

December 2, 1988

Log	NRC-8
Remitter	
Check No.	001102 (8488)
Amount	120 (See 3N 109922)
Fee Category	
Type of Fee	AMLD
Date Check Made	12/12/88
Date Com. Paid	12/12/88
By	[Signature]

(Refund #1240) also)

U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 10406

Gentlemen:

T Cell Sciences, Inc., NRC License #20-20783-02, requests to amend our license to add a new facility currently under construction at 38 Sidney Street, Cambridge, MA 02139. The facilities are scheduled to be completed in February 1989. We will contract AECL to assist our moving our AECL Gammacell 1000 Model A Irradiator. The irradiator will be housed in a locked room in the new facility dedicated to this purpose (see attached floor plan for location of the irradiator facility).

Designated on the floor plan as room C, this room will be kept locked when not in use, and the key will be under the supervision of the T Cell Science radiation safety officer. The room will be built with two-hour fire resistant walls and doors. As in our current facilities on Memorial Drive, an alarmed area radiation monitor will be installed in the new facility to continuously monitor ambient radiation levels. The current T Cell Science radiation protection program will remain the same in the new facilities.

Upon completion of the move to Sidney Street, the Memorial Drive facility will have a closeout radiation survey performed by our consultants, Bolton & Galanek, Inc. (NRC License #20-13302-01). A copy of their report will be submitted to the commission at that time.

If you have any questions concerning our proposed move to our new facilities, please do not hesitate to contact myself or Mr. Jerry Carson at (617) 864-2160.

Sincerely,

Stephen H. Ip

Stephen H. Ip, Ph.D.
Director of Research Groups

SHI:slc
9002010359 881221
REG1 LIC30
20-20783-02 PDR

109561

29 November 1988

U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 10406

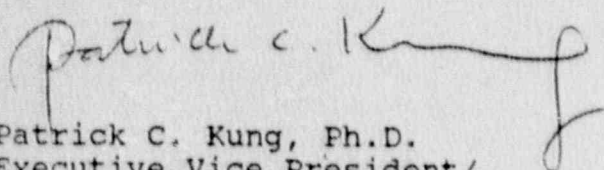
Gentlemen:

Enclosed please find two amendment applications requesting the addition of our facility at 38 Sidney Street to our Radioactive Material License and our License to own and operate a sealed source gamma ray irradiator. Also enclosed is a check for \$240.00 to cover the license amendment fees, \$120.00 for a category 3M license and \$120.00 for a category 3E license.

We intend to take possession of the facility and begin our occupancy in late February, 1989. I trust that this provides an adequate amount of time to review our amendment application. However, if these time constraints present a problem, please contact me at once.

Thank you for your attention in this matters.

Sincerely,



Patrick C. Kung, Ph.D.
Executive Vice President/
Scientific Director

PCK/bdc
(416-1129)

Enclosures

cc: G. Carson

17:0W 9-030 88.

RECEIVED-REGION I

Key:

— Area for storage of radionuclide stocks and waste, also laboratory for iodinations

