

0187



The Harshaw Chemical Company

DIVISION OF KEWANEE OIL COMPANY

CRYSTAL-SOLID STATE DEPARTMENT

6801 COCHRAN ROAD

SOLOON, OHIO 44139

Telephone: 216-248-7400

January 19, 1970

U. S. Atomic Energy Commission
Division of Material Licensing
Washington, D. C. 20545

Attn: Director, Material Licensing

Gentlemen:

In compliance with Sec. 31.8 n (4) and Sec. 70.19 d,
10 CFR, we submit the attached listings to report the total
quantities of Americium 241 and Plutonium 239 in the form
of calibration sources distributed to persons generally
licensed for the year 1969.

If this report lacks any item, please let us know. We
shall promptly comply. We can be reached at Area Code 216,
248-7400, Ext. 227.

Very truly yours,

Vincent L. Ravaschieri

Vincent L. Ravaschieri
Radiation Safety Officer
Crystal-Solid State Department

VLR:sw

9702260296 970218
PDR FOIA
BABCOK96-529 PDR

B/90

MATERIAL STATUS REPORT

FOR SPECIAL NUCLEAR MATERIALS HELD UNDER LICENSE
PREPARE A SEPARATE REPORT FOR EACH LICENSE

1. REPORTING LICENSEE:		c. License No. <u>SNM 427(ZHX)</u>	
a. Name <u>THE HARSHAW CHEMICAL CO.</u>		d. Period Ending <u>12-31-69</u>	
b. Address _____			
2. MATERIAL: (Prepare separate report for each material)	3. WEIGHT UNIT <u>Pu-Be</u>	4. TOTAL QUANTITY AND ISOTOPE DATA	
		a. ELEMENT	b. ISOTOPE
5. BEGINNING INVENTORY:		<u>16.00</u>	<u>14.75</u>
6. RECEIPTS:			
From _____	Shipper's License No. _____		
_____	_____		
_____	_____		
_____	_____		
7. TOTAL RECEIPTS			
8. PRODUCTION			
9. MATERIAL TO BE ACCOUNTED FOR (Total of lines 5, 7, and 8).		<u>16.00</u>	<u>14.75</u>
10. SHIPMENTS:			
To _____	Consignee's License No. _____		
_____	_____		
_____	_____		
_____	_____		
11. TOTAL SHIPMENTS			
12. PROCESSING LOSSES, DISCARDS, ETC.:			
a. MATERIAL FOR WHICH THE REPORTING LICENSEE IS FINANCIALLY RESPONSIBLE			
b. MATERIAL FOR WHICH THE REPORTING LICENSEE IS NOT FINANCIALLY RESPONSIBLE			
13. BURN-UP			
14. ENDING INVENTORY		<u>16.00</u>	<u>14.75</u>
15. MATERIAL ACCOUNTED FOR (Total of lines 11, 12a, 12b, 13 and 14).		<u>16.00</u>	<u>14.75</u>
16. DETAIL OF ENDING INVENTORY:			
a. MATERIAL ON HAND FOR WHICH REPORTING LICENSEE IS FINANCIALLY RESPONSIBLE TO THE AEC UNDER ABOVE LICENSE.		<u>16.00</u>	<u>14.75</u>
b. MATERIAL ON HAND FOR WHICH SOMEONE OTHER THAN REPORTING LICENSEE IS FINANCIALLY RESPONSIBLE TO THE AEC (Detail below)			
Name _____	License No. _____		
_____	_____		
_____	_____		
_____	_____		
c. Total of a. and b.			
17. MATERIAL IN POSSESSION OF OTHERS FOR WHICH REPORTING LICENSEE IS FINANCIALLY RESPONSIBLE TO THE AEC UNDER ABOVE LICENSE (Detail below)			
Name _____	Possessor's License No. _____		
_____	_____		
_____	_____		
_____	_____		
TOTAL		<u>16.00</u>	<u>14.75</u>

THE HARSHAW CHEMICAL COMPANY
CRYSTAL-ELECTRONICS PRODUCTS DEPARTMENT
6801 Cochran Rd.
Solon, Ohio 44139

0187

216 248-7400

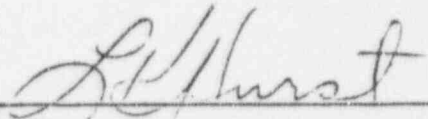
RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1	Am 241	.027 uC	Am 241 doped NaI(Tl) light pulser

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state licence for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is _____
No. _____, or Prime Contract No. W-31-109-ENG-38."

