to using the Gammacell equipment.
6. The Gammacell Irradiator must never be moved or relocated by Harris personnel. Nordion International Inc. or other NRC licensed contractors must prepare this equipment for any move.
7. The Gammacell 220 and the door to the Gammacell room are provided with keyed locks to prevent unauthorized operation. The room is to remain locked at all times. Only authorized personnel will be given access numbers.
8. Do not store corrosives or flammables in the Gammacell room.
9. Smoking, eating and drinking are not allowed in the Gammacell room.
10. A Gamma Ratemeter is installed in the Gammacell room as an operator alert device. Audible clicks will be heard at a normal rate of approximately 200 cpm. Immediately report unusual clicking rates of 1000 cpm or higher to Peter Borza, Radiation Safety Officer.
11. P. Borza will perform radiation surveys at a minimum of every 6 months. A file will be maintained.
12. Wipe testing for radioactive material/particles will be done every 6 months by Applied Health Physics. Files will be maintained by Peter Borza.
13. Questions concerning Radiation Safety will be directed to Peter Borza, Radiation Safety Officer. (x398).

P. Borza, RSO
5/23/95

GAMMACELL EMERGENCY PROCEDURES

1. In the event of a fire, leave the Gammacell room, lock the door and call Plant Emergency extension 555 to report the fire. Also notify Peter Borza, Radiation Safety Officer, ext 398.
2. In the event of jamming of the Gammacell elevator, turn the Gammacell power key to the "off" position, leave the room, lock the door and notify Jim Murphy, Irradiator Supervising Engineer or Peter Borza, Radiation Safety Officer.
3. In the case of evacuation of the plant due to fire drills or other reasons, leave the room, lock the door and evacuate the plant via normal evacuation exits.
4. In the event of a catastrophic radiation incident, immediately leave the room, lock the door and notify Peter Borza, Radiation Safety Officer, ext. 398. Per 10CFR20.2202 of the NRC regulations entitled "Notification of Incidents", a catastrophic release of radioactivity as defined in 10CFR20.2022 is reportable immediately to the NRC Operations Center by phone on 301-816-5100. Written follow-up reports are also required.

P. BORZA
RADIATION SAFETY OFFICER
5/23/95



EMERGENCY NOTIFICATION PROCEDURE

GAMMACELL IRRADIATOR ROOM

In the event of a Fire or other Emergency:

1. Secure/Lock the Gammacell room and evacuate all areas adjacent to the Gammacell Area. Keep personnel a minimum of 60 yards away.
2. Do not enter the Gammacell room!
3. In Plant Notification:
 - a. Call Emergency Phone ext 555
 - b. Call Peter Borza ext 398
 - c. Call Jim Murphy ext 235

3. After Hours Notification

- a. Call Emergency Phone ext 555
- b. Notify Peter Borza at home
- c. Notify Jim Murphy at home

P. Borza
Radiation Safety Officer
5/23/97

TO:	FROM:	DATE:
Distribution	P. Borza	7/24/91

Subject: Visitor's Procedure - Gammacell Irradiation Area

Attached is a procedure to be followed for visitors who require access to the Gammacell Irradiation area. This procedure was written to assure that Harris Semiconductor is in compliance with NRC regulations and licensed requirements and to provide for the safety and awareness of all visitors. It should be understood that visitors to the Gammacell room should be minimal to keep the risk of exposure from this operation low in order that we retain classification as a restricted area by NRC.

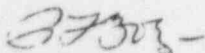

P. Borza

Radiation Safety Officer

Distribution: C. Chamberlin
G. Johnson
S. Mattei
A. Mrozinski
J. Murphy
R. Poremba
P. Roman

VISITOR PROCEDURE
GAMMACELL ROOM

- . The Gammacell room is designated as a restricted radiation area and as such is operated in accordance with our NRC licence requirements. Only authorized persons who have been trained by J. Murphy and P. Borza may operate the Irradiator. Unauthorized personnel/visitors may not
- . Persons entering the Gammacell area must wear a dosimeter available from J. Murphy/P. Borza. A temporary dosimeter will be assigned upon completion of a temporary dosimeter logsheet by the visitor. These logsheets will be kept on file in our Radiation files as required by NRC regulations.
RETURN THE DOSIMETER WHEN LEAVING THE GAMMACELL AREA.
- . Review the GAMMACELL SAFETY TRAINING MANUAL found in the Gammacell room. The emergency procedure and the basic radiation training information are particularly important safety training topics for visitors to this room.
DO NOT REMOVE THIS MANUAL FROM THE AREA



