



Agilent Technologies

2850 Centerville Road
Wilmington, DE 19808

NMS82

Director
Division of Nuclear Materials Safety
U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road,
King of Prussia, PA 19406

03032792

Re: Amendment Request to NRC License 07-28762-01

June 5, 2007

RECEIVED
REGION 1
2007 JUN -7 AM 10:49

Dear Sir or Madam,

The purpose of this letter is to request a number of changes and corrections to the above referenced license.

1. Lines 6 - 8: Add a line item to allow for the handling of customer returned Hydrogen-3 ECDs for waste.

- Line 6, Byproduct, source, and/or special nuclear material: Hydrogen 3
- Line 7, Chemical and or physical form: Any
- Line 8, Maximum amount: 2 curies

Note: Agilent has not manufactured or distributed Hydrogen 3 cells for many years but occasionally receives customer returned cells for disposal.

2. Line 9.A and E: Authorized use: We request the description in Authorized Use be expanded to reflect the use of Hydrogen 3 in the manufacturing process. We question the accuracy of the current, stated authorized use for line item 9.A. and E as the definition for research and development (ref. 10 CFR 30.4) does not match the proposed use as defined in the applicable amendment request dated November 23, 2004. That proposed use read:

Quality measurements of manufactured products. Expected specific uses include radiolabeling of nucleic acids, proteins, and other macromolecules where products will be either measured/analyzed directly or used as substrates for further studies. No

140617

NMSS/RGN1 MATERIALS-002

radioactive materials will be used in the direct manufacture of products, nor will radioactive materials become part of manufactured product.

Phosphorus 32 is not included in the finished product but it is used in the manufacturing of the finished product. However, we wish to retain the licensed authorization to utilize it in research and development should the need arise.

3. Change line 9.B. to read "Development, testing, production, assembly, repair, maintenance of detection cells, and for the storage of low level radioactive waste materials generated during processing of new and customer returned cells.
4. Expand the description in line item 9.C. and D. to include storage of cells for disposal. We have determined from a review of historical amendment requests and licenses that:
 - The predecessor materials license for the current NRC license 07-28762-01 was NRC License 37-07002-02, which covered the Hewlett Packard Avondale, PA Site.
 - Hewlett Packard submitted a request to increase the maximum amount of Ni-63 from 20 to 50 curies for license 37-07002-02 on November 11, 1991 (copy included) for the purpose of accommodating cells for disposal.
 - The subsequent amendment dated March 5, 1992 (copy also included) did not reflect the inclusion of storage of cells for disposal in line 9.A. through C.
 - License 37-07002-02 was terminated upon notification of relocation from Avondale, PA to Wilmington, DE and the newly issued license 07-28762-01 contained the same information in line 9.A through C.9. as the previous license with no reference to storage of cells for disposal.

Please note, in reference to the letter dated November 11, 1991 above, we believe the RSO submitting the amendment request dated November 11, 1991 made an error in referencing line 6A. The RSO stated: "First, we wish to change condition 6A from 20 curies Nickel 63 to 50 curies Nickel 63." A review of the possession license in place at that time (37-07002-02, Rev. 55) shows the reference to Nickel 63 at 20 curies on line B.

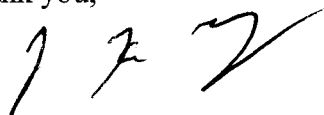
5. Line 9: Add a line item under "Authorized use" referring to item #1 above (requesting an additional line for Hydrogen 3) to read: Storage of Hydrogen 3 cells and low level radioactive waste materials generated from the processing of customer returned cells for disposal.
6. Line 11.A.: Change the person identified in the line to Frank D'Angelo, who has assumed responsibility from the current manager listed, James D'alessio. Mr. D'Angelo's training and experience with radioactive materials are listed below.

Applicant
Name of Proposed Authorized User
Frank D'Angelo

Training Received in Basic Radioactive Material Handling Techniques				
Type of Training		Hours	Dates	Location
Radiation Training and Handling		8	08/1997	Ohio State University – Columbus, Ohio
Radiation Safety		2	1/1999-2/2006	USB Corporation – Cleveland, Ohio
Emergency Response		1	1/1999-2/2006	USB Corporation – Cleveland, Ohio
Radioactive Waste Storage and Disposal		1	3/2003	USB Corporation – Cleveland, Ohio
Radiation Safety Surveys		1	3/2003	USB Corporation – Cleveland, Ohio
Ionizing Radiation		1	3/2006	USB Corporation – Cleveland, Ohio
Chemical Safety		4	9/2006	USB Corporation – Cleveland, Ohio
				Agilent Technologies, Inc.
				Agilent Technologies, Inc.
Experience with Radiation or Radioactive Materials				
Radioactive material	Maximum Activity Used at One Time	Years Experience (Cumulative)	Type (s) of Use	Location(s)
³² P	~1 mCi	7	Radiolabeling of nucleic acids and nucleotides for direct measurement or for use as substrates for <i>in vitro</i> studies	• USB Corporation Cleveland, Ohio • Agilent Technologies, Inc. Wilmington, DE
³ H	~1 mCi	7	Radiolabeling of nucleic acids for direct measurement or used further as substrates for <i>in vitro</i> studies	• USB Corporation Cleveland, Ohio