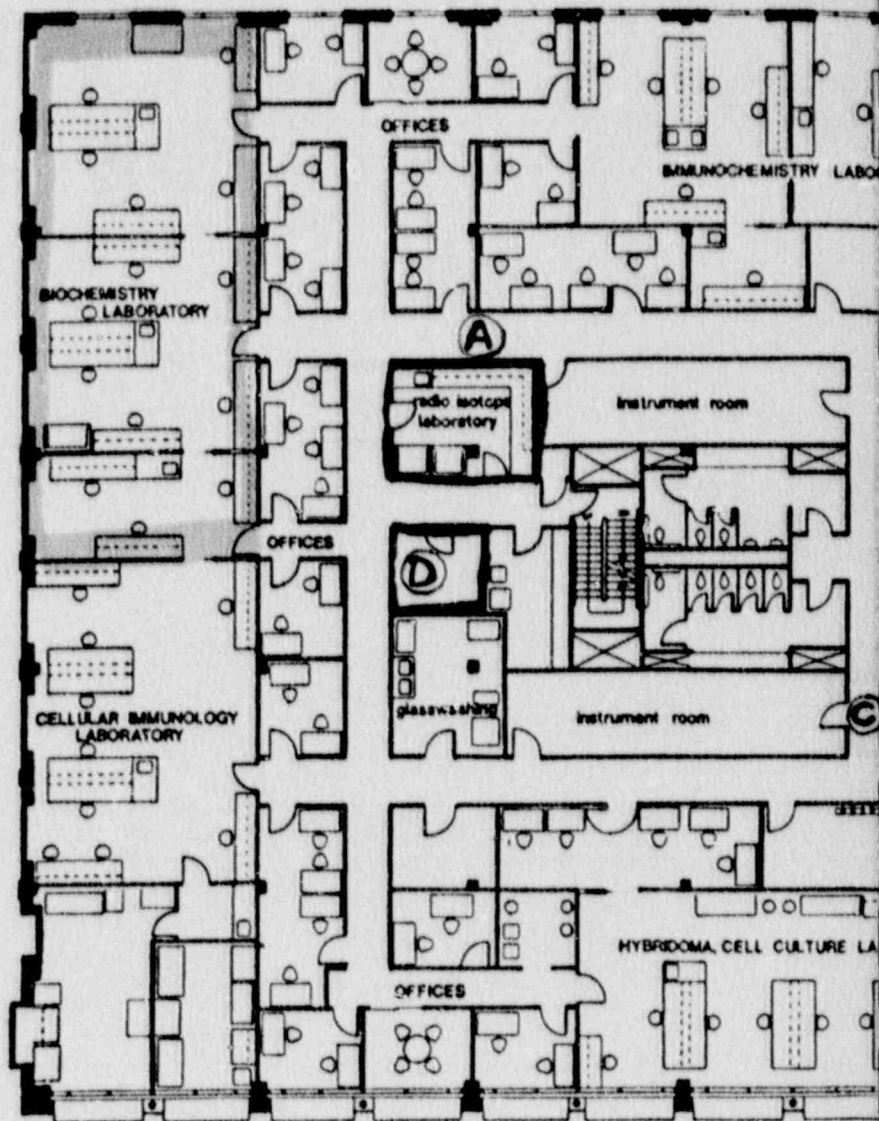
A = radioisotope stock storage, iodination lab

