



Jane Dee Hull
Governor

Aubrey V. Godwin
Director



4814 South 40th Street

Phoenix, Arizona 85040-2940

(602) 255-4845
Fax (602) 437-0705

October 10, 2002

Ms Traci Kime
11545 Rockville Pike
Mail Stop T8F5
Rockville, MD 20852

Dear Ms Kime,

Enclosed you will find a corrected version of Sealed Source and Device No. AZ 244S102 B (which supersedes AZ 0806-S-118-G and AZ 244D102S) for a Radioluminous Calibration Light Source.

We would appreciate your review and comment.

Sincerely,

A handwritten signature in black ink, appearing to read "Aubrey V. Godwin".

Aubrey V. Godwin
Director

WAW:AVG:lp

CC: Dr. Melvin C. Young

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO: AZ244S102B DATE: October 10, 2002
(Supersedes AZ-0806-S-118-G and AZ 244D102S)

PAGE 1 OF 5

DEVICE TYPE: Radioluminous Calibration Light Source

MODEL: 40111

MANUFACTURER/DISTRIBUTOR: TLS Systems, Inc.
PO Box 42884
Tucson, AZ 85733-2884

Contact: Marshall W. McCoy
President
(520) 745-5505

Melvin C. Young
Radiation Safety Officer
(520) 745-5505
FAX: (520) 745-5450

SOURCE MANUFACTURER: RC TRITEC AC
(Formerly Radium-Chemie)
Speicherstrasse
CH-9053 Teufen
Switzerland

Albert Zeller, Director

Telephone: 011 41 071 33 14 15
FAX: 011 41 071 33 46 43

ISOTOPE: Carbon - 14

Maximum Activity: 300/ μ Ci

LEAK TEST FREQUENCY:

Sources $> 100 \mu$ Ci: 3 years, specific license required
Sources $< 100 \mu$ Ci: General License

PRINCIPAL USE:

Specific License, General License
Reference is made to 10CFR 31.5

CUSTOM SOURCE:

N/A

CUSTOMER USER:

N/A

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO: AZ244S102B DATE: October 10, 2002
(Supersedes AZ-0806-S-118-G and AZ 244D102S)

PAGE 2 OF 5

DEVICE TYPE: Radioluminous Calibration Light Source

SOURCE DESCRIPTION:

Source: The source consists of barium carbonate mixed with metal sulfide. This is manufactured by mixing binder, typically potassium silicate, with appropriate amounts of phosphor and labelled carbonate. Slurry is dispensed into source housing and baked to fuse the slurry into solid. After cooling, the window is glued in place, and the epoxy adhesive is cured. The "Devcon two-ton" epoxy used is the same material used in assembling the source housing in the previously registered 40108-1 and -2 sources.

Source Housing: Precision machined anodized aluminum.

Source Window: Ce stabilized borosilicate glass glued into a recess in the housing with an epoxy adhesive.

SOURCE DRAWING: See Attachment 1 (Drawing 40111)
See Attachment 2 (Drawing 40108A)

DETAILS OF CONSTRUCTION: See Attachments 1 and 2

LABELING: A pressure-sensitive adhesive label with black text is affixed to the back of the source. Printed on the label is 'AAC' and the serial number. The source is distributed in a plastic bag bearing the same notation as the source label, plus the source activity.

CONDITIONS OF USE: Field calibration of photometric equipment.

TESTING OF PROTOTYPES: Exemption from testing under ANSI N540 is requested based on this test being performance and not safety based and the inability to perform the Level 1 discoloration test due to the unavailability of a 'Weatherometer' and the U.S.F.D.A.'s prohibition of the sale or use of the S-4 sunlamp several years ago.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO: AZ244S102B DATE: October 10, 2002
(Supersedes AZ-0806-S-118-G and AZ 244D102S)

PAGE 3 OF 5

DEVICE TYPE: Radioluminous Calibration Light Source

TESTING OF PROTOTYPES (CONT.)

Due to the unavailability of 40111 test data and the similarity of the 40111 to the 40108A, test data for the 40108A sources are referenced. Source integrity of the 40108A sources, as stated in the Application For Safety Evaluation and Registration dated October 16, 1992 and revised February 24, 1993, was maintained following exposure to the following:

1. Maximum temperature: 175° F. (80° C.) for 1 hour
2. Minimum temperature: -180° F. (-78° C.) for 1 hour
3. Drop tests onto steel plate
 - a. 20 times at 1 meter
 - b. 2 times at 2 meters

The above temperature extremes are consistent with the nonoperating temperature range specified by the primary user. During normal use, each source will be sealed in an electronic enclosure which is maintained at $72 \pm 5^\circ$ F. This containment ensures minimal exposure to harsh environments.