Firm Name: Argonne National Laboratory


Signature of Authorized
Personnel

Address: 9700 South Cass Avenue
Argonne, Illinois 60439

L. K. Hurst,
Director,
Special Materials & Services
Title

Purchase Order No. 665136

November 17, 1969

Date

~~665136~~

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION1945 EAST 97TH STREET
CLEVELAND, OHIO 44106
AREA CODE 216
721-8300RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1 EA.	Am 241	.00676 uC	Am 241 doped NaI(Tl) Light Pulser

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is
No. _____, or Prime Contract No. AT(45-1)-2130."

Firm Name: Atlantic Richfield Hanford Co.

R V Lawson
Signature of Authorized
Personnel

Address: Richland, Washington 99352

Title

Mgr. - Purch.Purchase Order No. W9P-618-15705

Date

6-19-69

RAD 3

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION

1945 EAST 97TH STREET
CLEVELAND, OHIO 44106
AREA CODE 216
721-8300

RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1 ea.	Am 241	.00121 uC .0121 uC	Na Act. CsI Crystal CsI(Na)

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is Specific License (Calif.) No. 1474-59, or Prime Contract No. ."

Firm Name: ANALOG TECHNOLOGY LAB.

RW Harman
R. W. Harman
Signature of Authorized
Personnel

Address: 3410 North Foothill Boul.
Pasadena, Calif. 91107

Radiation Safety Officer
Title

Purchase Order No. 1065-1166

2 April 1969
Date

THE HARSHAW CHEMICAL COMPANY
CRYSTAL-ELECTRONICS PRODUCTS DEPARTMENT
6801 Cochran Rd.
Solon, Ohio 44139

216 248-7400

RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
7	Am 241	5.4×10^{-5} uC ea.	NaI(Tl) crystal with Am 241 source

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state licence for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is California
No. 0109-59, or Prime Contract No. ."
per attached letter.

Firm Name: California Inst. of Technology

Signature of Authorized
Personnel

Address: Jet Propulsion Lab
4800 Oak Grove Drive
Pasadena, California 91103

Title

Purchase Order No. GU-511476

Date



JET PROPULSION LABORATORY California Institute of Technology • 4800 Oak Grove Drive, Pasadena, California 91103

October 22, 1969

Refer to: 325-REP/sc

Mr. Robert M Ward
Harshaw Chemical Company
Crystal and Electronics Department
6801 Cochran Road
Solon, Ohio 44139

Dear Mr. Ward:

In reference to your request from Dr. Albert Metzger, the Jet Propulsion Laboratory's license number for the possession and use of Americium-241 is CAL. 0109-59.

Sincerely,

R. E. Parker

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION1945 EAST 97TH STREET
CLEVELAND, OHIO 44106
AREA CODE 216
721-8300RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
2	Am 241	.027 uC	NaI(Tl) crystal with Am 241 source

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is California
No. 0109-59, or Prime Contract No. _____."

Firm Name: Jet Propulsion Laboratory
California Inst. of Technology F. E. Gallagher
Signature of Authorized
Personnel

Address: Jet Propulsion Lab
4800 Oak Grove Drive
Pasadena, Calif. 91103

Radiation Safety Officer
Title

Purchase Order No. 8/11/69

September 24, 1969
Date

Order being
shipped 8/29/69

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION

1945 EAST 97TH STREET
CLEVELAND, OHIO 44106
AREA CODE 216
721-8300

RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1	Am 241	.108 uC	CsI(Tl) crystal with Am 241 source

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is California
No. 0123-59, or Prime Contract No. "

under name of Mr. G. Coltrin

Senior Mechanical Engineer

per telephone / Bob Holpik 8/29/69

F. G. Patterson 213-359-9141

Firm Name: Conraq Corporation
1700 South Mountain Ave.
Duarte, Calif. 91010

Signature of Authorized
Personnel

Address:

Title

Purchase Order No. 1-58431

8/29/69

Date

RAD 3

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION

1945 EAST 97TH STREET
CLEVELAND, OHIO 44106
AREA CODE 216
721-8300

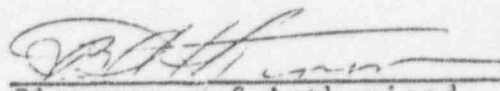
RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1 ea.	Am 241	.000054 uC	Am 241 doped NaI(Tl) Light Pulse

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is specific R and D
No. Calif. 0109-59, or Prime Contract No. N/A."