Please contact David S. Bennett (RSO) at 302-633-8262 if you have any questions about the details of this amendment request.

Thank you,



Keith Morgan
LFS/LSCA Environmental, Health, and Safety Manager

Hewlett-Packard Company
Avondale Division
Route 41
Post Office Box 900
Avondale, Pennsylvania 19311-0900
215 268 2281



November 11, 1991

CERTIFIED

US Nuclear Regulatory Commission
License Management Office
475 Allendale Road
King of Prussia, PA 19406

Re: By-Product Materials License No. 37-07002-02

Gentlemen:

We are requesting that our By-Products Materials License No. 37-07002-02 be amended as follows:

First, we wish to change condition 6A from 20 curies Nickel 63 to 50 curies Nickel 63. This increase is requested to allow margin to handle the increased number of cells for disposal and to be able to respond to increased volume in sales by allowing us to carry a higher inventory of cells. This will also give us margin for the closing of Richland disposal site. We are currently making three to four shipments of ~4 curies of Nickel 63 per disposal drum per year.

Secondly, we wish to update condition 12. The name Dave McHenry should be corrected to read Dare McHenry. We wish to add the following personnel to condition 12:

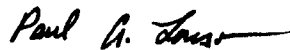
Joanne Ellsworth
Irv Maiorano
John Torello
Dave Warren

The above individuals have been given our By-Product Materials' Safe Handling instruction and laboratory training. In addition, use of survey equipment, record keeping and electron capture assembly/disassembly was included. Further, they have received on-the-job training under the direct supervision of Vernon Garner, William Howell, Bob Deshields, Danielle Martin, and Dare McHenry. The resumes of these individuals and specific course content are included.

November 11, 1991
Page Two

If you require any additional information, please contact me at (215) 268-5548.

Sincerely,



Paul A. Larson
Radiation Safety Officer

PL:cbm

Attached: Amendment fee for 170.31/3.B: \$550
 Amendment fee for 170.31/3.N: 400
Check enclosed in the amount of \$950

Resumes for: Joanne Ellsworth
 Irv Maiorano
 John Torello
 Dave Warren

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Joanne K. Ellsworth

Hire Date: 9/72

TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB	FORMAL COURSE
Principles and Practices of Radiation Protection	Hewlett-Packard Co.	2.5 hrs.	Yes	Yes
Radioactivity measurements standardization and monitoring techniques and instruments	Hewlett-Packard Co.	2.5 hrs.	Yes	Yes
Mathematics and calculations basic to the use and measurement of radioactivity	Hewlett-Packard Co.	1.0 hr.	Yes	Yes
Biological effects of radiation	Hewlett-Packard Co.	2.0 hrs.	Yes	Yes

EXPERIENCE WITH RADIATION

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE GAINED	DURATION OF EXPERIENCE	TYPE OF USE
Ni63	15mCi	Hewlett-Packard Co.	12 months	GC Detectors
H3	200mCi	Hewlett-Packard Co.	0 months	GC Detectors

TYPE OF USE

Assembly responsibility, developmental, testing and handling of Electron Capture detector (with active material Ni63). Use of the counting instruments and radiation detectors (i.e. survey meters, rate meters, scalers, gas flow counters and liquid scintillation counter).

Irvin S. Maiorano

Hire Date: 6/59

TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB	FORMAL COURSE
Principles and Practices of Radiation Protection	Hewlett-Packard Co.	2.5 hrs.	Yes	Yes
Radioactivity measurements standardization and monitoring techniques and instruments	Hewlett-Packard Co.	2.5 hrs.	Yes	Yes
Mathematics and calculations basic to the use and measurement of radioactivity	Hewlett-Packard Co.	1.0 hr.	Yes	Yes
Biological effects of radiation	Hewlett-Packard Co.	2.0 hrs.	Yes	Yes

EXPERIENCE WITH RADIATION

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE GAINED	DURATION OF EXPERIENCE	TYPE OF USE
Ni63	15mCi	Hewlett-Packard Co.	10 months	GC Detectors
H3	200mCi	Hewlett-Packard Co.	0 months	GC Detectors

TYPE OF USE

Supervisory responsibility, developmental, testing and handling of Electron Capture detector (with active material Ni63). Use of the counting instruments and radiation detectors (i.e. survey meters, rate meters, scalers, gas flow counters and liquid scintillation counter).