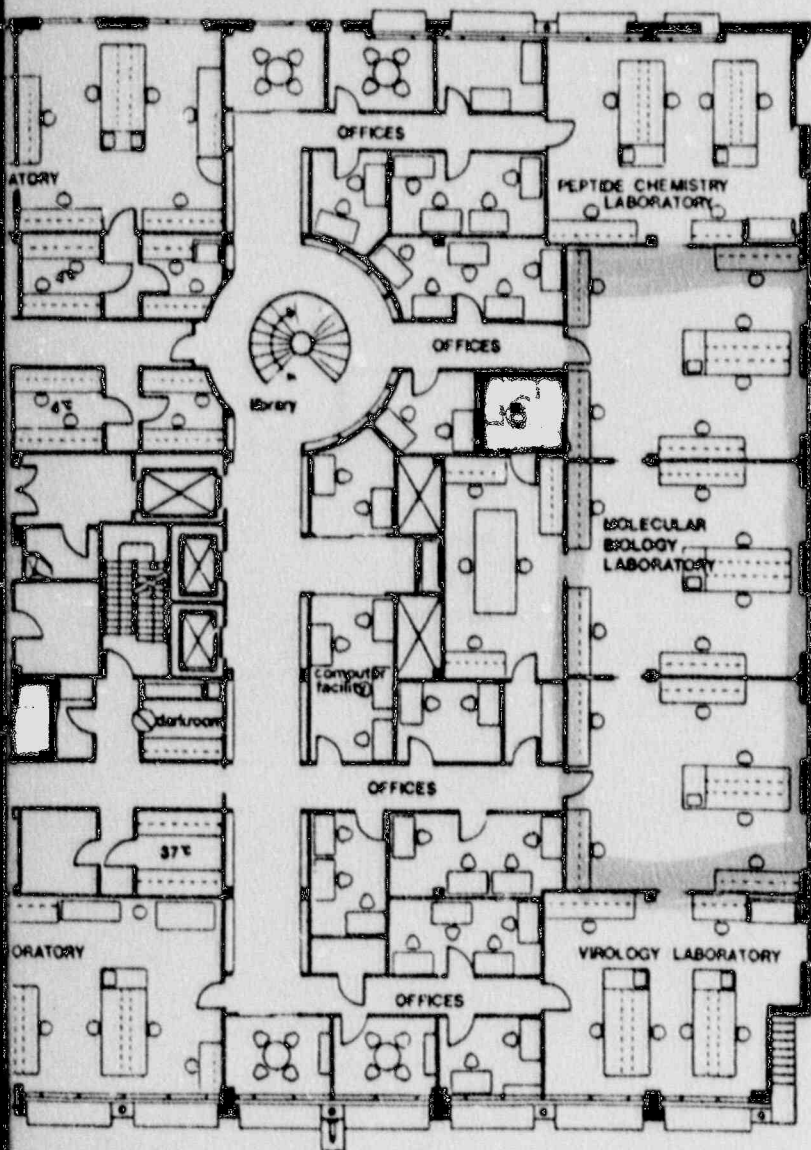
B = radioisotope storage

C = Irradiator room

D = Solid waste storage

— Laboratories routinely using radioactivity (2 mCi or lower)





9002010359-01



SI
APERTURE
CARD

Also Available On
Aperture Card

T CELL SCIENCES

36 Sidney Street
Cambridge, MA

5th FLOOR PLAN



109561

109973

OFFICIAL RECORD COPY ML10

October 26, 1988

John D. Kinneman, Chief
Nuclear Materials Safety, Section B
Division of Radiation Safety and Safeguards
United States Nuclear Regulatory Commission
Region 1

Dear Mr. Kinneman,

This is in reference to our request for amendment to our License No. 20-20783-02, naming Gerald R. Carson as Radiation Safety Officer. In response to our prior request for amendment to our Materials License No. 20-20783-01, you required additional information concerning Mr. Carson's training and experience with radioactive materials. This letter is meant to provide the corresponding information relative to our license to possess and operate a sealed source ^{137}Cs Irradiator:

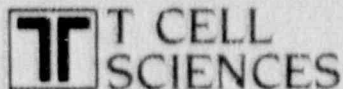
1. Formal Training

1a. Boston College, 1975. Radiation Biology. A one semester course covered the principles and operation of a variety of instruments for measuring alpha and beta emitting radionuclides including Geiger-Mueller tubes and liquid scintillation detectors. Included in this training was the standardization of instruments, effects of quenching and counting efficiency for various instruments. The course also covered the calculation of radiation dose, biological effects of ionizing radiation, and the principles of radiation protection (shielding techniques, monitoring for contamination, etc.)

1b. Boston College, 1975. Nuclear and Radiochemistry. This one semester course, taught by Dr. Irving Russell, covered the principles of radioactive decay, and both the theoretical and practical aspects of radiation monitoring. Included was training in the calculation of radiation dose and levels of radioactivity generated by fissionable materials and radioactive daughters. The course involved hands-on experience in the use of gamma ray detectors and multi-channel analysers to detect, quantitate, and identify several radionuclides present in a single sample. The theory and practice of neutron activation analysis was also covered.

109561

OFFICIAL RECORD COPY ML 10**28 OCT 1988**



1c. Boston College, 1974-1975. Senior Thesis.
Mr. Carson's senior thesis, carried out under the direction of Dr. Russell, focused on the uptake and retention of ^{137}Cs and ^{144}Ce radionuclides by various plant species.

