



United States
Department of
Agriculture

Office of
The Secretary

Office of Personnel,
Safety and Health
Management Division

put 11/16/95
Radiation Safety Staff
4700 River Road, Unit 91
Riverdale, MD 20737

2 NOV 1995

Mr. James Bondeck
Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406-1415

Re: License No. 19-00915-06
Docket No. 030-04530

Dear Mr. Bondeck:

I spoke with Mr. John Lubinsky, at the NRC's Rockville office regarding their evaluation of the Husman irradiator using the Amersham source capsule. He indicated that I should submit certain information to you, and provide him with a copy. Some of this information has been submitted previously, but for completeness, it is included again.

It is my understanding that he will review the irradiator/source compatibility.

Currently, the U.S. Department of Agriculture (USDA) is licensed to operate three Husman irradiators, one Model 520 and two Model 521, having a maximum loading capacity of 42,000 curies of cesium-137. These units are loaded with sources manufactured by Oak Ridge National Laboratories (source designations are: SK-343, SK-244, and RD2128).

The Husman irradiator was originally approved as a Type B package, with Certificate of Compliance 9182. This certificate expired on July 31, 1993.

Husman irradiators are self-shielded units, used for irradiation of pupae for the USDA sterile male release program to control insects such as screwworm, medfly, and other pests.

Our current amendment request is to load another Model 521 Husman irradiator with a maximum of 42,000 curies of cesium-137 using an Amersham capsule X.2157.

Compatibility of sources with Husman Model 521 irradiator

The Certificate of Approval of Special Form Radioactive Material GB/379/8-85 (attached) for Amersham Capsule X.2157 indicates that this capsule is approved through March 1996. This capsule is purchased by J. L. Shepherd and resold as their Model 6810, having California approval CA598S119S.

Eighteen sources, six in each source tube, will be loaded into the irradiator. In addition, appropriate spacers will be inserted between the sources to produce a uniform radiation field in the irradiation chamber.

9610300195 960927
PDR RC * PDR
SSD



Reference GB/379/3-85

Certificate Issue 1

Certificate of Approval of Design for Special Form Radioactive Material

Title	
Capsule Code X.2157	
Drawing Nos and Specification References	
Assembly:	3A 62511 Issue B
Details:	2A 62509 Issue B
	2A 62510 Issue C
	3A 62612 Issue B
Application Ref:- MPW/379/1193	
Q.A. Programme Ref: I P D Q A M	
Radioactive Material...	Maximum Activity
Caesium - 137	102 TBq

THIS IS TO CERTIFY that the Secretary of State for Transport being, for the purposes of the Regulations of the International Atomic Energy Agency, the Competent Authority of Great Britain in respect of inland surface transport and of the United Kingdom of Great Britain and Northern Ireland in respect of sea and air transport and the Department of the Environment for Northern Ireland being the Competent Authority of Northern Ireland in respect of inland surface transport, have approved the above mentioned Special Form Design. Radioactive material manufactured to the above mentioned design qualifies as special form radioactive material and as such will meet the requirements of the regulations overleaf.

This Certificate of Approval applies only to the design as set out in the above named drawings and specifications submitted by Amersham International plc.

In the event of any alteration in the composition of the package, the package design or in any of the facts stated in the application for approval, this certificate will cease to have effect unless the Competent Authority is notified of the alteration and the Competent Authority confirms the certificate notwithstanding the alteration.

This Certificate Cancels all Previous Issues and is valid until 31 March 1996


COMPETENT AUTHORITY
IDENTIFICATION MARK:

GB/379/3-85

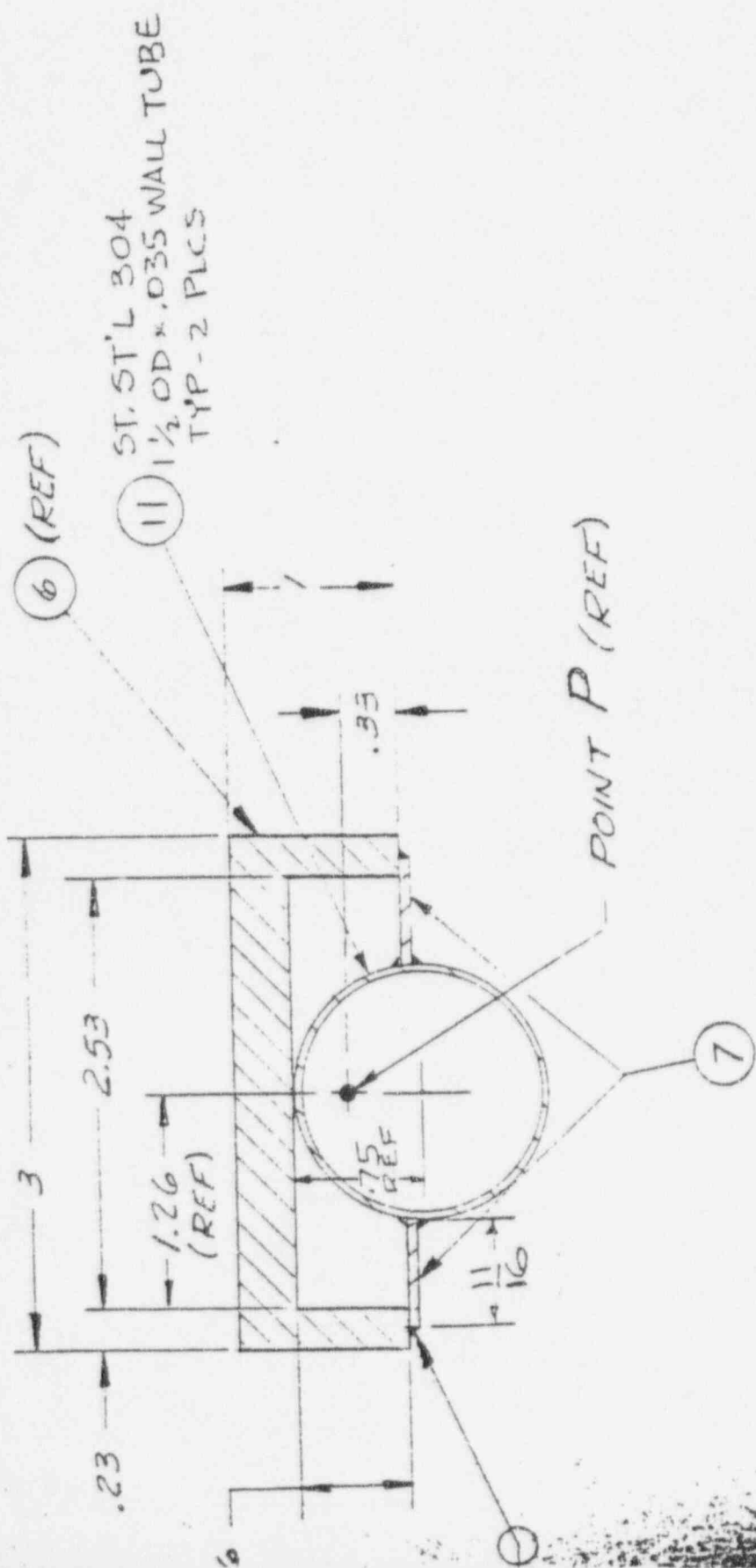
UNITED KINGDOM COMPETENT
AUTHORITY FOR THE TRANSPORT

16 DEC 1993

OF RADIOACTIVE
MATERIALS


Transport Radiological Adviser
Department of Transport
2 Marsham Street
London SW1P 3YB

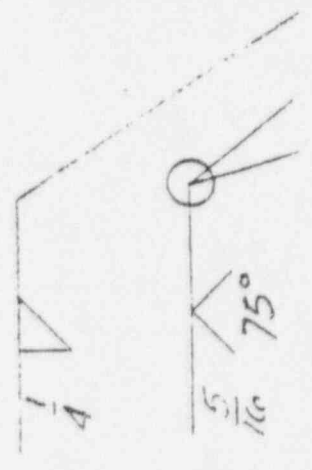
On behalf of the Secretary of State
for Transport and the Department of
the Environment for Northern Ireland