P. Borza
Radiation Safety Officer
C & P Lab X281

GAMMACELL ROOM
TEMPORARY DOSIMETER LOGSHEET

In accordance with 10CFR, Part 20 Section 202 of NRC regulations you are assigned a temporary dosimeter. Please wear the dosimeter in the chest area. BE SURE TO RETURN IT WHEN LEAVING THE AREA.

Please complete the form below:

NAME: _____

SOCIAL SECURITY NO: _____

DATE OF BIRTH: _____

COMPANY NAME: _____

PHONE NO: _____

ASSIGNED DOSIMETER ID. (CHECK ONE):

Visitor #1 _____ Visitor #2 _____

Exposure: _____ mR/hr Exposure: _____ mR/hr

NOTE: Temporary dosimeters will be assigned exclusively to each visitor
Dosimeter readings will be recorded and made available upon
request of the assignee.

Signature: _____

Date: _____

Authorized By: _____



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

MAR 15 1984



Atomic Energy of Canada Limited
ATTN: Mr. A. W. Tatham
Radiochemical Co.
413 March Road
P.O. Box 13500
Kanata, Ontario
Canada
K2K 1X8

Dear Mr. Tatham:

Thank you for your letter dated March 8, 1984, informing us of an omission in the registration sheet No. NR-169-D-119-U. We were previously informed of this omission by a materials licensing reviewer who experienced a similar problem. A corrected sheet to add the model C-185 and C-198 sources was issued to eliminate further problems.

Please find enclosed a copy of the corrected document.

Thank you for bringing this matter to our attention. If we can be of further assistance, please call. My phone number is (301) 427-4240.

Sincerely,


Steven L. Baggett
Material Certification and
Procedures Branch

Enclosure: Certificate No. NR-169-D-119-U

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE
(Corrected Copy)

NO.: NR169D119U

DATE: February 05, 1969

PAGE 1 OF 3

DEVICE TYPE: Irradiator

MODEL: Gammacell 220

MANUFACTURER/DISTRIBUTOR: Atomic Energy of Canada, Ltd.
Commercial Products
P. O. Box 93
Ottawa, Canada

MANUFACTURER/DISTRIBUTOR:

SEALED SOURCE MODEL DESIGNATION: AECL Model C-166 C-167, C-185, or C-198 source pencils

ISOTOPE: Cobalt-60

MAXIMUM ACTIVITY: 26,400 curies

LEAK TEST FREQUENCY:

PRINCIPAL USE: Gamma Irradiator, Category I

CUSTOM DEVICE: ☐ YES ☒ NO

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE
(Corrected Copy)

NO.: NR169D119U

DATE: February 05, 1969

PAGE 2 OF 3

DEVICE TYPE: Irradiator

DESCRIPTION:

The Gammacell 220 irradiator is a standard, self-contained floor model unit. Basically, the unit consists of an annular shaped source, a spherically-skewed lead shield around the source, and a long cylindrical drawer free to move vertically through the center of the source annulus. The unit's dimensions are 64" high ("irradiate" position) by 40" wide by 60" long and it weighs 8,250 lbs. The spherically-skewed lead shield provides a minimum of 7" (at the bottom) up to a maximum of 10" (at the top) of shielding toward the outside surfaces. The sample chamber, 6" in diameter by 8 1/2" high, is protected by a lift out closure door and can accommodate liquids, gases, electrical and mechanical connections through spiral (two 7/16" ID & one 5/16" ID) stainless steel access tubes (older models) or a 1-1/4" ID straight access tube (newer models) in the drawer top. The drawer, 59-3/16" in length and 6-1/2" in diameter, consists of an external (access tube) lead shielding plug 4" in diameter by 5-1/4" high, a 13" upper lead shield, the 8-1/2" sample chamber, a 32" lower lead shield, and 7/16" of steel encasement. The sample chamber moves with the drawer through a stroke of 19-5/8" to a position even with the two half collar shield doors. A single 7/16" spiral stainless steel tube passes through the lower lead shield of the sliding drawer for drainage purposes.

