MATERIALS LICENSE

Amendment No. 42

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.

Licensee	In accordance with the letter dated March 11, 1996,
1. Children's National Medical Center	3. License Number 08-03309-01 is amended in its entirety to read as follows:
2. 111 Michigan Avenue, N.W. Washington, D.C. 20010	4. Expiration Date March 31, 2004
	5. Docket or Reference No. 030-01323

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. Any byproduct material with atomic numbers 3 through 83 and a half-life of less than or equal to 120 days	A. Any, except sealed sources	A. 100 millicuries of each radionuclide and 3 curies total
B. Hydrogen 3	B. Any	B. 400 millicuries
C. Carbon 14	C. Any	C. 60 millicuries
D. Iodine 125	D. Any	D. 500 millicuries
E. Americium 241	E. Sealed source (Amersham Model No. AMC.24)	E. 15 millicuries
F. Americium 241	F. Sealed source (Amersham Model No. AMC.24)	F. 14 millicuries
G. Iodine 129	G. Sealed sources (L K B Wallac Model #1261-104)	G. Not to exceed 0.025 microcuries per source and 0.25 microcuries total
H. Cesium 137	H. Sealed source (Code 045, Lot 1LK, Mallinckrodt	H. 1 millicurie

9. Authorized use

A. through D. Medical diagnosis, therapy and research in humans in accordance with any applicable Food and Drug Administration (FDA) requirements. Research and development as defined in 10 CFR 30.4; including instrument calibration and student instruction.

E. For use in a Siemens Gammasonics, Inc. Model 035-42300C dual isotope motion correction point source holder.

F. For use in a Siemens Gammasonics, Inc. Model SS-10244 anatomical marker.

G. and H. Non-human use. For calibrations and checking of instruments.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number: 08-03309-01

Docket or Reference Number: 030-01323

Amendment No. 42

CONDITIONS

10. Licensed material may be used only at the licensee's facilities located at 111 Michigan Avenue, N.W., Washington, District of Columbia.

11. A. Licensed material shall be used by, or under the supervision of, individuals designated in writing by the Radiation Safety Committee, Massoud Majd, M.D., Chairperson.

B. The use of licensed material in or on humans shall be by a physician, dentist, or podiatrist as defined in 10 CFR 35.2.

C. Physicians, dentists, or podiatrists designated to use licensed material in or on humans shall meet the training criteria established in 10 CFR 35, Subpart J and shall be designated in writing by the licensee's Radiation Safety Committee.

D. The Radiation Safety Officer for this license is Thomas C. Fearon, Ph.D.

12. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material at a single location to quantities below the limits specified in 10 CFR 30.72 which require consideration of the need for an emergency plan for responding to a release of licensed material.

13. Notwithstanding the requirements of 10 CFR 35.49(a) and (b), 35.100, 35.200, 35.300, 35.400 and 35.500 the licensee may use for any medical use any byproduct material or reagent kit. The licensee shall possess and use byproduct material for medical use in accordance with the prescriptive and performance criteria in the other sections of 10 CFR 35. This does not relieve the licensee from complying with applicable U.S. Food and Drug Administration (FDA) and other Federal and State requirements.

14. 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, containing licensed material and used in gas chromatography devices, with conspicuously etched or stamped radiation caution symbols.

15. A. 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 the foil temperatures from exceeding that specified in the certificate of registration referred to in 10 CFR 32.210.

B. When in use, detector cells containing a titanium tritide foil or a scandium tritide foil shall be vented to the outside.

16. The licensee shall conduct a physical inventory every three months to account for all sealed sources and devices containing licensed material received and possessed pursuant to 10 CFR 35.59, 35.400 and 35.500 and every six months for all other sealed sources and devices. Records of inventories shall be maintained for five years from the date of each inventory, and shall include the information required in 10 CFR 35.59(g).

17. 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.

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. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.

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.

18. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.

19. The licensee is authorized to hold radioactive material with a physical half-life of less than 120 days for decay-in-storage before disposal in ordinary trash, provided:

A. Waste to be disposed of in this manner shall be held for decay a minimum of ten half-lives.

B. Before disposal as ordinary trash, the waste shall be surveyed at the container surface with the appropriate survey instrument set on its most sensitive scale and with no interposed shielding to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.