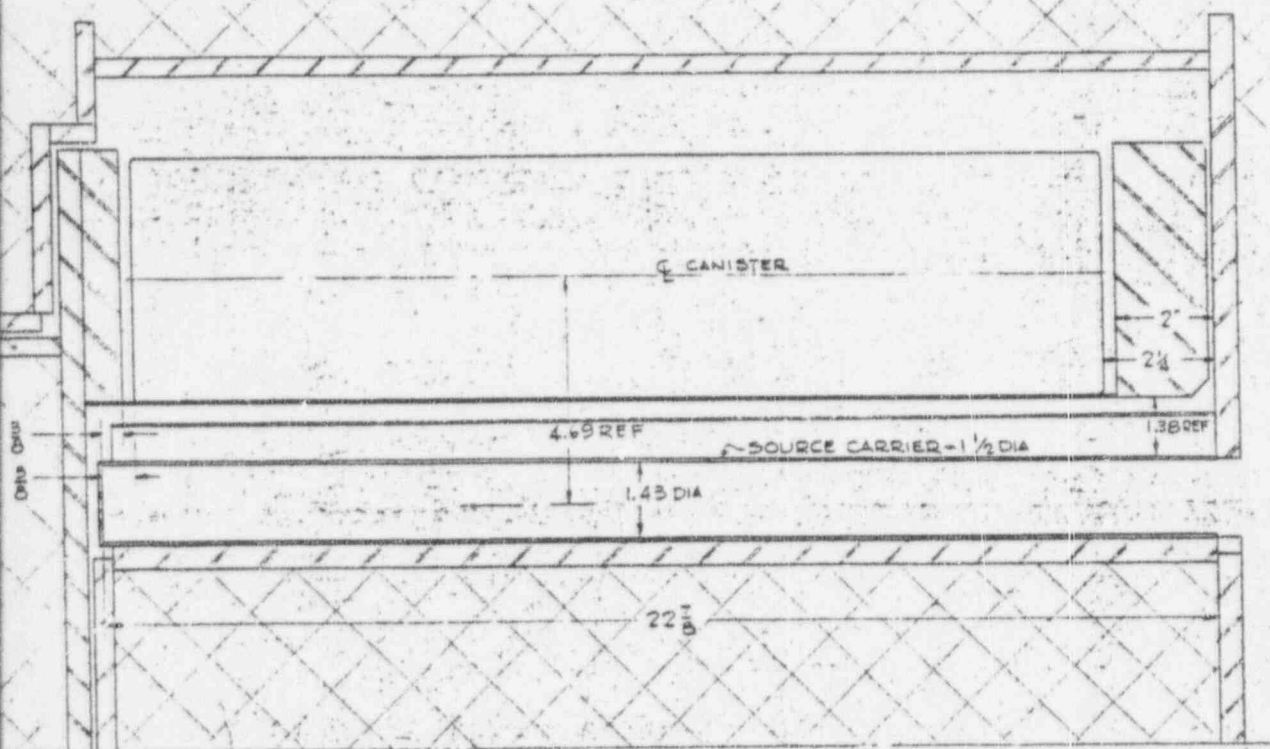
ST. ST'L 304
 $1\frac{1}{2}$ OD x .035 WALL TUBE
 TYP - 2 PLCS

DETAIL C
 SCALE 1/1

12' 4"