The sample chamber moves vertically from the "load" position to the "irradiate" position and back by means of an electrical motor and worm gear reducer through a chain and sprocket drive. The movement to either position does not exceed 7 sec. The position of the sample drawer is controlled by an "up-down" switch, which, if necessary, can override the programming timer.

The irradiator can use up to 48 AECL Model C-166, C-167, C-185, or C-198 source pencils. The pencils are spaced uniformly on a 8-1/4" diameter on a stainless steel source cage 8-13/16" in OD by 8-5/16" high. The unit has been licensed for up to 26,400 curies of cobalt-60.

* The irradiator is provided with limit switches and mechanical stops which control and limit movement of the drawer. Three microswitches mounted on the shielding collar ensure that (a) the door to the sample chamber is properly in place, (b) the locking ring to this door is snapped into position and (c) both half doors of the collar are closed prior to starting of the motor. The lead shielding plug covering the straight access tube is mechanically interlocked so that it cannot be opened with the drawer in the "irradiate" position and electrically interlocked so that the drawer cannot be lowered if this plug is not in its proper position. A

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE
(Corrected Copy)

NO.: NR169D119U

DATE: February 05, 1969

PAGE 3 OF 3

DEVICE TYPE: Irradiator

DESCRIPTION (CONT'D):

spring-loaded plunger operated by a solenoid located at the base of the main shield moves under the drawer in the "load" position to prevent the drawer from moving down unexpectedly. In the event of power failure the drawer can be returned to the "load" position by means of an emergency hand crank.

EXTERNAL RADIATION LEVELS:

The irradiator loaded with 11,520 curies was surveyed by the manufacturer and found to have at 1 meter from the source an average radiation level of 1.2 mr/hr and a maximum of 2.2 mr/hr (above top of drawer) with the source drawer in the "irradiate" position. The highest reading at 5 cm from the surface of the unit for this position was 10 mr/hr just above the collar and drawer on the left side. With the drawer in the "load" position the manufacturer found the unit to have at 1 meter from the source an average radiation level of 1.1 mr/hr and a maximum of 7 mr/hr (above top of drawer). The highest reading at 5 cm from the surface of the unit for this position was 10 mr/hr just above the collar and drawer on the left side. For a unit loaded with 26,400 curies of cobalt-60, a survey was made at 2" from the surface of the unit with the drawer in the "irradiate" position and radiation levels of 19 mr/hr at the front of the irradiator and 30 mr/hr at the top of the unit near the drawer were measured.

LIMITATIONS AND/OR OTHER CONSIDERATIONS OF USE:

An instruction manual entitled, "Instruction Manual, Gammacell 220", is available and can be obtained from the manufacturer. It contains, in general, a description of the unit, a discussion of the safety features, proposed operating procedures, general maintenance procedures, fault location procedures, leak test procedures, and installation procedures.

* The instruction manual described above may be referenced by the applicant with respect to the operating procedures he plans to follow during use of the unit, in lieu of providing his own. A license condition requesting a radiation survey of this unit and a report of the results is considered optional.

ISSUING AGENCY:

U.S. Atomic Energy Commission

December 29, 1989

Mr. Thomas Thompson
Material Licensing Section
U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

Subject: US-NRC Material License 29-04563-02
Control No. 111356

Dear Tom:

Per your request, I have attached a copy of the multiple choice questionnaire to be given to Gammacell operators as part of their training. I have also enclosed an answer sheet for your reference. The training will consist of approximately 2 hours of general discussion per our previously submitted "Radiation Safety Training" outline. This discussion will be followed by the administration of the attached questionnaire and a minimum of 4 hours of Gammacell work experience. Individuals successfully completing the above training will be authorized by the RSO, assigned a permanent film badge, and have their name placed on the list of authorized Gammacell operators. On-going training will be done as needed with occurring operational changes. All trained personnel will receive handout information consisting of a minimum of the training outline and the questionnaire for their future reference. We will maintain a record of each individual trained. At this point, the individuals to be trained have not been identified but we plan to keep the group as small as possible.

If you have further questions, please do not hesitate to contact me on 717-474-6761, ext. 281.