C. A record of each such disposal shall be retained for three years. The record must include the date of disposal, the date on which the byproduct material was placed in storage, the radionuclides disposed, the survey instrument used, the background dose rate, the dose rate measured at the surface of each waste container, and the name of the individual who performed the disposal.

D. Generator columns shall be segregated so that they may be monitored separately to ensure decay to background levels prior to disposal.

20. Experimental animals, or the products from experimental animals, that have been administered licensed materials shall not be used for human consumption.

21. The licensee shall possess and use byproduct material for human research in accordance with the prescriptive and performance criteria in all sections of 10 CFR Part 35 except sections 35.49(a) and (b), 35.100, 35.200, and 35.300.

22. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR 71, "Packaging and Transportation of Radioactive Material."

23. The licensee shall not acquire licensed material in a sealed source or device unless the source or device has been registered with the U.S. Nuclear Regulatory Commission pursuant to 10 CFR 32.210 or equivalent regulations of an Agreement State.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
08-03309-01

Docket or Reference Number
030-01323

Amendment No. 42

24. 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, except for minor changes in the medical use radiation safety procedures as provided in 10 CFR 35.31. The U.S. 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 June 18, 1992
B. Letter dated February 7, 1994
C. Letter dated March 11, 1996

For the U.S. Nuclear Regulatory Commission

Date JUL 25 1996

By ORIGINAL SIGNED BY:
THOMAS K. THOMPSON

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

JUL 25 1996

Donald Brown
Chief Executive Officer
Children's National Medical Center
111 Michigan Avenue, N.W.
Washington, D.C. 20010

Dear Mr. Brown:

This refers to your license amendment request. Enclosed with this letter is the amended license. Please note that as part of this amendment, in accordance with 10 CFR 30.36, effective February 15, 1996, the expiration date of your license has been extended by a period of five years. Your new expiration date is stated in Item 4 of the license.

Please review the enclosed document carefully and be sure that you understand and fully implement all the conditions incorporated into the amended license. If there are any errors or questions, please notify the U.S. Nuclear Regulatory Commission, Region I Office, Licensing Assistance Team, (610) 337-5093 or 5239, so that we can provide appropriate corrections and answers.

Thank you for your cooperation.

Sincerely,

ORIGINAL SIGNED BY:

Thomas K. Thompson
Division of Nuclear Materials Safety

License No. 08-03309-01
Docket No. 030-01323
Control No. 123008

Enclosure:
Amendment No. 42

DOCUMENT NAME: R:\WPS\MLTR\L0803309.01
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	Beardsley		Thompson			
DATE	07/02/96		07/23/96	07/ /96	07/ /96	

OFFICIAL RECORD COPY **ML 10**

Children's
National Medical Center

Serving Children and Their Families for 125 years
1870-1995

Department of
Diagnostic Imaging and
Radiology
Children's Hospital
111 Michigan Avenue, N.W.
Washington, D.C. 20010-2970
(202) 884-5080

March 11, 1996

030-01323

Frank Costello, Ph.D.
Licensing Section Chief
US Nuclear Regulatory Commission, Region I
475 Allendale Road
King of Prussia, PA 19406

Dear Dr. Costello:

Reference is made to your Control #59618 and Children's National Medical Center's NRC License #08-03309-01.

As a result of the loss of burial access by NRC licensed facilities in the District of Columbia, Children's National Medical Center is faced with the problem of storing long lived radioactive solid waste in-house with very limited space available. The Radiation Safety Committee would like to pursue the idea of compaction of the waste as a short term aid in reducing the storage problem. The following information is provided to define the operation of the volume reduction program.

- An American International Company model LC-36 with drum contents compaction head is proposed. (Manufacturers brochure enclosed).

- The unit will be used to compact long term low level solid waste (paper, plastic) for isotopes having half lives greater than 60 days. (i.e., ^{14}C , ^{3}H and ^{35}S) the activity levels are in the range less than 200 micro curies total per 55 gallon drum.

- The potential for airborne release of radioactive material during compaction is considered to be zero since we are only dealing with solid waste of a non-volatile nature.

- The unit will be located on the 5th floor research area in the radioactive waste drum room (see floor plan). The room will be posted and secured.

- The unit will only be operated by radiation safety personnel according to the manufacture's operating instructions.