1d. In-house Radiation Safety Training. While an employee at Biogen Research Corp and later at T Cell Sciences, Mr Carson participated in a total of seven one-hour training sessions in radiation safety conducted by the radiation safety officers of those institutions and their consultants.

2. Experience in radiation monitoring and surveys for contamination

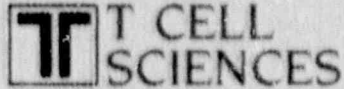
2a. Boston College. Dept. of Chemistry. 1974-1975.
Responsible for laboratory surveys and waste disposal for research laboratory.

2b. Biogen Research Corp. 1981-1986.
Responsible for laboratory surveys, waste disposal, and monitoring and clean-up of laboratory equipment and work areas.

2c. T Cell Sciences Inc. 1986-1988.
Responsible for monitoring laboratory and equipment for contamination. Evaluated survey and wipe test results for the Molecular Biology area. Responsible for ordering and monitoring of incoming radioactive materials. Trained by Dr Michael Snider, T Cell Sciences Radiation Safety Officer, in techniques of sampling for airborne radioactivity at individuals breathing zone and to determine effluent radioactivity levels. Worked with Dr. Snider in monitoring these samples and evaluating the results. Trained by Dr. Snider in proper methods of storage and disposal of radioactive waste and assisted Dr. Snider in preparing such material for disposal.

2d. Experience with the T Cell Sciences' ^{137}Cs Sealed Source Irradiator.

Trained by Dr. Michael Snider in the operation of the irradiator. Trained by Dr. Snider in monitoring practices and contamination surveys of the irradiator and the room where it is housed. Assisted Dr. Snider in conducting surveys for contamination and leakage. Passed the examination required by T Cell Sciences for irradiator users.



3. History of Radionuclide Use

Institution	Radionuclide	Amount Used
Boston College Chestnut Hill MA	137-Cs 144-Ce	1mCi 1mCi
Biogen Research Corp Cambridge, MA	32-P 3-H 125-I	10mCi 1mCi 100uCi
T Cell Sciences Inc. Cambridge, MA	32-P 35-S 125-I	20 mCi 5 mCi 100 uCi

In addition to our ongoing Radiation Protection Policy, Mr. Carson will continue to consult with Bolton and Galanek Inc., License No. 20-13382-01, who review our program and records on a quarterly basis and are available to Mr. Carson to review all results as necessary.

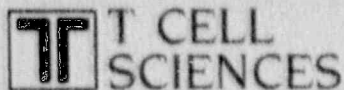
Please contact us if you require any further information with regard to this amendment application.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Stephen Ip'.

Stephen Ip, PhD
Director of Research Groups

cc: J. Grant
J. Carson
E. Essigmann
S. Ip



030-29658

September 6, 1988

United States Nuclear Regulatory Commission
Region 1
631 Park Avenue
King of Prussia, PA 19406

Gentlemen:

This refers to Materials License No. 20-20783-02, Docket No. 030-29658. We wish to make the following amendment to our license to possess and operate a sealed source AECL Gammacell 1000 Irradiator:

We wish to change the designated Radiation Safety Officer from Dr. Michael Snider to Gerald R. Carson, Senior Scientist, and include Mr. Carson's name on the license as an authorized user. We have included Mr. Carson's C.V. and a history of his work experience handling radioisotopes. In addition, Dr. Snider has trained Mr. Carson in the use of the Gammacell 1000 Irradiator, and he has taken and passed the examination required by T Cell Sciences Inc. for authorized users. All other aspects of our Radiation Safety Program as described in our license remain in effect and unchanged.

Please note that we have already submitted a request to amend our Materials License No. 20-20783-01, Docket or Reference No. 030-22069, to name Mr. Carson as our Radiation Safety Officer.

Please notify us of any additional information which may be required to expedite this matter.