The source met all additional test requirements for Test Level 1 for self luminous in an sources.

RADIATION LEVELS:

Radiation level of the 40108A sources, was determined to be $\leq 10 \mu$ Roentgens/hr at contact with a Victoreen M/450 P Ion Chamber (Distance to effective center of chamber ~ 8 cm).

QUALITY CONTROL:

The sources were purchased from the manufacturer as sealed sources. Before shipment to the distributor, American Atomics Corporation (AAC), the sources were leak tested and measured for luminosity within a specific range. Upon receipt by AAC, each source was visually inspected for seal integrity: minimum of 80% coverage of the epoxy seal area was required. All sources were then leak tested. After the serialized label was affixed to the back, each source was measured for conformance to physical dimensions and luminous specifications. The information is based upon personal knowledge of Marshall W. McCoy, a Manufacturing Engineer at AAC at the time this work was being performed.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO: AZ244S102B DATE: October 10, 2002
(Supersedes AZ-0806-S-118-G and AZ 244D102S)

PAGE 4 OF 5

DEVICE TYPE: Radioluminous Calibration Light Source

DOCUMENTATION ACCOMPANYING THE SEALED SOURCE:

Current leak test if source $\geq 100 \mu\text{Ci}$.

LEAK TESTING DURING USE: The 40111 sources with an activity $\leq 100 \mu\text{Ci}$ are exempt from periodic leak testing and may be distributed under a general license. Sources of $> 100 \mu\text{Ci}$ may be distributed under specific license. It is proposed that these sources be leak tested at three year intervals because of the integrity of the source.

LIMITATIONS AND/OR OTHER CONSIDERATIONS OF USE:

Except for reference light sources containing small quantities of radiocarbon ($\leq 100 \mu\text{Ci}$), a specific license issued by the USNRC or Agreement State Agency is required to obtain and possess these light sources.

SAFETY ANALYSIS SUMMARY:

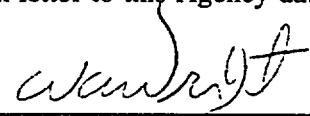
This reference light source meets the requirements of the American National Standard N540; Classification of Radioactive Self-Luminous Light Sources, dated January 1976, classification C1PC.

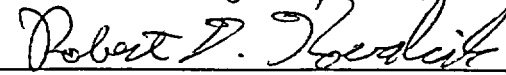
REFERENCES:

This Certificate of Registration is based on information and test data contained in the following supporting documents which are hereby incorporated by reference and made a part of these registry documents.

ARRA letter to USNRC dated March 29, 1995.

US Nuclear Regulatory Commission letter to this Agency dated June 16, 1995.

DATE: 10/11/02 REVIEWED BY: 
WILLIAM A. WRIGHT, BSNE, MSRH, CPM

DATE: 11 OCT 02 REVIEWED BY: 
ROBERT D. KOVALCIK, PE, CHP

DATE: 10/11/2002 REVIEWED BY: 
AUBREY V. GODWIN, MS, CHP

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO: AZ244S102B DATE: October 10, 2002
(Supersedes AZ-0806-S-118-G and AZ 244D102S)

PAGE 5 OF 5

DEVICE TYPE: Radioluminous Calibration Light Source

ISSUING AGENCY: Arizona Radiation Regulatory Agency
4818 South 40th Street
Phoenix, Arizona 85040
Telephone: (602) 255-4845
Facsimile: (602) 437-0705



File Symington
Governor



Aubrey V. Godwin
Director

4814 South 40 Street

Phoenix, Arizona 85040

(602) 255-4845
FAX (602) 437-0705

March 29, 1995

Mr. Richard L. Bangart, Director
Office of State Programs
U.S. Nuclear Regulatory Commission
Rockville, Maryland 20852

Dear Mr. Bangart:

We request your office's guidance on two issues regarding SSD Certificate AZ244D1015^S (Enclosure 1) issued by Arizona on March 5, 1993, to a Model 40108A Source manufactured by TLS Systems, Inc.

Issue I

There had been a question as to the discoloration test not being performed in Source Model 40108A. Request that USNRC State Agreements Program issue an exemption from the ANSI N540 discoloration test. The request is based in the inability to perform Level 1 discoloration test due to the unavailability of a "Weatherometer" and the U.S.F.D.A.'s prohibition of the sale or use of the S-4 Sunlamp a number of years ago.