B/S B-



5K12

A-A
1/2 SIZE

ROTOR ASSEMBLY
SOURCE CARRIER - 1 1/2 DIA



United States
Department of
Agriculture

Office of
The Secretary

Human Resources Management,
Safety & Health
Management Division

Radiation Safety Staff
4700 River Road, Unit 91
Riverdale, MD 20737-1228

Interoffice Memorandum

⁶¹³⁹
Faxed to 415-5369 Total pages including cover page: 4

Date: August 16, 1996

To: Michele Burgess
US NRC
Rockville, MD

From: **Jack Patterson**
Health Physicist

Phone: 301.734.4948
Fax: 301.734.5050

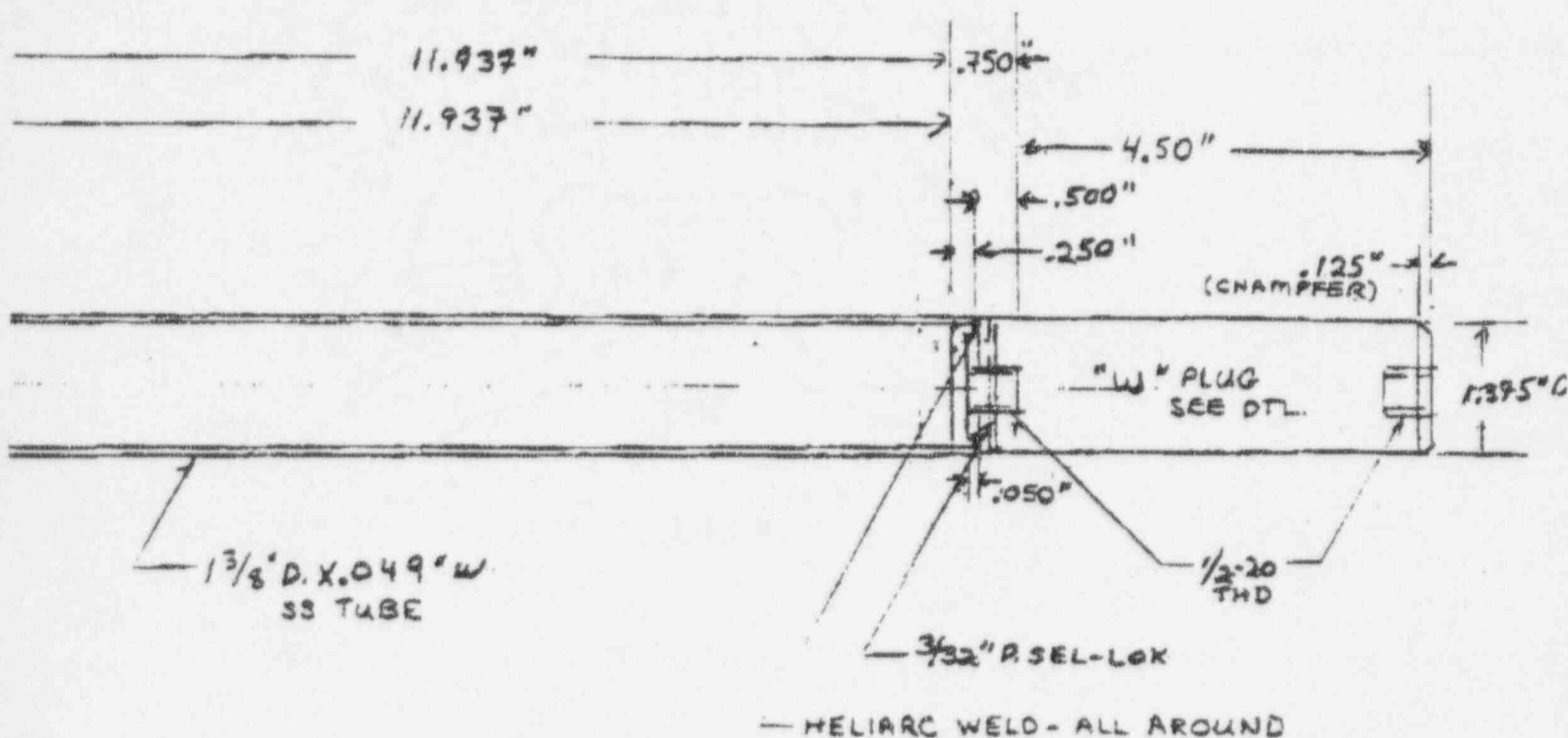
Subject: Clarification of JL Shepherd drawing

Attached are three drawings that provide additional detail regarding the JL Shepherd sources and their placement in the Husman Irradiator.

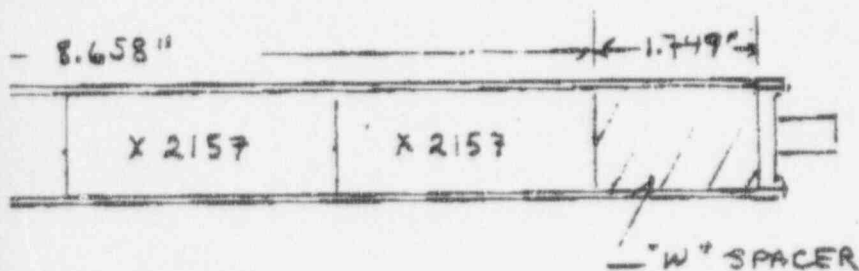
The first drawing is a replacement for the drawing attached to our letter to Mr. Baggett dated May 7, 1996. This drawing is more legible. It also indicates the model number of the sources (X2157) and their position in the source tube. The dimensions of these sources have been added to the drawing and are 1.265" O.D. and 2.886" long.