Firm Name: California Institute of
Technology


Signature of Authorized
Personnel

James B. Atkisson

Address: 4800 Oak Grove Drive
Pasadena, California 91103

Staff Assistant for Safety
Title

Purchase Order No. E-506206

June 23, 1969
Date

RAD 3

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION

1945 EAST 97TH STREET
CLEVELAND, OHIO 44106
AREA CODE 216
721-8300

RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1 ea.	Am 241	.027 uC	6"X6" NaI(Tl) Crystal.

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is TEXAS STATE RADIOACTIVE MATER
No. 4-1293, or Prime Contract No. ."

Firm Name: Columbia Scientific Research
Institute

J.R. Phelan
Signature of Authorized
Personnel

Address: 3625 Bluestein Boulevard
Austin, Texas 76721

Assoc. Dir. of Radiation Safety Office
Title

Purchase Order No. 7932

March 6th 1969
Date

RAD 3

THE HARSHAW CHEMICAL COMPANY
CRYSTAL-ELECTRONICS PRODUCTS DEPARTMENT
6801 Cochran Rd.
Solon, Ohio 44139

216 248-7400

RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1	Am 241	less than .0217uCi	NaI(Tl) crystal with Am 241 source

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state licence for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is _____
No. 47-01876-01, or Prime Contract No. _____."

Firm Name: E.I. DuPont de Nemours & Co.

L. E. Bush
Signature of Authorized
Personnel

Address: Field Project Mgr.
Washington, West Virginia
19898

R. P. O.
Title

Purchase Order No. PWC-374-W

Nov. 18, 1969
Date

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION

1945 EAST 97TH STREET
CLEVELAND, OHIO 44106
AREA CODE 216
721-8300

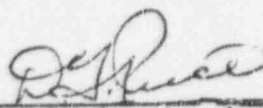
RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1 ea.	Am 241	.027 uc	NaI(Tl&Am 241)

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is State of Florida
No. 356-1, or Prime Contract No. ."

Firm Name: UNIVERSITY OF FLORIDA

D. G. Price, 
Signature of Authorized
Personnel

Address: 237 Nuclear Sciences Bldg.
Office of Radiation Control
Gainesville, Florida 32601

Radiation Control Officer
Title

Purchase Order No. 09304

April 1, 1969
Date

RAD 3

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION

1845 EAST 97TH STREET
CLEVELAND, OHIO 44106
AREA CODE 216
721-8300

RADIOISOTOPE CERTIFICATION

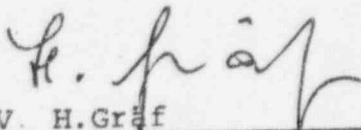
<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1 ea.	Am 241	.0054 uC	NaI(Tl) Light Pulser

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is "Umgangsgenehmigung" No. 23.III-8950,1B-, or Prime Contract No. _____."

79 c and supplement No 23.11 + 8950, 1 B - 491 e

Firm Name: HARSHAW CHEMIE, G.M.B.H.


i.V. H.Graf
Signature of Authorized
Personnel

Address: Wiesenau 2
Frankfurt/Main,
West Germany

Handlungsbevollmächtigte
Title

Purchase Order No. 69/57

May 23, 1969
Date

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION

1945 EAST 97TH STREET
CLEVELAND, OHIO 44106
AREA CODE 216
721-8300

RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1 ea.	Am 241	.00086 uC	Am 241 light pulser

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is State of California
No. 1378-59, or Prime Contract No. _____."