John Torello Avon Grove H.S., West Grove, PA

TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB	FORMAL COURSE
Principles and Practices of Radiation Protection	Hewlett- Packard Co.	2.5 hrs.	Yes	Yes
Radioactivity measurements standardization and monitoring techniques and instruments	Hewlett- Packard Co.	2.5 hrs.	Yes	Yes
Mathematics and calculations basic to the use and measurement of radioactivity	Hewlett- Packard Co.	1.0 hr.	Yes	Yes
Biological effects of radiation	Hewlett- Packard Co.	2.0 hrs.	Yes	Yes

EXPERIENCE WITH RADIATION

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE GAINED	DURATION OF EXPERIENCE	TYPE OF USE
Ni63	15mCi	Hewlett-Packard Co.	1 month	GC Detectors

TYPE OF USE

Mounting and test of Electron Capture Detectors (Ni63). Use of the liquid scintillation counter.

Dave Warren

TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB	FORMAL COURSE
Principles and Practices of Radiation Protection	Hewlett-Packard Co.	2.5 hrs.	Yes	Yes
Radioactivity measurements standardization and monitoring techniques and instruments	Hewlett-Packard Co.	2.5 hrs.	Yes	Yes
Mathematics and calculations basic to the use and measurement of radioactivity	Hewlett-Packard Co.	1.0 hr.	Yes	Yes
Biological effects of radiation	Hewlett-Packard Co.	2.0 hrs.	Yes	Yes

EXPERIENCE WITH RADIATION

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE GAINED	DURATION OF EXPERIENCE	TYPE OF USE
Ni63	15mCi	Hewlett-Packard Co.	3 months	GC Detectors
H3	200mCi	Hewlett-Packard Co.	None	GC Detectors

TYPE OF USE

Mounting and test of Electron Capture Detectors (Ni63). Use of the liquid scintillation counter.

MATERIALS LICENSE

Amendment No. 56

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, 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.

Licensee

1. Hewlett-Packard Company
Avondale Division
2. Route 41 and Starr Road
Avondale, Pennsylvania 19311

In accordance with letter dated
November 11, 1991,
3. License number 37-07002-02 is amended in
its entirety to read as follows:

4. Expiration date June 30, 1995

5. Docket or
Reference No 030-061566. Byproduct, source, and/or
special nuclear material7. Chemical and/or physical
form8. Maximum amount that licensee
may possess at any one time
under this license

A. Hydrogen 3

A. Titanium Tritide
Foils

A. 5 curies total

B. Nickel 63

B. Plated sources
and parts

B. 50 curies

C. Nickel 63

C. Foils

C. 200 millicuries

D. Nickel 63

D. Any

D. 1 millicurie

9. Authorized use

- A. through C. For use in the development, testing, production and assembly of detector cells; repair and maintenance of detector cells; demonstration of use of detector cells; and for distribution in detector cells to persons authorized to receive the licensed material pursuant to terms and conditions of specific licenses issued by the Nuclear Regulatory Commission or any Agreement State.
- D. For use in the development, testing, production, assembly, repair and maintenance of detection cells, and for storage of waste materials.

CONDITIONS

10. Licensed material may be used at the licensee's facilities at Route 41 and Starr Road, Avondale, Pennsylvania, and at temporary job sites of the licensee anywhere in the United States where the U.S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

37-07002-02

Docket or Reference number

030-06156

Amendment No. 56

(11. Continued)

CONDITIONS

11. A. Licensed material shall be used by, or under the supervision of, Richard Brunsfield, Bob Deshields, Joanne Ellsworth, Steve J. Engle, John Foster, Sam Fraton, Vernon Garner, Bruce Herman, William Howell, Darlene L. Jones, Richard H. Kolloff, Paul Larson, Gene Law, Irv Maiorano, Danielle Martin, Dare McHenry, Angie Owens, James Peters, Richard J. Phillips, Darlene Ruffatt, Ruth Scott, Ruder Schill, W. Dale Snyder, James J. Sullivan, John Torello, Dave Warren, Marvin Welsh, James Wirfel, John V. Wisniewski, and Ron Wood.
- B. The Radiation Safety Officer for this license is Paul A. Larson.
12. In lieu of using the conventional radiation caution colors (magenta or purple on yellow background) as provided in 10 CFR 20.203(a)(1), the licensee is hereby authorized to label detector cells and cell baths, containing licensed material and used in gas chromatography devices, with conspicuously etched or stamped radiation caution symbols.
13. A. Sealed sources and detector cells shall be tested for leakage and/or contamination at intervals not to exceed 6 months or at such other intervals as are specified by the certificate of registration referred to in 10 CFR 32.210, not to exceed 3 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 3 months.
- C. In the absence of a certificate from a transferor indicating that a 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 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