Issue II

Is the TLS Model 40108A Source currently registered the same as the American Atomics Corp. (AAC) Model 40111 Source?

Discussion

It cannot be determined by examination of this Agency's records or the USNRC's review of it's records ^h whether a registration certificate was ever issued on the AAC 40111 Source. Distribution of the 40111 Source was authorized under then, the Arizona Atomic Energy Commission (AAEC), now the Arizona Radiation Regulatory Agency (ARRA) License No. 10-15, Amendment 3, dated February 13, 1973.

The AAC Model 40111 and the TLS Systems, Inc. Model 40108A Sources, based on drawings (Enclosures 2 and 3) are for all practical purposes identical, the latter model having current registration by this Agency. A suggestion would be to amend the Model 40108A registration to include the Model 40111.

Your expeditious response to these questions would be appreciated.

Sincerely,

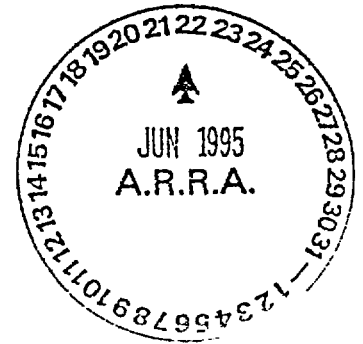
Aubrey V. Godwin
Director

AVG:WAW:lh
enclosures



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

June 16, 1995



Mr. Aubrey V. Godwin, Director
Arizona Radiation Regulatory Agency
4814 South 40 Street
Phoenix, AZ 85040

Dear Mr. Godwin:

This is in response to your March 29, 1995, letter requesting technical guidance on two issues regarding an Arizona sealed source and device (SS&D) certificate.

Enclosed are comments and guidance provided by the technical staff.

If you have any questions, please contact me or Lloyd Bolling at (301)415-2327.

Sincerely,

Richard L. Bangart
Richard L. Bangart, Director
Office of State Program

Enclosure:
As stated



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

June 13, 1995

95 JUN 14 AM 8:27

NSP

MEMORANDUM TO: Richard L. Bangart, Director
Office of State Programs
FROM: Donald A. Cool, Director
Division of Industrial, Medical
and Nuclear Safety, NMSS
SUBJECT: TECHNICAL ASSISTANCE REQUEST FROM THE STATE OF ARIZONA

We have reviewed the Technical Assistance Request from Mr. Aubrey V. Godwin of the State of Arizona (item 3. of your memorandum dated April 11, 1995). We are providing the following for your consideration when developing a response to Mr. Godwin: (S-155)

ISSUE I: "Request the USNRC State Agreements Program issue an exemption from the ANSI N540 discoloration test"

We do not believe the NRC can grant an exemption from requirements imposed by a State regulatory body on the State's licensees.

Given the inability to obtain the specified equipment for the discoloration test contained in ANSI N540 (due to an FDA ban on this equipment), that this test is performance and not safety based, and that the test would not provide additional information concerning the radiological safety of the source, we agree that it would not be appropriate to require this test as a condition of registration or licensing for use of the source. Safety reviews should be limited to an assessment to ensure the safety of the intended user and the public when the product is subjected to normal and likely abnormal conditions of use. Typically, these reviews would not be concerned with the product's ability to operate as intended (in this case, to provide a known reference light source) unless improper operation would cause a radiological safety hazard. It does not seem that discoloration of the light source would cause a radiological safety hazard.

ISSUE II: "Is the TLS Model 40108A source currently registered, the same as the American Atomics Corporation (AAC) Model 40111 Source?"

Although the models seem to be very similar, the information provided by the State indicates the AAC Model 40111 is not identical to the TLS Model 40108A. We have been unable to obtain additional information from our files that would indicate that these sources are identical in design and construction.

Several additional issues concerning the AAC Model 40111 and TLS Model 40108A sources were brought to our attention by Mr. Melvin C. Young of TLS Systems Inc., during our investigation of the above issues. Mr. Young contacted our office and faxed a copy of the attached letter (Attachment 1), dated March 9, 1995, addressed to Mr. William A. Wright of the Arizona Radiation Regulatory Agency (ARRA). We are providing comments on the issues raised in this letter as additional background for developing a response to Mr. Godwin's request. Some of the issues have been paraphrased:

1. Was the AAC Model 40111 source ever registered?

We have searched available archived NRC and Atomic Energy Commission (AEC) records and have been unable to determine if a registration certificate for the AAC Model 40111 source ever existed. It is our understanding that all licensing information for AAC was transferred to the State of Arizona at the time it became an Agreement State.