Firm Name: HELGESON NUCLEAR SERVICES

Geo. Lewis Helgeson
Signature of Authorized
Personnel

Address: Atten; Robert R. Berlen
Pleasanton, California

George Lewis Helgeson
President
Title

Purchase Order No. 4076

3/28/69
Date

RAD 3

THE HARSHAW CHEMICAL COMPANY
CRYSTAL-ELECTRONICS PRODUCTS DEPARTMENT
6801 Cochran Rd.
Solon, Ohio 44139-

216 248-7400

RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1	Am 241	.0027 uC	NaI(Tl) crystal with Am 241 light pulser

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state licence for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is U.S.A.E.C.
No. 12-171-3, or Prime Contract No. _____."

(License # on order)
See attached

Firm Name: I.I.T. Research Institute

Signature of Authorized
Personnel

Address: 3719 South Shields Ave.
Chicago, Illinois 60609

Title

Purchase Order No. 37825-53928 (Remount)

Date

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION

1945 EAST 97TH STREET
CLEVELAND, OHIO 44106
AREA CODE 216
721-8300

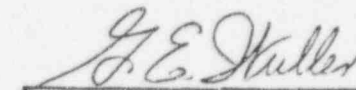
RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1 ea.	Am 241	.0013 uC	Integral Line Assbly.

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is Source Material License
No. SMA-826, or Prime Contract No. _____."

Firm Name: Kerr-McGee Corp.



Signature of Authorized
Personnel
G. E. Wuller
Nuclear Division
Staff Engineer

Address: Cimarron Facility - C/D P.G.
Highway Junction 33 & 74
Oklahoma City, Oklahoma 73102

Title
Licensing & Regulation

Purchase Order No. N 10018

February 11, 1969
Date

RAD 3

THE HARSHAW CHEMICAL COMPANY
CRYSTAL-ELECTRONICS PRODUCTS DEPARTMENT
6801 Cochran Rd.
Solon, Ohio 44139

216 248-7400


RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
3	Am 241	.027 uC ea.	NaI(Tl) crystal with Am 241 light pulser

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is Radioisotope Licence
No. 5-3571-70, or Prime Contract No. .
Atomic Energy Control Board, Ottawa, Canada

Firm Name: McPhar Geophysics, Ltd.


Signature of Authorized
Personnel

Address: 139 Bond Avenue
Don Mills, Ontario, Canada

Purchasing Agent
Title

Purchase Order No. G-3868

November 25, 1969
Date

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION

1945 EAST 97TH STREET
CLEVELAND, OHIO 44106
AREA CODE 216
721-8300

RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1 ea.	Am 241	.027 uC	5" Dia X 4" thick NaI(Tl) mounted crystal w. Am 241 Light Pulser

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is AMERICIUM ²⁴¹
No. 5-3571-70, or Prime Contract No. N/A.
ATOMIC ENERGY CONTROL BOARD
P.O. Box 1046, OTTAWA, CANADA

Firm Name: MCPHAR GEOPHYSICS

Attn: TOM GRIMM

Tom V. Grimm
Signature of Authorized
Personnel

Address: 139 Bond Avenue
Don Mills, Ontario, Canada

SENIOR R&D ENGINEER
Title

Purchase Order No. G-1053

January 21st, 1969
Date

RAD 3

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION

1945 EAST 97TH STREET
CLEVELAND, OHIO 44106
AREA CODE 216
731-8300

RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
2 EA.	Am 241	.027 uC	Am 241 doped NaI(Tl) Light Pulser

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is Administrative License
No. 5-2571-70, or Prime Contract No. ."

Firm Name: McPhar Geophysics, Ltd.

L. Brail
Signature of Authorized
Personnel

Address: 139 Bond Avenue
Don Mills, Ontario, Canada

Contractor
Title

Purchase Order No. G-2078 (being shipped)

June 12/69
Date

RAD 3

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION

1945 EAST 97TH STREET
CLEVELAND, OHIO 44106
AREA CODE 216
721-8300

RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1 ea.	Am 241	.027 uC	CsI(Na) crystal

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is Specific
No. 01-66571-10, or Prime Contract No. _____."

Firm Name: N.A.S.A.