- Protective clothing will be used during the operation of the unit including lab coat and gloves.

Department of Pediatrics
Department of Radiology
The George Washington University
Medical Center

- The unit will be surveyed for removable contaminated after each use or at least monthly as part of the routine monthly surveys.

- The equipment will be checked for functional operation according to the manufacturers operating instructions. Drums will be visually monitored for defects or damage.

If you require additional information, please contact me at (202) 884-5075.

Thank you.

Thomas Fearon, Ph.D.
Radiation Safety Officer

TF:pr

TO

R

quality, strength, safety

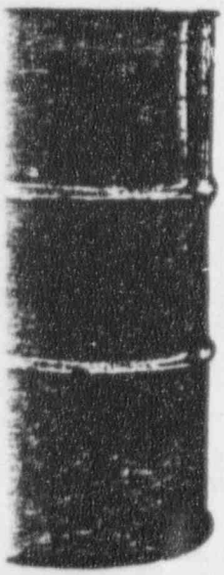
up to twice as much as competi-
are built like tanks for rugged use
is. Five-year warranty against
Explosion-proof motors. Safety
OSHA and ANSI requirements.

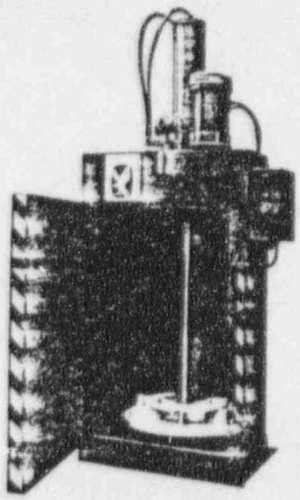
r crushing drum contents

International crushers can easily
ller platen for compacting drum
harmaceuticals, paint filters and
e materials.

purchase options

nal will find a way to put you in
r more drum crushers. New or
or lease. Ask us for details on an
l offer.





MODEL SDC-36 SINGLE DRUM CRUSHER

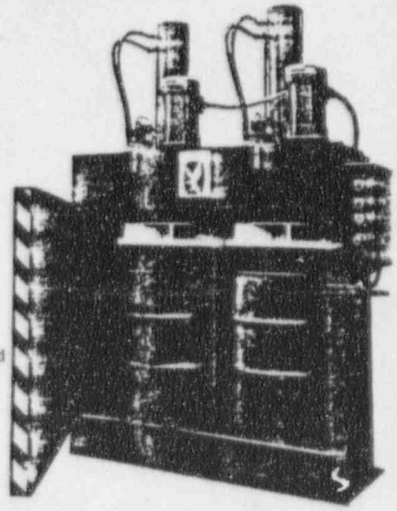
Features
- 14 to 1 volume reduction
- One drum per cycle, fully enclosed
- Large oil tank for continuous duty
- Hi-Lo pumping system for maximum efficiency
- Oil and watertight controls
- Simple operation, easy load/unload
- Explosion-proof motor - standard
- Safety interlocks and emergency stop
- Color-coded hoses
- Heavy-duty unitized construction
- Fork pockets for easy handling

Options
- Gasoline powered
- Drum contents compaction head
- Reservoir heater
- Weatherproof disconnect switch and power cord
- Fully explosion proof
- Hydraulic remote

Specifications

• Cylinder	8" OD, 7" ID, 38" stroke, 4" solid rod
• Motor	5 HP 3/60/230/460 volts
• Compacting force	105,000 lbs.
• Cycle time	48 seconds
• Dimensions	42" wide, 36" deep, 98" high
• Shipping weight	3,000 lbs.

MODEL TDC-60 DOUBLE DRUM CRUSHER

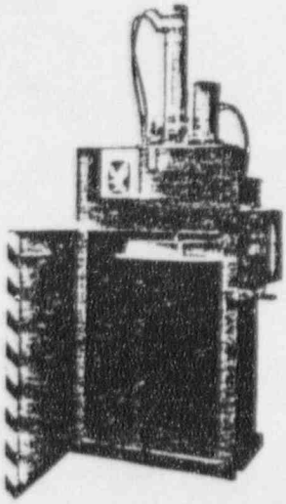


Features
- 14 to 1 volume reduction
- One or two drums per cycle, fully enclosed
- Large oil tank for continuous duty
- Hi-Lo pumping system for maximum efficiency
- Oil and watertight controls
- Simple operation, easy load/unload
- Explosion-proof motors - standard
- Safety interlocks
- Color-coded hoses
- Heavy-duty unitized construction
- Fork pockets for easy handling

