

APPLICATION FOR MATERIAL LICENSE

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

FEDERAL AGENCIES FILE APPLICATIONS WITH:

U.S. NUCLEAR REGULATORY COMMISSION
DIVISION OF FUEL CYCLE AND MATERIAL SAFETY, NMSS
WASHINGTON, DC 20555

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS, IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND, MASSACHUSETTS, NEW JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION I
NUCLEAR MATERIAL SECTION B
631 PARK AVENUE
KING OF PRUSSIA, PA 19406

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

U.S. NUCLEAR REGULATORY COMMISSION, REGION II
MATERIAL RADIATION PROTECTION SECTION
101 MARIETTA STREET, SUITE 2900
ATLANTA, GA 30323

IF YOU ARE LOCATED IN:

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

U.S. NUCLEAR REGULATORY COMMISSION, REGION III
MATERIALS LICENSING SECTION
799 ROOSEVELT ROAD
GLEN ELLYN, IL 60137

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, OR WYOMING, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
MATERIAL RADIATION PROTECTION SECTION
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TX 76011

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON, AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION V
MATERIAL RADIATION PROTECTION SECTION
1450 MARIA LANE, SUITE 210
WALNUT CREEK, CA 94596

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 JURISDICTION.

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

- ☐ A. NEW LICENSE
☒ B. AMENDMENT TO LICENSE NUMBER 22-19422-02G
☐ C. RENEWAL OF LICENSE NUMBER _____

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

Honeywell Inc. Military Avionics Div.
Mail Station MN17-3636
2600 Ridgway Parkway, P.O. Box 312
Minneapolis, MN 55440

3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED.

Honeywell Inc. CAO
1625 Zarthan Avenue
MN15-2334, Box 38
Minneapolis, MN 55440

Honeywell Inc. Military Avionics Div.
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Minneapolis, MN 55440

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Paul G. Johnson, MN17-3636

TELEPHONE NUMBER

(612) 378-5656

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 AND EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

9. FACILITIES AND EQUIPMENT

8942040774-85118
REG3 LIC30
22-19422-02G PDR

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

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

FEE CATEGORY 3J AMOUNT ENCLOSED \$ 230.00

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, AND 40 AND THAT ALL INFORMATION CONTAINED HEREIN, IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948, 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

SIGNATURE—CERTIFYING OFFICER

TYPED/PRINTED NAME

TITLE

DATE

Paul G. Johnson

Principal Chemist

9-12-84

14. VOLUNTARY ECONOMIC DATA

a. ANNUAL RECEIPTS

< \$250K	\$1M—3.5M
\$250K—500K	\$3.5M—7M
\$500K—750K	\$7M—10M
\$750K—1M	<input checked="" type="checkbox"/> > \$10M

b. NUMBER OF EMPLOYEES (Total for entire facility excluding outside contractors)

2000

c. NUMBER OF BEDS

d. WOULD YOU BE WILLING TO FURNISH COST INFORMATION (Dollar and/or staff hours) ON THE ECONOMIC IMPACT OF CURRENT NRC REGULATIONS OR ANY FUTURE PROPOSED NRC REGULATIONS THAT MAY AFFECT YOU? (NRC regulations permit it to protect confidential commercial or financial—proprietary—information furnished to the agency in confidence)

☐ YES

☒ NO

FOR NRC USE ONLY

TYPE OF FEE FEE LOG FEE CATEGORY COMMENTS

APPROVED BY

AMOUNT RECEIVED

CHECK NUMBER

CONTROL NO. 77823

DATE

PRIVACY ACT STATEMENT

Pursuant to 5 U.S.C. 552a(e)(3), enacted into law by section 3 of the Privacy Act of 1974 (Public Law 93-579), the following statement is furnished to individuals who supply information to the Nuclear Regulatory Commission on NRC Form 313. This information is maintained in a system of records designated as NRC-3 and described at 40 Federal Register 45334 (October 1, 1975).