Sincerely,



Peter F. Borza, R.S.O.
Harris Semiconductor
Crestwood Road
Mountaintop, PA 18707

Gammacell Training Questionnaire:

This questionnaire contains 25 multiple choice questions relating to the training session that you have just completed. Please circle the letter that expresses the correct or most complete answer.

1. The primary sources of radiation in this plant consist of x-ray and gamma. The Gammacell irradiator contains
(a.) x-ray radiation.
(b.) gamma radiation.
2. The radiation source installed in the Gammacell irradiator is in the form of
(a.) Cobalt 60.
(b.) Cesium 137.
(c.) Strontium 90.
3. The source material in the Gammacell irradiator is considered a
(a.) sealed source.
(b.) unsealed source.
4. By definition, the Gammacell area is a restricted area. This means that
(a.) only company personnel
(b.) only trained and authorized personnel
are allowed to enter the room.
5. The film badges worn by authorized Gammacell personnel are intended to record cumulative whole body doseage for a period of
(a.) one day
(b.) one month
(c.) one week
before being replaced.
6. If the quarterly whole body dose of 1250 millirems is equivalent to 1.25 rems, the annual whole body dose of 5000 millirems is equivalent to
(a.) 50 rems.
(b.) 500 rems.
(c.) 5 rems.
7. NRC form 3, "Notice To Employees" is posted at the employees entrance with a notice that employees may contact
(a.) the Radiation Safety Officer
(b.) their Supervisor
(c.) OSHA
to review operating procedures and NRC regulations.

(2)

8. The Gammacell irradiator is shielded with
 - (a.) insulation.
 - (b.) Lead.
9. The Gammacell irradiator is considered a very safe piece of equipment because
 - (a.) it is shielded with 10" of Lead to very low radiation levels.
 - (b.) only a few people may operate it.
 - (c.) it is in a locked room.
10. Once installed, the Gammacell irradiator
 - (a.) needs no further attention.
 - (b.) must be monitored constantly.
 - (c.) will be monitored by established radiation safety testing procedures at prescribed intervals.
11. A radiation survey meter is used to determine the
 - (a.) kind of radiation.
 - (b.) intensity of radiation.
12. A radiation meter
 - (a.) contains radiation.
 - (b.) measures radiation.
13. The Gammacell irradiator may be
 - (a.) relocated at any time by plant personnel.
 - (b.) moved only by NRC licensed personnel after preparations.
14. Repairs or alterations on the Gammacell irradiator involving removal of Lead shielding or access to the source material may be performed by
 - (a.) plant maintenance.
 - (b.) NRC licensed personnel.
15. An emergency in the Gammacell room is defined as
 - (a.) a power failure.
 - (b.) an increase in radioactivity in the room.
 - (c.) malfunctioning of the equipment elevator.
 - (d.) all of the above.
16. In an emergency, the operator must
 - (a.) leave the room, lock the door, and notify supervision.
 - (b.) stay in the room and notify supervision.
17. The radioactive material in the irradiator
 - (a.) is constantly producing radiation.
 - (b.) produces radiation when the power switch is on.

18. The master switch on the irradiator control panel is operated with a key for the purpose of
 - (a.) assuring that only qualified operators use the irradiator.
 - (b.) providing power to the unit and control panel.
 - (c.) both.
19. If 18,000 curies of Cobalt 60 with a half life of 5.26 years is loaded into the Gammacell irradiator, after 5.26 years there will be
 - (a.) 9,000 curies remaining.
 - (b.) 18,000 curies remaining.
 - (c.) 27,000 curies remaining.
20. A Curie is an amount of radiation as opposed to a Rad which is
 - (a.) a dose of radiation.
 - (b.) an quality of radiation.
 - (c.) a type of radiation.
21. Survey meters give radiation measurements in terms of
 - (a.) grays.
 - (b.) mR/hr. or counts/min.
 - (c.) curies.
22. If 1 Roentgen per hr. is equivalent to 1000 milliroentgens per hr., then the value 0.002 Roentgens per hr. is equivalent to
 - (a.) 2 milliroentgens per hr.
 - (b.) 20 milliroentgens per hr.
 - (c.) 200 milliroentgens per hr.
23. Exposure to Gammacell source radiation is primarily controlled by
 - (a.) shielding with Lead.
 - (b.) wearing of radiation film badges.
 - (c.) keeping the door to the room locked.
24. A ratemeter is installed in the Gammacell room for the purpose of
 - (a.) providing radiation levels to personnel at all times while in the room.
 - (b.) control and shut off of the radiation in the Gammacell.
25. If the ratemeter click rate exceeds the safe level and the alarm sounds
 - (a.) immediately leave the room, lock the door, and notify supervision.
 - (b.) reset the alarm and wait for supervision to arrive.