Sincerely,

Stephen H. Ip, Ph.D.
Director of Research Groups

cc: J. Grant
E. Essigman
P. Kung

0060/96

OFFICIAL RECORD COPY ML 10

Log	Oct 7
Remitter	
Check No.	000696
Amount	120
Fee Category	3E
Type of Fee	A.M.D.
Date Check Rec'd.	11/16/88
Date Completed	11/16/88
By:	S. Kimberly

109561

T Cell Sciences, Inc. 840 Memorial Drive Cambridge, MA 02139 USA 617-864-2160

Telex 9102401560 Telefax 1-617-864-0854

SEP 10 1988

Gerald K. Carson, M.S.
Microbiology and Biochemistry
University of Vermont
1978

Formal Training:

Spring, 1975 Boston College, Nuclear and Radiochemistry

12 week course, topics included:

Nuclear decay
Radiation dosimetry and measuring devices
Handling of radioisotopes

Boston College, Radiation Biology

12 week course, topics included:

Biological effects of radiation
Measuring devices
Dose reduction techniques

Research Experience:

		<u>Isotope</u>
1973-1974	Boston College Chestnut Hill, MA	32 137 P, Cs
1978-1980	Tufts University School of Medicine Boston, MA	3 32 H, P
1981-1986	Biogen Research Corp Cambridge, MA	3 32 125 H, P, I
1986-1988	T Cell Sciences Cambridge, MA	32 125 35 P, I, S

GERALD R. CARSON

126 Sunnyside Avenue
Arlington, MA 02172
(617) 648-8826

EDUCATION

M.S. in Microbiology and Biochemistry (1978)
University of Vermont, Burlington, Vermont

B.S. in Biology (1975)
Boston College, Chestnut Hill, Massachusetts

PROFESSIONAL EXPERIENCE

Associate Scientist (July, 1981 - Present)
Biogen Research Corp
14 Cambridge Center
Cambridge, MA
Molecular Cloning, cDNA Synthesis, Microbial Genetics

Research Assistant (June, 1978 - July, 1981)
Tufts University School of Medicine, Department of Molecular Biology
Harrison Ave. Boston, MA
Plasmid Biology, Microbial Genetics, Anaerobic Bacteriology

Junior Bacteriologist (March - June, 1979)
Boston City Hospital
Boston, MA
Diagnostic Bacteriology, Blood Culture Evaluation, Serotyping

Laboratory Instructor (September, 1977 - June, 1978)
Simmons College, Department of Biology
300 The Fenway
Boston, MA

Teaching Assistant (September, 1975 - June, 1977)
University of Vermont, Department of Microbiology and Biochemistry
Burlington, Vermont

AWARDS AND HONORS

Teaching Assistantship (1975 - 1977)
University of Vermont

B.S., cum laude (1975)

Boston College

Member, Honors Program (1971 - 1975)
Boston College

PROFESSIONAL ASSOCIATIONS

Member, American Society for Microbiology

PUBLICATIONS

Tang, J.C.-T., P. McGray, P. Chen, B. Ferguson, G. Carson, and W.S. Kelley. 1983. Properties of Xylanase from *C. thermocellum* Using a Trinitrophenyl-xylan As in Wood and Agricultural Residues. Ed J. Soltes, ed. Academic Press. 1983.

Tally, F., M.J. Shimell, G.R. Carson, and M.H. Malamy. 1982. Chromosomal and Plasmid Mediated Transfer of Clindamycin Resistance in *Bac* in Molecular Biology, Pathogenicity, and Ecology of Bacterial Plasmids. S.B. Levy, R.C. Clowes, and E.L. Koenig, eds. Plenum Press. 1982.

Little, J.E., R.E. Sjogren, and G.R. Carson. 1979. Measurement of Proteolysis in Natural Waters. *Applied and Environmental Microbiology* 37(5), 600.

109561

OFFICIAL RECORD COPY ML 10

10 SEP 1988

OCT 14 1988

T. Cell Sciences
ATTN: Stephen H. Ip, Ph.D.
Director of Research Groups
840 Memorial Drive
Cambridge, MA 02139

Gentlemen:

This refers to your letter dated September 6, 1988, for an amendment to Materials License 20-20783-02 to change the Radiation Safety Officer.