Options
- Gasoline powered
- Drum contents compaction head
- Reservoir heater
- Weatherproof disconnect switch and power cord
- Fully explosion proof
- Hydraulic remote

Specifications

• Cylinders (2)	8" OD, 7" ID, 38" stroke, 4" solid rod
• Motors (2)	5 HP 3/60/230/460 volts
• Compacting force	105,000 lbs. each
• Cycle time	48 seconds each
• Dimensions	76" wide, 36" deep, 98" high
• Shipping weight	6,000 lbs.



MODEL LDC-36 ECONOMY SINGLE DRUM CRUSHER

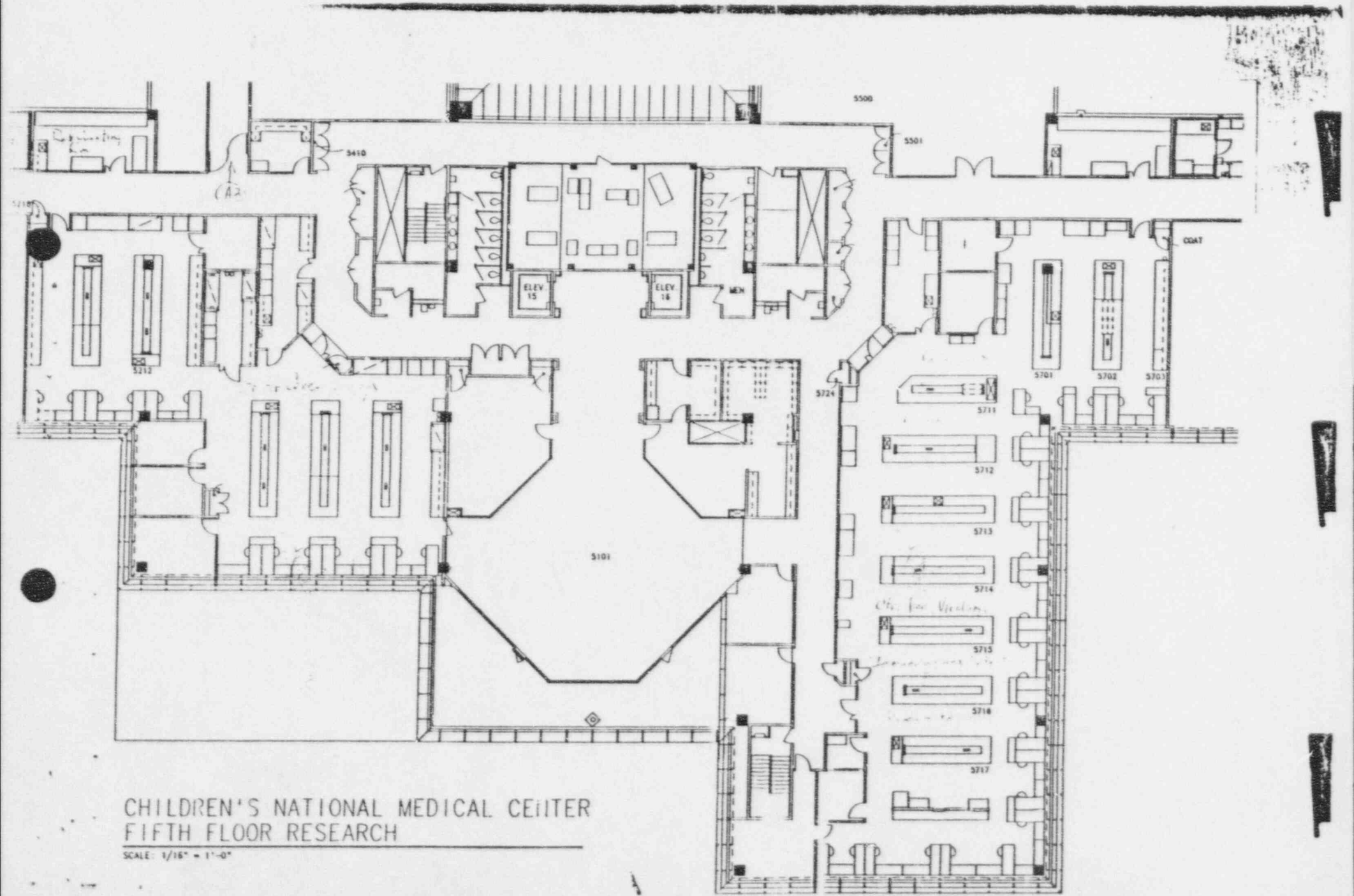
NEW

Features
- 6 to 1 volume reduction
- One drum per cycle, fully enclosed
- Large oil tank for continuous duty
- Hi-Lo pumping system for maximum efficiency
- Oil and watertight controls
- Simple operation, easy load/unload
- TEFC motor, standard tri-voltage
- Safety interlocks and emergency stop
- Color-coded hoses
- Heavy-duty unitized construction
- Fork pockets for easy handling

Options
- Sear-feed chute with safety interlock
- Removable floor with fork pockets
- Gasoline powered
- Drum contents compaction head
- Reservoir heater
- Weatherproof disconnect switch and power cord
- Fully explosion proof
- Hydraulic remote