2. Was the AAC Model 40111 source required to be registered at the time distribution for the source was authorized (approximately 1973)?

A form of review for the adequacy of sealed sources and devices for licensing has been performed since the early 1960's. Prior to the development of a formal registry system in the 1980's, records of these reviews were in the form of a catalogue type document of AEC approved sources and devices. In some cases, the reviewer would create a "catalogue" sheet as a record of the approval. However, in other cases the product was only listed on the license with the conditions of use. Registration was not required by regulation at that time, and no formal guidelines existed for performing the review.

3. When the requirements for safety evaluations and registration were formalized, was there a requirement that sources being distributed, or that had been previously distributed, be registered? Is there a provision for "grandfathering" sources distributed prior to the new requirements?

In 1987, 10 CFR was amended to include Sections 30.32(g) and 32.210. These sections formalized the registration process and defined the information necessary to perform a safety evaluation. Prior to this time, formal registration was not required. After the implementation date of these sections, products that had no formal registration certificate were "grandfathered" for use according to the conditions stated on the user's and/or distributor's license. Distributors were requested at the time of license renewal or amendment to submit additional information, if needed, concerning their product(s) in order for the staff to create a registration certificate. NRC staff attempted to create registration certificates for those distributors who were no longer in business, with the information available, as soon as practical. However, a registration certificate may not have been issued in all cases; for example (1) the distributor was no longer in the

business of distributing the product(s) and no products remained in use, (2) distribution was extremely limited (1 or 2 licensees), or (3) there was no information available to create a certificate.

4. Is there an exemption from registration for certain low activity, low energy beta sources such as the AAC Model 40111.

NRC Policy and Guidance Directive (PGD) 84-22 indicates that license reviewers may license for use calibration and reference sources without a formal review and safety evaluation if they do not exceed "for beta and/or gamma emitting material - 100 microcuries or ten times the quantity specified in Section 30.71, Schedule B, 10 CFR 30, whichever is greater." For Carbon-14 the greater value would be 1000 microcuries. The user's license would have to indicate the isotope and maximum activity of each source and contain a condition that the source may only be used for calibration or reference. A copy of PGD 84-22 is provided for, background information, as Attachment 2.

5. A final question was raised by Mr. Young as to whether the AAC Model 40111 sources could be re-labeled as the TLS Model 40108A sources.

The AAC Model 40111 sources should not be re-labeled as the TLS Model 40108A sources as these sources were manufactured by AAC and not TLS Systems, Inc. Licensing of these sources is based on the approval issued to AAC. Since there is currently no information that would indicate that these model sources are identical in design and construction, re-labeling the sources would invalidate that approval.

In order to clarify these issues related to the models 40108A and 40111 sources, and to satisfy the requirement of the Air Force to have available a licensing document (such as a registration certificate) in order to use a product, we would recommend the following course of action for the State:

The ARRA amend an existing inactive source certificate issued to AAC to add the model 40111 source. This would be based on the information that ARRA currently has available, and would provide a basis for licensing the source for use. Also, this would be a lesser administrative burden than issuing a separate certificate for the 40111 source. When choosing a certificate to amend, the State should consider only certificates for source models similar in design, construction, and use to the model 40111 source (e.g., AZ-0806-S-118-G, for the 40108 I-lite source). The amended certificate should contain a listing of all known limitations of use for the model 40111 source (such as environmental use conditions or types of uses). Information provided by the State, TLS Systems, Inc., and Northrop-Grumman Corporation (an Air Force contractor who installs the sources) indicates the AAC model 40111 source was approved for uses similar to the currently registered TLS model 40108A I-Lite source. Therefore, wording in the current certificate for the model 40108A I-Lite source could be used as a basis for wording in the model 40111 source certificate.

R. Bangart

-4-

I hope this clarifies the issues concerning the AAC Model 40111 source and the TLS Model 40108A source. If you have any additional questions or concerns, please contact Mr. Douglas A. Broaddus of my staff at (301) 415-5847.

Attachments:

1. Letter to William Wright from Melvin Young dated 3/9/95
2. Policy and Guidance Directive 84-22



TLS SYSTEMS, INC.