(4)

Questionnaire - Answer Sheet

1. b
2. a
3. a
4. b
5. b
6. c
7. a
8. b
9. a
10. c
11. b
12. b
13. b
14. b
15. d
16. a
17. a
18. c
19. a
20. a
21. b
22. a
23. a
24. a
25. a



CORPORATE HEADQUARTERS

TO:	FROM:	DATE:
Peter Borza HSS Mountaintop, PA	Priscilla Elliott Rosenberg <i>[Signature]</i>	May 10, 1995

Re: NRC License Surety Bond

I am enclosing a copy of the Surety Bond for Mountaintop, together with its 5/10/95 Continuation Certificate.

If there is anything further I can do, please feel free to call me at 407/727-9388.

PER/fa
Attach.
95510



PAYMENT SURETY BOND

Date bond executed: May 9, 1990

Effective date: May 10, 1990

Principal: Harris Corporation, 1025 W. Nasa Blvd., Melbourne, FL 32919

Licensee: Harris Corporation, Semiconductor Sector ("Harris Semiconductor"), Mountaintop, 125 Crestwood Road, Crestwood Industrial Park, Mountaintop, PA 18707

Type of organization: Corporation

State of incorporation: Delaware

NRC license # _____ (application control #111356), Harris Semiconductor, Mountaintop, 125 Crestwood Road, Crestwood Industrial Park, Mountaintop, PA and amount for decommissioning activity guaranteed by this bond: \$75,000.00.

Surety: INSURANCE COMPANY OF NORTH AMERICA

Type of organization: Stock Insurance Company

State of incorporation: Pennsylvania

Surety's qualification in jurisdiction where licensed facility is located.

Licensed to do business in Pennsylvania

Surety's bond number: KO 25 06 26 9

Total penal sum of bond: \$75,000.00

Know all persons by these presents, that we, the Principal and Surety hereto, are firmly bound to the U.S. Nuclear Regulatory Commission (hereinafter called "NRC"), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety; but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

WHEREAS, the U.S. Nuclear Regulatory Commission, an agency of the U.S. Government, pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, has promulgated regulations in Title 10, Chapter I of the Code of Federal Regulations, Part 30, applicable to the Principal, which require that a license holder or an applicant for a facility license provide financial assurance that funds will be available when needed for facility decommissioning;

NOW, THEREFORE, the conditions of the obligation are such that if the Principal shall faithfully, before the beginning of decommissioning of each facility identified above, fund the standby trust fund in the amount identified above for the facility;

Or, if the Principal shall fund the standby trust fund in such amount after an order to begin facility decommissioning is issued by "the NRC" or a U.S. district court or other court of competent jurisdiction;

Or, if the Principal shall provide alternative financial assurance and obtain the written approval of the "NRC" of such assurance, within 30 days after the date a notice of cancellation from the Surety is received by both the Principal and the "NRC" then this obligation shall be null and void; otherwise it is to remain in full force and effect.

The Surety shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above. Upon notification by the "NRC" that the Principal has failed to perform as guaranteed by this bond, the Surety shall place funds in the amount guaranteed for the facility into the standby trust fund.

The liability of the Surety shall not be discharged by any payment or succession of payments hereunder unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety hereunder exceed the amount of said penal sum.

The Surety may cancel the bond by sending notice of cancellation by certified mail to the Principal and to the "NRC" provided, however that cancellation shall not occur during the 90 days beginning on the date of receipt of the notice of cancellation by both the Principal and the "NRC" as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the "NRC" and to the Surety 90 days prior to the proposed date of termination, provided however, that no such notice shall become effective until the Surety receives written authorization for termination of the bond from the "NRC".