1. **AUTHORITY:** Sections 81 and 161(b) of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2111 and 2201(b)).
2. **PRINCIPAL PURPOSE(S):** The information is evaluated by the NRC staff pursuant to the criteria set forth in 10 CFR Parts 30, 32, 33, 34, 35 and 40 to determine whether the application meets the requirements of the Atomic Energy Act of 1954, as amended, and the Commission's regulations, for the issuance of a radioactive material license or amendment thereof.
3. **ROUTINE USES:** The information may be (a) provided to State health departments for their information and use; and (b) provided to Federal, State, and local health officials and other persons in the event of incident or exposure, for their information, investigation, and protection of the public health and safety. The information may also be disclosed to appropriate Federal, State, and local agencies in the event that the information indicates a violation or potential violation of law and in the course of an administrative or judicial proceeding. In addition, this information may be transferred to an appropriate Federal, State, or local agency to the extent relevant and necessary for an NRC decision or to an appropriate Federal agency to the extent relevant and necessary for that agency's decision about you.
4. **WHETHER DISCLOSURE IS MANDATORY OR VOLUNTARY AND EFFECT ON INDIVIDUAL OF NOT PROVIDING INFORMATION:** Disclosure of the requested information is voluntary. If the requested information is not furnished, however, the application for radioactive material license, or amendment thereof, will not be processed. A request that information be held from public inspection must be in accordance with the provisions of 10 CFR 2.790. Withholding from public inspection shall not affect the right, if any, of persons properly and directly concerned need to inspect the document.
5. **SYSTEM MANAGER(S) AND ADDRESS:** U.S. Nuclear Regulatory Commission
Director, Division of Fuel Cycle and Material Safety
Office of Nuclear Material Safety and Safeguards
Washington, D.C. 20555

9-12-84

License 22-19422-02G Amendment

Supplemental Information for NRC 313

ITEM 5 RADIOACTIVE MATERIAL

(No change from prior application, January 15, 1981,

- A. Americium - 241
- B. Solid, AmO_2 , sealed source, ceramic matrix, encapsulated in stainless steel.
- C. N/A for distribution license/Condition 11. See manufacturing license.

ITEM 6 PURPOSE FOR WHICH LICENSED MATERIAL WILL BE USED

- A. Gamma source for fuel density sensor, termed a fuel quantity indicator system (FQIS), used in commercial and military aircraft. (No change)

Qualifications of Individuals Named Under Item 7 of NRC 313, Jan '84 Revision.

Paul Johnson - Honeywell Divisional Radiation Safety Officer

Academic: Bachelor of Chemistry, University of Minnesota, 1949.

Radiation Safety Training

Four-hour course by Honeywell Corporate Radiation Protection Officers during 1978 and 1979. This course is given to all Honeywell radioisotope personnel in Avionics Division. The course covers:

- 1) Principles and practice of radiation protection
- 2) Radioactivity measurement techniques and instruments
- 3) Biological effects of radiation

Experience: Honeywell Inc.
Development Chemist, 1949-1984
Responsible for radiography at Ridgway/Stinson location.

Radioisotope Responsibility

<u>Isotope</u>	<u>Amount</u>	<u>Duration</u>	<u>Application</u>
Am 241	24mCi	1 year	Sealed source in laser device
Am 241	0.5Ci	4 years	Sealed sources, gamma densitometer
H-3	466mCi	2 years	Self-luminous dials
Depleted Uranium	90 grams	3 years	Momentum Rings

George Vos - Honeywell Radiation Safety Officer Deputy

Academic: Bachelor of Chemistry, St. Johns University, 1950.
Courses in Physics including Modern Physics (Nuclear Phenomena and Radioactivity).

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9-4-84

- 1) principles and practices of radiation protection
- 2) radioactivity measurement techniques and instruments
- 3) biological effects of radiation

Experience: AM 241 0.5Ci 4 years on sealed sources, gamma densitometer.

Ronald Mitzel - Assembly Supervisor

Academic: Attended Northwestern Electronics Institute and the University of Minnesota. He has had a two-week U.S. Navy course in atomic, chemical and biological warfare. He has had seven years experience with the design and manufacture of radar altimeters having self-luminous dials containing 35mCi of H-3.

Radiation Safety Training

He has had a four-hour radiation safety course given by Honeywell Radiation Protection Officer. This course covers principles and practice of radiation protection, radioactivity monitoring and instruments and biological effects of radiation.