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

37-07002-02

Docket or Reference number

030-06156

Amendment No. 56

(13. continued)

CONDITIONS

(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. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. 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 shall be removed from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within 5 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 involved, the test results, and corrective action taken.

G. The licensee is authorized to collect leak test samples for analysis by the licensee. 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 conduct a physical inventory every 6 months to account for all sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 5 years from the date of each inventory.

15. Any proposed changes in packaging, labelling, shielding, or instructions for use and storage shall be submitted for review to the Nuclear Materials Safety Branch, U.S. Nuclear Regulatory Commission, Region I, 475 Allendale Road, King of Prussia, Pennsylvania 19406 and approval of the changes shall be received by the licensee prior to implementing the changes.

16. The licensee may transport licensed material in accordance with the provisions of 10 CFR 71, "Packaging and Transportation of Radioactive Material."

17. Detector cells containing a titanium tritide foil or a scandium tritide foil shall only be used in conjunction with a properly operating temperature control mechanism which prevents foil temperatures from exceeding that specified by the manufacturer.

18. Maintenance, repair, cleaning, replacement and disposal of foils contained in detector cells shall be performed only by the device manufacturer or other persons specifically authorized by the Commission or an Agreement State to perform such services.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

37-07002-02

Docket or Reference number

030-06156

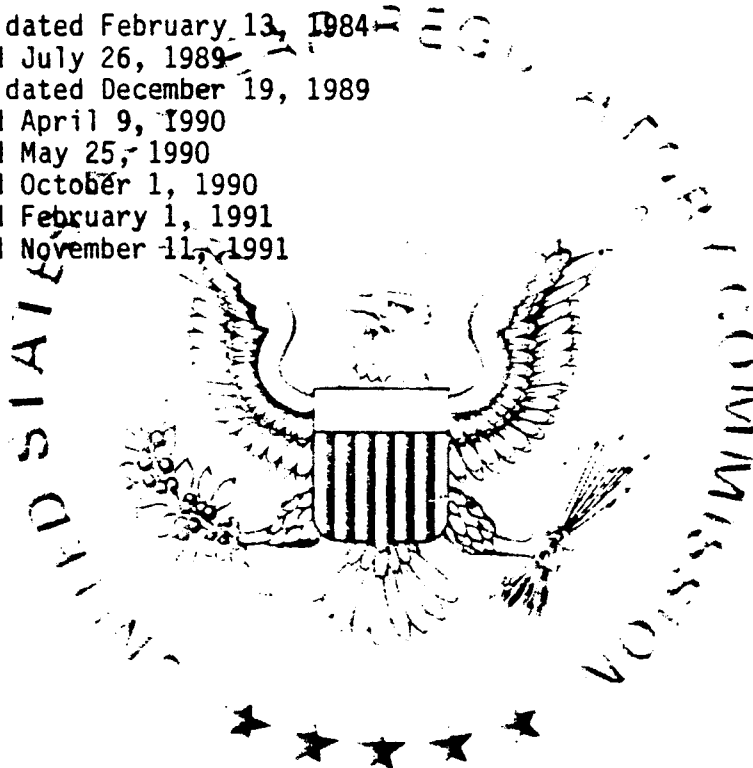
Amendment No. 56

(Continued)

CONDITIONS

17. 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 February 13, 1984
- B. Letter dated July 26, 1989
- C. Application dated December 19, 1989
- D. Letter dated April 9, 1990
- E. Letter dated May 25, 1990
- F. Letter dated October 1, 1990
- G. Letter dated February 1, 1991
- H. Letter dated November 11, 1991



For the U.S. Nuclear Regulatory Commission

Original Signed By:

By Francis M. Costello

Nuclear Materials Safety Branch
Region I

Date MAR 05 1992

This is to acknowledge the receipt of your letter/application dated

6/5/2007, and to inform you that the initial processing which includes an administrative review has been performed.

☒ AMEND. 07-28762-01
There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

☐ Please provide to this office within 30 days of your receipt of this card

A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned Mail Control Number 140617.
When calling to inquire about this action, please refer to this control number.
You may call us on (610) 337-5398, or 337-5260.