Drawings two and three are enlargements of the first drawing and provide greater clarity of the source tube end.

I apologize for the confusion in the earlier drawing.



ATION OF EACH SOURCE.



A-1 REV. 8/14/96 LEGIBILITY CHANGES - MFS
A REV. 2/22/98 CHG DIM'S, JLS

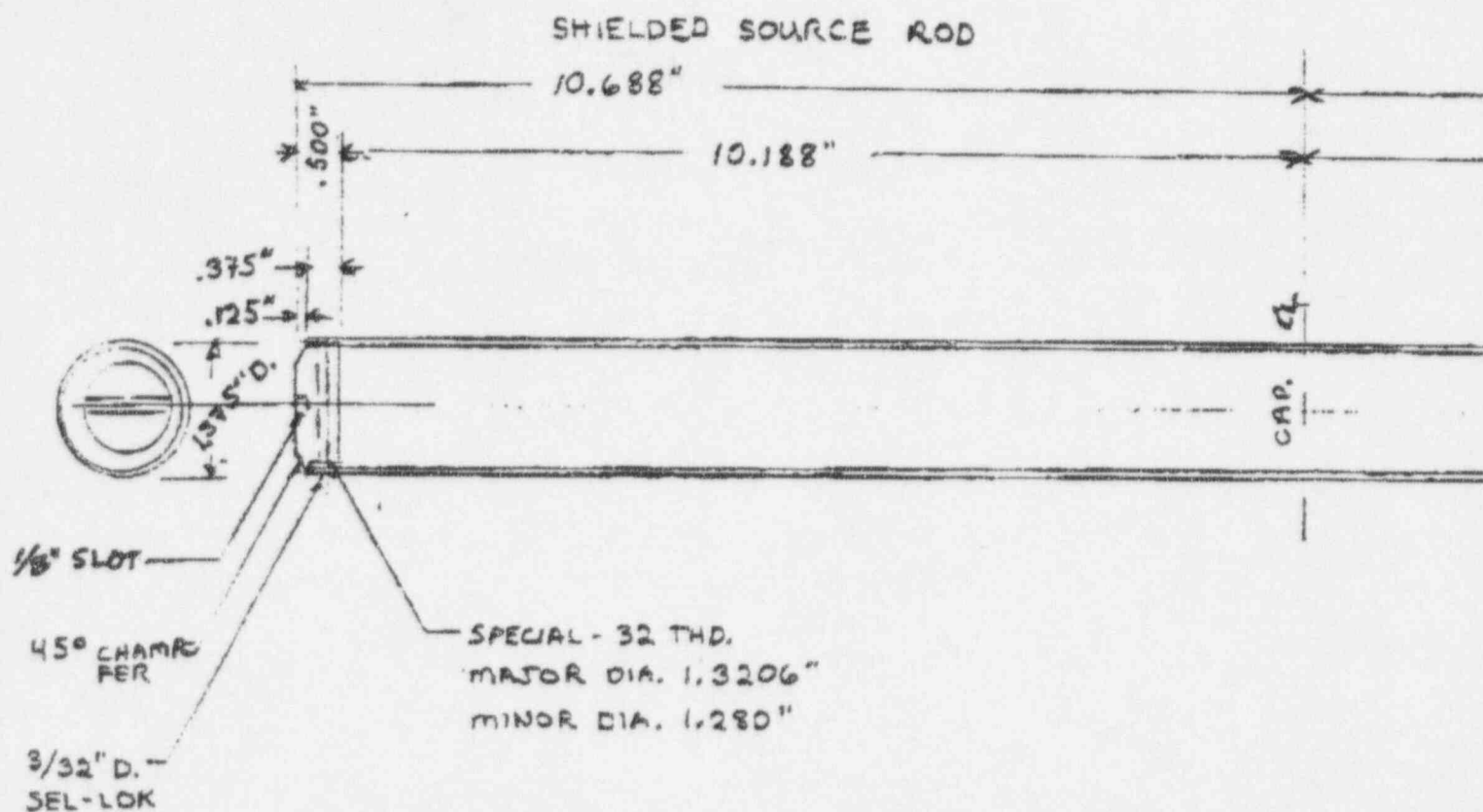
J. L. SHEPHERD and Associates

DRAWN BY	DATE	APPROVED BY	SCALE
A-1	2/15/98	[Signature]	1/2

SWEETED SC RD TUFFIC - HUSSMAN.