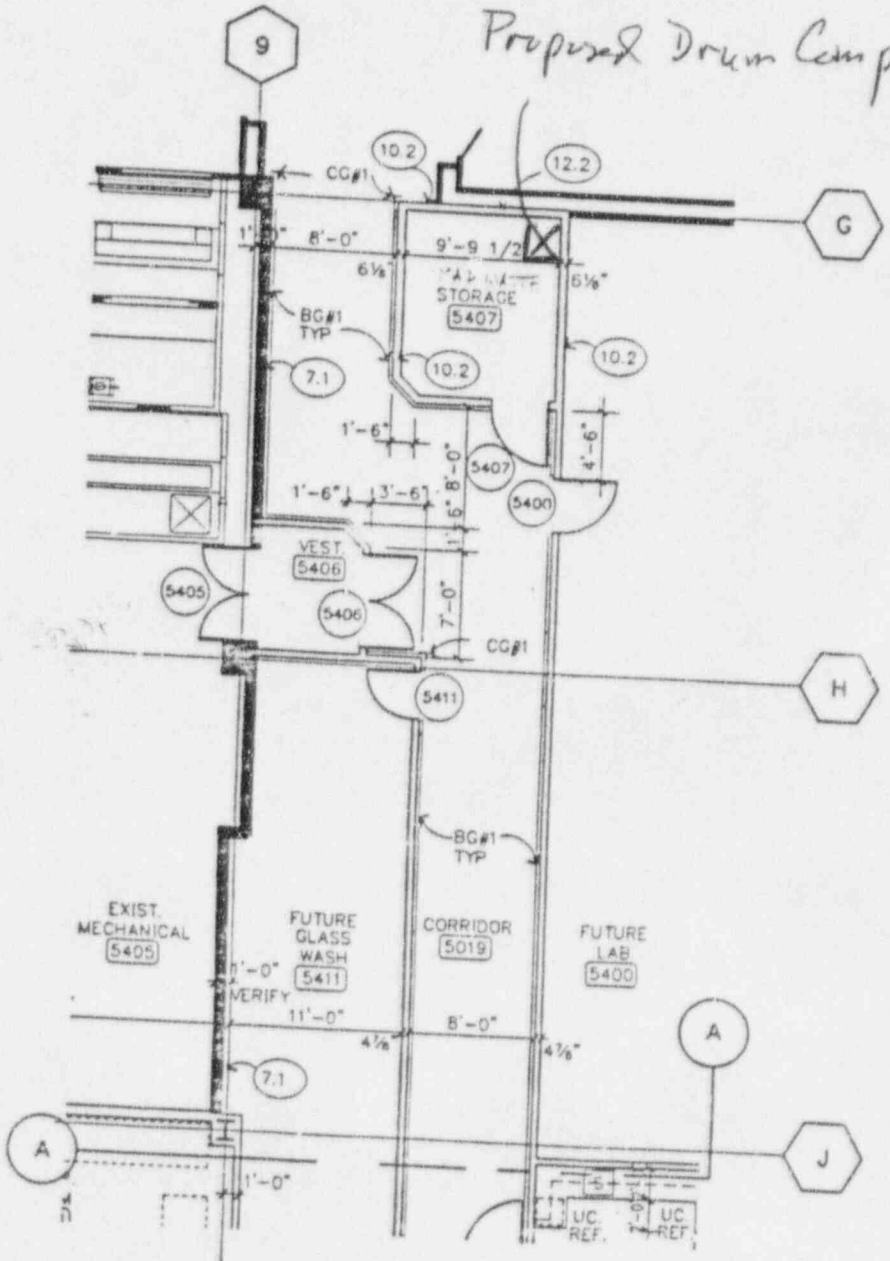
Specifications

• Cylinder	5½" OD, 4 ⅜" ID, 38" stroke, 3" solid rod
• Motor	3 HP 3/60/208/230/460 volts
• Compacting force	35,000 lbs.
• Cycle time	48 seconds
• Dimensions	42" wide, 36" deep, 98" high
• Shipping weight	2,000 lbs.



CHILDREN'S NATIONAL MEDICAL CEITER
FIFTH FLOOR RESEARCH

SCALE: 1/16" = 1'-0"



DIVISION OF ACCOUNTING AND FINANCE
REQUEST FOR REFUND TO EMPLOYEE/VENDOR

APR 10 1996

THE EMPLOYEE/VENDOR IDENTIFIED BELOW HAS OVERPAID THE NUCLEAR REGULATORY COMMISSION FOR GOODS AND/OR SERVICES PROVIDED AND IS DUE A REFUND

EMPLOYEE/VENDOR/PAYEE CODE: _____

NAME: CHILDREN'S NATIONAL MEDICAL CENTER

ADDRESS: ATTN: THOMAS FUARON, PH.D.

ADDRESS: 111 MICHIGAN AVENUE N.W.

CITY: WASHINGTON STATE: D.C. ZIP: 20010-2970

TRANS CODE: PX

TRANS TYPE:	FE	FUND:	X5280	JOB CODE:		AMOUNT:	$20.00
TRANS TYPE:	IR	FUND:	R1435	JOB CODE:	INTR	AMOUNT:	
TRANS TYPE:	IR	FUND:	R1099	JOB CODE:	ADCH	AMOUNT:	
TRANS TYPE:	IR	FUND:	R1099	JOB CODE:	FINE	AMOUNT:	

TOTAL REFUND AMOUNT: $20.00

COMMENTS: LIC 08-03309-01/CK 2079274/7B AND OVRPYT

(limit comments to 40 characters, including spaces)

PREPARED BY: Brenda Brown DATE: 4/9/96