An amendment fee of \$120 is required as specified in §170.31 (3E) of 10 CFR 170, copy enclosed. Payment should be made to the U.S. Nuclear Regulatory Commission and mailed to my attention at our Washington, D.C. address.

Your application will be processed by the Region I Licensing staff located at 475 Allendale Road, King of Prussia, Pennsylvania 19406. The fee, however, is required prior to issuance of the amendment. When submitting the fee, please refer to CONTROL NUMBER 109561.

Sincerely,



Glenda Jackson
License Fee Management Branch
Division of Accounting and Finance
Office of Administration and
Resources Management

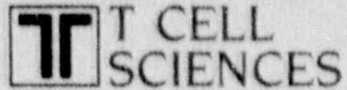
Enclosure:
10 CFR 170

cc: Region I

DISTRIBUTION:
~~Pending Fee File~~
ARM/DAF R/F
LFMB R/F (2)
DW/RI/T CELL SCIENCES

OFFICE: ARM/LFMB *SK*
SURNAME: SKimberley:lb
DATE: 10/12/88

ARM/LFMB *G*
GJackson
10/12/88



Glenda Jackson
License Fee Management Branch
Office of Accounting and Finance
U.S. Nuclear Regulatory Commission

Dear Ms. Jackson,

Enclosed you will find payment of \$120.00 for the license amendment fee required to process our amendment to Materials License 20-20783-02, CONTROL NUMBER 109561. Please contact us for any additional information.

Sincerely,

Stephen H. Ip, PhD.
Director of Research Groups

PAID

000696

U.S. NUCLEAR REGULATORY COMMISSION
RECEIVED
OCT 10 1988
10:10 P.3.85

BETWEEN: .
LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

: (FOR LFMS USE)
: INFORMATION FROM LTS
: -----
: PROGRAM CODE: 03510
: STATUS CODE: 0
: FEE CATEGORY: 3E
: EXP. DATE: 19920331
: FEE COMMENTS: -----
:

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED
APPLICANT/LICENSEE: T CELL SCIENCES, INC.
RECEIVED DATE: 880910
DOCKET NO: 3029658
CONTROL NO.: 109561
LICENSE NO.: 20-20783-02
ACTION TYPE: AMENDMENT

2. FEE ATTACHED
AMOUNT: -----
CHECK NO.: Ø

3. COMMENTS

SIGNED emw
DATE 23 SEP 88

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

1. FEE CATEGORY AND AMOUNT: 3E \$ 120

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

3. OTHER -----

SIGNED S. Kimberly
DATE 11/16/88

1988

(FOR LFMS USE)
INFORMATION FROM LTS

BETWEEN:
LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

: PROGRAM CODE: 03510
: STATUS CODE: 0
: FEE CATEGORY: 3E
: EXP. DATE: 19920331
: FEE COMMENTS:
:-----

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED
APPLICANT/LICENSEE: T CELL SCIENCES, INC.
RECEIVED DATE: 881206
DOCKET NO: 3029658
CONTROL NO.: 109973
LICENSE NO.: 20-20783-02
ACTION TYPE: AMENDMENT

VOID
COMBINED
w/109561

Voided

2. FEE ATTACHED
AMOUNT: -----
CHECK NO.: -----

3. COMMENTS
SEE C/N 109972 FOR CHECK
TO COVER BOTH ACTIONS
SIGNED EMW
DATE DEC 7, 1988

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

1. FEE CATEGORY AND AMOUNT: 3E \$120

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

3. OTHER

SIGNED S. King
DATE 12/7/88

Note To: License Fee Management Section, ADM

From: Region I

Subject: VOIDED APPLICATION

*Rec. 8 I
3E
109973
WJ*

Control Number 109973

Applicant T CELL SCIENCES, INC.

Date Voided 12-21-88

Reason for Void:

COMBINED WITH C/N # 109561

After Review

EMW
Signature

12-21-88
Date

Attachment:
Official Record Copy
of Voided Action

no refund due

M 2 / 0