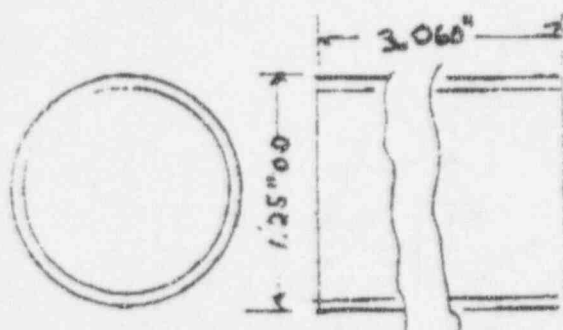
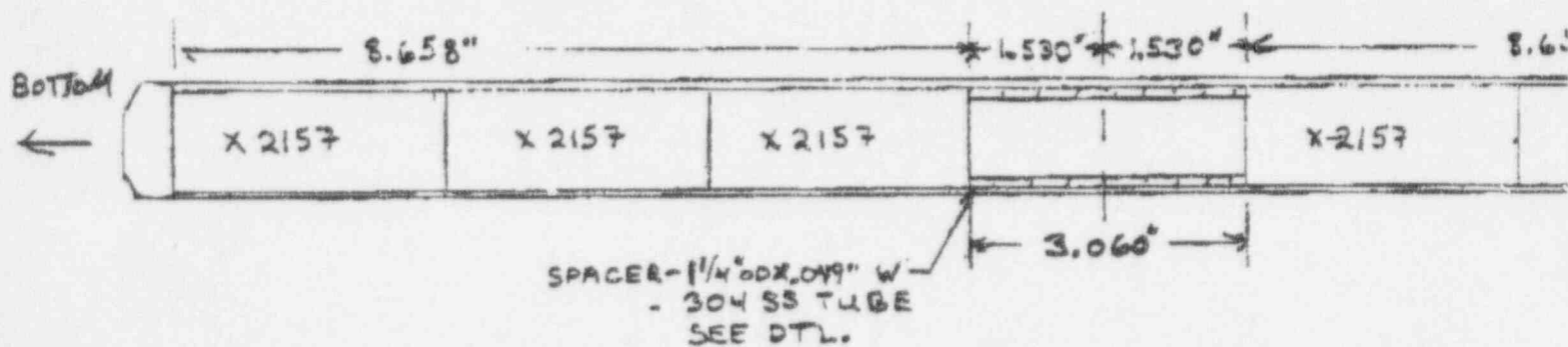
3 RES'D

A-06042-4124
REV. A-1

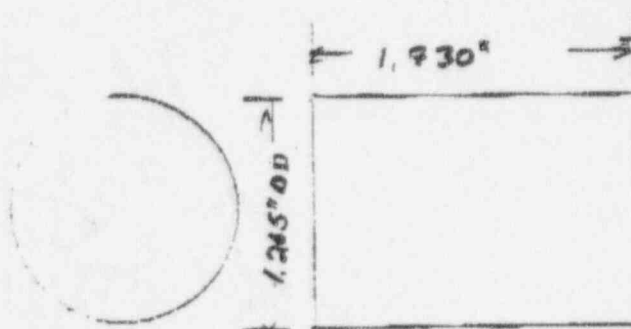


AMERSHAM X 2157 CAPSULE (1.265" O.D. X 2.886" L)

SOURCE LOADING PATTERN - SEE LAYOUT FOR LOCATION



SPACER DTL. FS



"W" PLUG DTL
FS



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SEALED SOURCE SAFETY SECTION
MEDICAL, ACADEMIC, & COMMERCIAL
USE SAFETY BRANCH

OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY

FAX TRANSMITTAL

TO

1. Jack Patterson

FROM

USDA

FAX: 301 734-5050

301-734-4948

COMMENTS:

COVER SHEET PLUS 1 PAGES

SENT BY: Michele Burgess

PHONE: (301) 415-5868

FAX: (301) 415-5369

TRANSMISSION REPORT

09.27.1996 15:01

301 415 5369

DATE TIME	DURATION	REMOTE ID	MODE	PAGES	RESULT
09.27 15:00	00'57"	301 734 5050	ECM	2	O.K.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SEALED SOURCE SAFETY SECTION
MEDICAL, ACADEMIC, & COMMERCIAL
USE SAFETY BRANCH

OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY

FAX TRANSMITTAL

TO

FROM

1. Jim Joyner

RI

FAX: (610) 337-5324

COMMENTS:

COVER SHEET PLUS 1 PAGES

SENT BY: Michele Burgess

PHONE: (301) 415-5868

FAX: (301) 415-5369

TRANSMISSION REPORT

09.27.1996 15:03

301 415 5369

DATE TIME	DURATION	REMOTE ID	MODE	PAGES	RESULT
09.27 15:02	01'05"	610 337 5324	ECM	2	O.K.



UNITED STATES
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WASHINGTON, D.C. 20555-0001

SEALED SOURCE SAFETY SECTION
MEDICAL, ACADEMIC, & COMMERCIAL
USE SAFETY BRANCH

OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY

FAX TRANSMITTAL

TO

FROM

1. C. Dolce

RI

FAX: (2610-337-5324)

COMMENTS:

COVER SHEET PLUS 1 PAGES

SENT BY: Michele Burgess

PHONE: (301) 415-5868

FAX: (301) 415-5369

TRANSMISSION REPORT

09.27.1996 15:06

301 415 5369

DATE TIME	DURATION	REMOTE ID	MODE	PAGES	RESULT
09.27 15:04	01'05"	610 337 5324	ECM	2	O.K.

NRC FORM 567

(8-93)

U. S. NUCLEAR REGULATORY COMMISSION

REQUEST FOR A SEALED SOURCE OR DEVICE EVALUATION

INSTRUCTIONS: Send this request AND a copy of all related letters/applications and drawings to: The Sealed Source Safety Section, ATTN: Chief, OWFN Mail Stop 6 H3. Change the License Tracking System milestone to 19 and assign to reviewer code I-5.

NOTE: Retain a copy of this request with the application and background files.

REQUESTER <i>Dept of Agriculture</i>		REGION/LOCATION: <input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/> IV <input type="checkbox"/> V <input type="checkbox"/> HQ <input type="checkbox"/> LFDCB	
TELEPHONE NUMBER	DATE	TYPE OF ACTION REQUESTED (Check as appropriate)	
APPLICANT'S NAME		<input type="checkbox"/> SOURCE REVIEW <input type="checkbox"/> AMENDMENT OF REGISTRATION SHEET NUMBER(S)	
MAIL CONTROL NUMBER(S)		<input type="checkbox"/> DEVICE REVIEW	
LETTER/APPLICATION DATE <i>11/2/95</i>	LICENSE NUMBER(S) <i>14-00915-06</i>	<input checked="" type="checkbox"/> CUSTOM REVIEW	

COMMENTS

FOR SSSS USE ONLY

REVIEWER <i>Burgess</i>	MODEL NUMBERS <i>Husman model 521</i>	NUMBER ASSIGNED <i>95-114</i>
DATE RECEIVED <i>11/16/95</i>	DATE ASSIGNED <i>4/10/96</i>	DATE TO FEES <i>11/17/95</i> <i>Add till we figure this out</i>

TYPE OF ACTION (Indicate the number of each type)

<input type="checkbox"/> COMMERCIAL DISTRIBUTION (FORMAL)		<input checked="" type="checkbox"/> USE BY A SINGLE APPLICANT (CUSTOM)	
SOURCE (9C)	DEVICE (9A)	SOURCE (9D)	DEVICE (9B)
<input type="checkbox"/> NEW AMENDMENT	<input checked="" type="checkbox"/> NEW AMENDMENT	<input type="checkbox"/> NEW AMENDMENT	<input checked="" type="checkbox"/> NEW AMENDMENT
<input type="checkbox"/> NO SAFETY EVALUATION REQUIRED <input type="checkbox"/> NO FEES REQUIRED		<input type="checkbox"/> LICENSING ACTION REQUIRED IF KNOWN	
<input type="checkbox"/> OTHER (Specify)		<input type="checkbox"/> YES <input type="checkbox"/> NO	