AUTHORIZED BY: [signature] DATE: 4/10/96

ORIGINAL INV. NO: _____ DATE PAID: _____ AMOUNT: _____

REFUND ENTERED INTO COLLECT BY: _____

REFUND DETERMINED BY: _____ DATE: _____

PLEASE ATTACH APPROPRIATE SUPPORTING DOCUMENTATION

I 82

APR 6
LTR DTD 3/11/96
7B AMD FEE IS $560
(12300B)

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

(FOR LFMS USE)
INFORMATION FROM LTS

PROGRAM CODE: 02110
STATUS CODE: 0
FEE CATEGORY: 7B
EXP. DATE: 20040331
FEE COMMENTS: _____
DECOM FIN ASSUR REQD: N

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED
APPLICANT/LICENSEE: CHILDREN'S NATIONAL MEDICAL CENTER
RECEIVED DATE: 960315
DOCKET NO: 3001323
CONTROL NO.: 123008
LICENSE NO.: 08-06309-01
ACTION TYPE: AMENDMENT

2. FEE ATTACHED
AMOUNT: $580.00
CHECK NO.: 2079274

3. COMMENTS

SIGNED M. A. Perkins
DATE 3/22/96

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

1. FEE CATEGORY AND AMOUNT: 7B $580

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

3. OTHER _____

SIGNED Brenda Brown
DATE

I96

Log APR 6
Remitter
Check No. 2079274
Amount $580 Refunded $20
Fee Category 7B
Type of Fee AMD
Date Check Rec'd
Date Completed 4/4/96
B Brown