J. L. Myatt, R.P.O.
Signature of Authorized
Personnel

Address: Geo. C. Marshall Space Flight Center
M/F Bldg. 4471, P.O. H-57310A
Huntsville, Alabama 35812

Radiation Protection Officer
Title

Purchase Order No. H57310A

Date 4/18/69

RAD 3

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION

1945 EAST 97TH STREET
CLEVELAND, OHIO 44106
AREA CODE 216
721-8300

RADIOISOTOPE CERTIFICATION

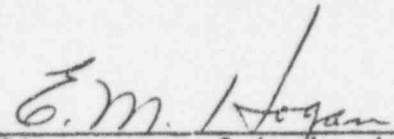
<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1 ea.	Am 241	.0013 uC	Integral Assembly Scintillation Detec

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is _____
No. _____, or Prime Contract No. _____."

Items under our Purchase Order No. 10709 are exempt from ALL State licenses.

Firm Name: Nortec- Div. of S.A.I.


Signature of Authorized
Personnel

E. M. Hogan, Production Manager

Address: 3001 George Washington Way
Richland, Washington 99352

Title

Purchase Order No. 10709

2-11-69

Date

RAD 3

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION

RECEIVED

FEB 10 1969

PURCHASING

1945 EAST 97TH STREET
CLEVELAND, OHIO 44106
AREA CODE 216
721-8300

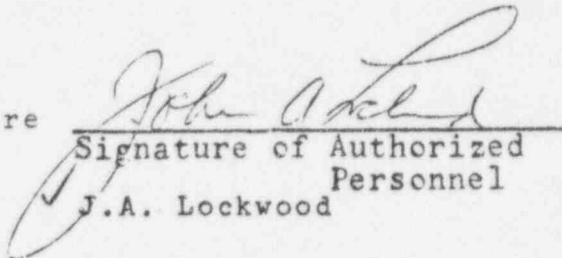
RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1 ea.	Am 241	.0000811 uC	Mounted Am 241 Doped Thallium Act. Sodium Iodide Crystal.

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is State
No. 135-R, or Prime Contract No. ."

Firm Name: University of New Hampshire


Signature of Authorized
Personnel
J.A. Lockwood

Address: Business Office
Thompson Hall
Borham, New Hampshire 03824

Professor and Project Director
Title

Purchase Order No. 11006

February 11, 1969
Date

RAD 3

THE HARSHAW CHEMICAL COMPANY
CRYSTAL-ELECTRONICS PRODUCTS DEPARTMENT
6801 Cochran Rd.
Solon, Ohio 44139

216 248-7400

RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1	Am 241	.054 uC	Mounted CsI(Tl) crys with Am 241 source

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state licence for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is to emit x-ray fluorescence in
No. 5-3608-71 , or Prime Contract No. police materials."

Firm Name: Sharpe Instruments

AE Wells

Signature of Authorized
Personnel

Address: 79 Martin Ross Avenue
Downsview, Ontario, Canada

Purchasing Agent
Title

Purchase Order No. 08032

Nov 14/69
Date

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION

1945 EAST 97TH STREET
CLEVELAND, OHIO 44106
AREA CODE 216
721-8300

RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1 ea.	Am 241	.027 uC	3X3 NaI(Tl)
1 ea.	Am 241	.027 uC	1X2 NaI(Tl)

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is CFS-1
No. _____, or Prime Contract No. _____

This quantity of Am-241 sealed in a can as a calibration source is exempt from licensing per 10 CFR 31.8 (5 uCi)

Firm Name: STURRUP NUCLEAR DIV.

R.B. Kelly
Signature of Authorized Personnel

Address: Canberra Industries
50 Silver St.
Middletown, Conn.

Dir H & Safety
Title

Purchase Order No. 5405

4-14-69
Date

RAD 3

0187

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION

1945 EAST 97TH STREET
CLEVELAND, OHIO 44106
AREA CODE 216
721-8300


RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1 ea.	Am 241	.0543 uC	Am 241 Light Pulser

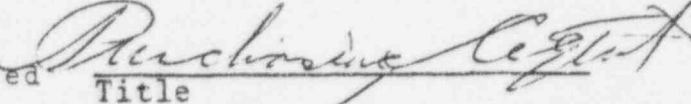
"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is Radioisotope.
No. 5-3608-71, or Prime Contract No. ."