The Principal and Surety hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new amount, provided that the penal sum does not increase by more than 20 percent in any one year and no decrease in the penal sum takes place without the written permission of the "NRC".

In Witness Whereof, the Principal and surety have executed this financial guarantee bond and have affixed their seals on the date set forth above.

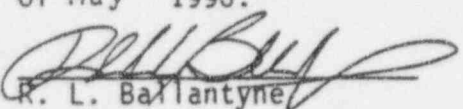
The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety.

Principal
Harris Corporation,


RE Sullivan

R. E. Sullivan
Senior Vice President
Administration

IN WITNESS WHEREOF, I have
hereunto set my hand and seal
of the Corporation this 12th day
of May 1990.


R. L. Ballantyne
Secretary

Corporate Surety


L. F. Boudrie, Attorney-In-Fact
Melbourne, FL

Name and address

State of incorporation: Pennsylvania

Liability limit: \$ 75,000.00

[Corporate seal]

Bond premium: \$ approx. \$350.00

E/471/90

CORPORATION ACKNOWLEDGEMENT

STATE OF FLORIDA)
) ss:
COUNTY OF BREVARD)

On this 10th day of May, 1990, before me personally came R. E. Sullivan, to me known, who being by me duly sworn, did depose and say that he is the Senior Vice President-Administration of Harris Corporation, the Corporation described and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

Notary Public, State of Florida
My commission expires: Sept. 24, 1991
Lois M. Crull
Notary Public

SURETY ACKNOWLEDGEMENT

STATE OF FLORIDA)
) ss:
COUNTY OF BREVARD)

On this 10th day of May, 1990, before me personally came L.F. Boudrie, to me known, who being by me duly sworn, did depose and say that he is an Attorney-in-Fact of the Insurance Company described and which executed the within instrument; that he knows the corporate seal of said corporation; that he signed the said instrument and affixed the said seal as Attorney-in-Fact by authority of the Board of Directors of said corporation and by authority of this office under the Standing Resolutions thereof.

Notary Public, State of Florida
My commission expires: Sept. 24, 1991
Lois M. Crull
Notary Public

CONTINUATION CERTIFICATE

The CIGNA company indicated above, hereinafter called the "Company" as Surety on Bond No. K02506269 issued on the 9th day of May, 1990 in the sum of Seventy-Five Thousand and 00/100 Dollars (\$ 75,000), on behalf of Harris Corporation as Principal, in favor of U. S. Nuclear Regulatory Commission, Oblige, hereby certifies that this bond is continuous, and remains in full force and effect, subject to all covenants and conditions of said bond.

This bond has been continued in force upon the express condition that the full extent of the Company's liability under said bond and all continuations thereof for any loss or series of losses occurring during the entire time the Company remains on said bond shall in no event exceed the sum of the bond.

In witness whereof the Company has caused this instrument to be duly signed, sealed and dated as of the 10th day of May, 1995

Insurance Company of North America
Surety

By

Jean Brooker
Jean Brooker, Attorney-in-fact

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

(FOR LFMS USE)
INFORMATION FROM LTS

PROGRAM CODE: 03520
STATUS CODE: 2
FEE CATEGORY: 3E
EXP. DATE: 19950630
FEE COMMENTS: _____
DECOM FIN ASSUR REQD: Y

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED

APPLICANT/LICENSEE: HARRIS SEMICONDUCTOR
RECEIVED DATE: 950530
DOCKET NO: 3031330
CONTROL NO.: 121857
LICENSE NO.: 37-24841-01
ACTION TYPE: RENEWAL

2. FEE ATTACHED

AMOUNT: \$760.00
CHECK NO.: 00344469

3. COMMENTS

SIGNED _____
DATE 6/6/95

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

1. FEE CATEGORY AND AMOUNT: 3E \$760

2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED FOR:

AMENDMENT _____
RENEWAL ✓
LICENSE _____

3. OTHER _____

SIGNED _____
DATE 6/8/95

I (95)

Log	<u>June 8</u>
Remitter	
Check No.	<u>344469</u>
Amount	<u>\$760</u>
Fee Category	<u>3E</u>
Type of Fee	<u>REN</u>
Date Check Recd	<u>6/18/95</u>
Date Completed	
By	<u>Brenda Brown</u>

JUN 15 PM 3:52