Leander Hallgren - Corporate Radiological Safety Officer

Academic: Leander Hallgren attended the Radioisotopes in Research program at the Oak Ridge Associated Universities, Oak Ridge, Tennessee in 1972. This program provided 169 hours of formal class work dealing with the requirements of part 16 of this application. In addition to this formal class work, he has continued to study many aspects of radioisotope use as part of the job requirements.

Experience with Radiation

<u>ISOTOPE</u>	<u>AMOUNT</u>	<u>WHERE USED</u>	<u>DURATION</u>	<u>TYPE OF USE</u>
Ni ⁶³	Several mCi	Honeywell	2.5 yrs	Ionization
Co ⁶⁰	10mCi	Oak Ridge Assoc. Univ.	1 mo	Dosimetry
Cs ¹³⁷	10mCi	Oak Ridge Assoc. Univ.	1 mo	Dosimetry
Am ²⁴¹	50uCi	Honeywell	6 yrs	Ionization
I ¹²⁵	2mCi	Honeywell	6 mos	Tracer
H ³	20Ci	Honeywell	6 yrs	Ionization
RaDEF	Several uCi	Oak Ridge Assoc. Univ.	1 mo	Calibration
Sr ⁹⁰	Several uCi	Oak Ridge Assoc. Univ.	1 mo	Tracer
Cr ⁵¹	Several uCi	Oak Ridge Assoc. Univ.	1 mo	Calibration
Cl ³⁶	50uCi	Honeywell	6 mos	Tracer
Kr ⁸⁵	47mCi	Honeywell	4 yrs	Ionization
Co ⁶⁰	15mCi	Honeywell	3 yrs	Calibration

ITEM 8 License 22-19422-02-G Amendment

Restricted-Area Worker Training

All individuals receive a four hour course in radiation principles, practices, and precautions, and an explanation of radiation monitoring techniques and instrumentation as used in the manufacture of the gamma densitimeter. The types of radiation and their biological effects are discussed.

Individuals who monitor sealed sources at the time of receipt are given special instructions in wipe-test techniques and calculation of total activity from alpha-scintillator counts.

ITEM 9 -- Facilities & Equipment

See Item 13 of Manufacturing License 22-19422-01.

ITEM 10 - Radiation Safety Program

See Item 15 of Manufacturing License.

ITEM 11 - Waste Management

See Item 14 of Manufacturing License.

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U.S. NUCLEAR REGULATORY COMMISSION
APPROVED BY OMB
3150-0120
Ex. 11-6-31-87

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Mail Station MN17-3636
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Minneapolis, MN 55440

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MN15-2334, Box 38
Minneapolis, MN 55440

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SIGNATURE—CERTIFYING OFFICER

TYPED/PRINTED NAME

TITLE

DATE



Paul G. Johnson

Principal Chemist

9-12-84

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☐ YES

☒ NO

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	COMMENTS	APPROVED BY
CONTROL NO. 77823				DATE
AMOUNT RECEIVED	CHECK NUMBER			