TOTAL NUMBER OF REVIEW HOURS	NOTES <i>The source may already be approved as CA598-5-114-5 - check to see if it will fit</i>
NUMBER OF DEFICIENCY LETTERS	
NUMBER OF DEFICIENCY CALLS	

FOR BILLING PURPOSES ONLY

<input type="checkbox"/> NAME CHANGE	<input type="checkbox"/> ADDRESS CHANGE	<input type="checkbox"/> NEW REGISTRATION - ADD TO BILLING	<input type="checkbox"/> PRODUCT INACTIVE - REMOVE FROM BILLING
--------------------------------------	-----------------------------------------	------------------------------------------------------------	-----------------------------------------------------------------

FOR FEE USE ONLY

TYPE OF FEE	FEE CATEGORY <input type="checkbox"/> 9A <input type="checkbox"/> 9B <input type="checkbox"/> 9C <input checked="" type="checkbox"/> 9D		
AMOUNT RECEIVED	CHECK NUMBER	MATANN UPDATED AS REQUIRED	
DATE OF CHECK	LOG <i>Nov. 95 / SSO</i>	MATSYS UPDATED AS REQUIRED	
APPROVED BY	DATE RETURN <i>11/2/95</i>	DATE	

COMMENTS



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

April 10, 1996

John T. Jensen
U.S. Department of Agriculture
4700 River Road, Unit 91
Riverdale, MD 20737

Dear Mr. Jensen:

This letter is in response to your application dated November 2, 1995, requesting safety evaluation of the Model 521 Husman irradiator with Amersham source capsules X.2157 (J.L. Shepherd Model 6810). We are in the process of evaluating your request. However, to continue our evaluation, the following information is necessary:

1. Please provide clear drawings concerning the Model 521 Husman irradiators and the compatibility of the requested sources with the irradiator(s). In particular, provide clearer drawings that indicate the proposed source mounting and containment within the irradiator(s) and specifications and drawings of the previously approved sources and their mounting and containment in the irradiator(s). Please also specify the materials of construction of the proposed spacers.
2. You indicated that the source capsules are supplied by J.L. Shepherd as the Model 6810 source capsules. Registration certificate CA-598-S-119-S for these sources indicates they are to be used under limiting conditions of use as specified in that certificate (temperature range 10-50° C, non-corrosive atmosphere; and limited vibration). Additionally, the certificate indicates sources are only for use in J.L. Shepherd's source holders or devices. Please demonstrate that these source capsules will be used within the limiting conditions of use specified in that document.

Lastly, we will need to issue a registration certificate for the use of the Models 520 and 521 Husman irradiators by the U.S. Department of Agriculture. This certificate will be issued as a "custom" review for your particular use. In order to perform this review, we will need complete construction and use data for these irradiators. Please provide this information by separate cover so that we may perform this review. This action will be processed separately from you current amendment request.

960412003T 2pp.

J. Jansen

-3-

Please provide the requested information as soon as possible. If you have any questions, please contact me at (301) 415-7273.

Sincerely,

Original Signed By:
Steven L. Baggett

Steven L. Baggett, Section Chief
Sealed Source Safety Section
Medical, Academic, and Commercial
Use Safety Branch
Division of Industrial and
Medical Nuclear Safety
Office of Nuclear Material Safety
and Safeguards

Distribution:

SSSS r/f SSD-95-114
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NE01

F. Costello, RI

DOCUMENT NAME: H:\USDA.SLB

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OFFICE	IMAB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NAME	S. Baggett							
DATE	04/10/96							

OFFICIAL RECORD COPY



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 18406-1415
FAX NO. (610) 337-5393

FACSIMILE TRANSMITTAL

DATE: 3/18/96

MESSAGE TO:

John Sabinski

TELECOPY NUMBER:

(301) 415-5309

NUMBER OF PAGES:

3
(Including this cover sheet)

MESSAGE FROM:

Kathy R. De
U.S.N.R.C. Region I, King of Prussia, PA

TRANSMITTED BY:

DATE & TIME:

VERIFIED BY:

610-337-52753269 (copy)*and*
11/95