Firm Name: Sharpe Instruments


Signature of Authorized
Personnel

Address: Division of Scintrex Limited
79 Martin Ross Avenue
Downsview, Ontario, Canada


Title

Purchase Order No. 6875

Feb 21/69
Date

RAD 3

THE HARSHAW CHEMICAL COMPANY
CRYSTAL-ELECTRONICS PRODUCTS DEPARTMENT
6801 Cochran Rd.
Solon, Ohio 44139

216 248-7400

RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1	Am 241	.0027 uC	Am 241 doped NaI(Tl) crystal light pulser

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state licence for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is Texas license
No. 4-398, or Prime Contract No. ."

Firm Name: Texas Nuclear Corp.

W. Wendrich
Signature of Authorized
Personnel

Address: 9101 Highway 183
Austin, Texas 78756

Health Physicist
Title

Purchase Order No. 24642

11/14/69
Date

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION

~~CLEVELAND, OHIO 44106~~
~~AREA CODE 216~~

6801 Cochran Rd
Solon, Ohio 44133

RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1	Am 241	.027 uC	NaI(Tl) crystal with Am 241 source

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is RADIOACTIVE MATL. LIC. Calif.
No. 1314-70, or Prime Contract No. _____."

Firm Name: Time Zero

Herbert S. Lowery
Signature of Authorized
Personnel

Address: 3530 Torrance Blvd.
Torrance, California 90503

ADMIN. Radiation Safety Office
Title

Purchase Order No. 542

9-8-69

Date

Already being shipped

RAD 3

THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE
DIVISION

1945 EAST 97TH STREET
CLEVELAND, OHIO 44106
AREA CODE 216
721-8300

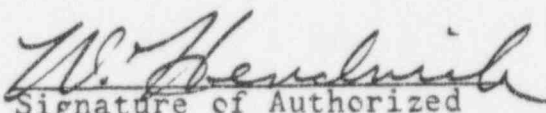
RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1 ea.	Am 241	.027 uC	NaI(Tl) Crystal

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state license for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is Texas
No. 4-398, or Prime Contract No. ."

Firm Name: TEXAS Nuclear Corporation


Signature of Authorized
Personnel

Address: 9101 Highway 183
Austin, Texas 78765

Health Physicist
Title

Purchase Order No. 22936

May 8, 1969
Date

RAD 3

THE HARSHAW CHEMICAL COMPANY
CRYSTAL-ELECTRONICS PRODUCTS DEPARTMENT
6801 Cochran Rd.
Solon, Ohio 44139

0187
216 248-7400

RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
1	Fe 55	1.00 mC	Sealed & mounted on Harshaw G40 PC Tube

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state licence for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is IRON 55
No. 22-13502-01, or Prime Contract No. _____."

Firm Name: Potlatch Forest, Inc.

David P. Rawski
Signature of Authorized
Personnel

Address: Cloquet, Minnesota 55720

Research Chemist
Title

Purchase Order No. 28331 C

Unit already received.

Dec. 10, 1969
Date

018

THE HARSHAW CHEMICAL COMPANY
CRYSTAL-ELECTRONICS PRODUCTS DEPARTMENT
6801 Cochran Rd.
Solon, Ohio 44139

216 248-7400

RADIOISOTOPE CERTIFICATION

<u>Quantity</u>	<u>Isotope</u>	<u>Activity</u>	<u>Description</u>
One	Fe ⁵⁵	1 mc	Sealed Source

"I hereby certify that the purchaser has a specific Atomic Energy Commission or state licence for the radioactive material listed above, or is authorized to receive the above material by contractual agreement with the Atomic Energy Commission.

The type of license and license number is by product material
No. 13-11956-02, or Prime Contract No. ."

Firm Name: Ethyl Corporation
VisQueen Division


J. D. Washburn

Signature of Authorized
Personnel

Address: 34th & Ft. Harrison Rd.
P. O. Box 1548
Terre Haute, Ind. 47808

Supervisor, O. E. Laboratory
Title

Purchase Order No. 1-11142
9/19/69

December 15, 1969
Date

DEC 23 1969