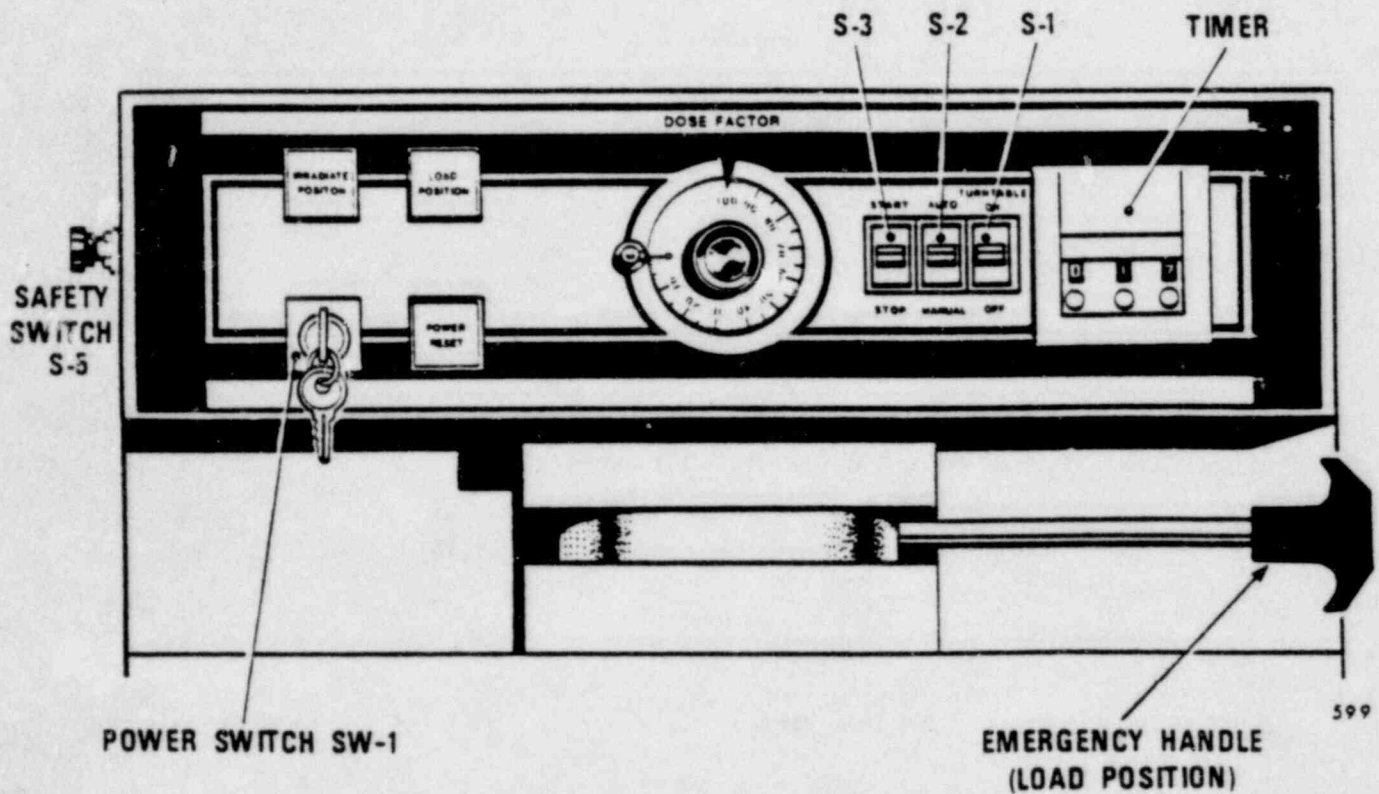


Fig. 2-2. Gammacell-1000, Control Panel

the light goes off, and the sample chamber remains in the irradiate position. The power will not be restored automatically.

CAUTION

This condition could result in overexposure of a sample.

2.4.4 IRRADIATE POSITION LIGHT (RED)

This light, when illuminated, indicates that the sample chamber is exposed to the radiation field.

2.4.5 LOAD POSITION LIGHT (GREEN)

This light, when illuminated, indicates that the sample chamber is out of the radiation field and can be loaded.

2.4.6 VARIABLE DOSE RATE DIAL

This feature allows the operator to apply a lower dose rate to the sample. This is achieved by stopping the sample chamber before the fully irradiate position and thus increasing the distance/shielding factor between the sample and the source array.

The relationship between the guide numbers on the dial (these are not percentages) and the central dose rate is shown in Table 4-2.

2.4.7 TIMER

The timer is internally wired to indicate up to 99.9 minutes in a count-down mode. This means that the desired exposure time is preset on the timer display and when the count reaches zero, the irradiation is automatically terminated.

9-12-84

License 22-19422-02G Amendment

Supplemental Information for NRC 313

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I ¹²⁵	2mCi	Honeywell	6 mos	Tracer
H ³	20Ci	Honeywell	6 yrs	Ionization
RaDEF	Several uCi	Oak Ridge Assoc. Univ.	1 mo	Calibration
Sr ⁹⁰	Several uCi	Oak Ridge Assoc. Univ.	1 mo	Tracer
Cr ⁵¹	Several uCi	Oak Ridge Assoc. Univ.	1 mo	Calibration
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CONTROL NO. 77823