P. O. Box 42884
Tucson, AZ 85733

Tel/Fax: (602) 745-5505

TRANSMITTAL BY FACSIMILE TO (602) 437-0705

606
602-626-5777

March 9, 1995

Post-It™ brand fax transmittal memo 7571		# of pages	2
From	John Baggett	To	Mal Young
On	NRC	On	TLS Systems
Dept.		Phone #	
Fax #	301-415-5369	Fax #	

Mr. William A. Wright
Program Manager
Radioactive Materials Program
Arizona Radiation Regulatory Agency
4814 South 40th Street
Phoenix, AZ 85040

Re: Resolution of Registration Status of American Atomics Corporation Model 40111 Source

Dear Mr. Wright:

Reference is made to:

1. Letter to Mr. Douglas Broaddus, U.S. Nuclear Regulatory Corporation (NRC), dated February 17, 1995.
2. Letter to Mr. William A. Wright, Arizona Radiation Regulatory Agency (ARRA), subject same as above, dated February 22, 1995.

As you requested, I contacted the USAF, based upon information provided earlier by Mr. Broaddus, to discuss their specific requirements regarding the registration status of American Atomics Corporation (AAC) Model 40111 Source. In my conversation earlier today with MAJ Richard Speer of Brooks AFB, TX, the following points were discussed:

1. USAF requirements are either: verification of 40111 source registration or documentation which will clarify why registration was never issued and/or required.
2. Information from both ARRA and the NRC indicates that the 40111 source was never registered by either organization.
3. I reviewed the 'possible' options outlined by Mr. Broaddus in my conversations with him and related to you in my letter referenced above.
4. Our search of your Agency's records revealed AAC license amendments issued in 1973 and renewed in 1977 authorizing distribution of the 40111 sources.
5. I told MAJ Speer that, in my opinion, some of the 'possible' options might not be acceptable to either ARRA or the NRC once the subject had been reviewed more closely.

Memorandum to Mr. William A. Wright, ARRA, dated March 9, 1995

6. The TLS Systems Model 40108A Source, which is currently registered, was developed from measurements taken from an AAC Model 40111 Source.
7. Given the above points, MAJ Speer stated that the USAF would request ARRA verification of the following points:
 - a. Formal registration has apparently never been issued on the 40111 source.
 - b. Distribution of the 40111 was authorized under ARRA License 10-15. (Reference Amendment #13, dated February 13, 1973)
 - c. During the 1973-78 period, source registration requirements were not as strict as they are now and that registration was not universally required for distribution of all sources.
 - d. Once registration requirements were strengthened, there was no requirement to either register sources which were then being distributed or had previously been distributed without registration, in effect 'grandfathering' the sources from registration.
 - e. Current NRC guidance authorizes exemption from registration for low activity, low energy beta sources such as the 40111.
 - f. The AAC Model 40111 and the TLS Systems 40108A sources, based upon drawings on file with ARRA, are for all practical purposes identical, the latter model having current registration from ARRA.

As stated previously, Northrop-Grumman is intensely interested in getting this matter resolved at the earliest possible date. Your bringing this matter to final resolution at your earliest convenience will be greatly appreciated.

Please note that our area code changes to 520 effective March 15, 1995. If any additional information is needed, please let me know.

Sincerely,

Melvin C. Young

Melvin C. Young, Ph. D.
Radiation Safety Officer

pc: Mr. Douglas Broadus	USNRC	(301) 415-5847 Voice	(301) 415-5369 FAX
Mr. Robert Yeagley	Northrop-Grumman	(213) 600-3392 Voice	(213) 600-5188 FAX
MAJ Richard Speer	USAF	(210) 536-3331 Voice	(210) 536-4382 FAX

As is usual

DEC 6 1984

MEMORANDUM FOR: Regional Administrators

Branch Chiefs
Division of Fuel Cycle and Material Safety

FROM: Richard E. Cunningham, Director
Division of Fuel Cycle and Material Safety

SUBJECT: POLICY AND GUIDANCE DIRECTIVE FC 84-22;
WHAT SOURCE AND DEVICE DESIGNS REQUIRE AN EVALUATION

There have been questions raised concerning the need for review of certain source and/or device designs by the Material Certification and Procedures Branch (FCMC). The questions specifically referred to: (1) calibration and reference standards (2) sources or devices used in research and development, (3) sources or devices used by broad licensees, and (4) custom sources or devices. This directive provides guidance regarding evaluation for these types of sources and devices.

1. Calibration and reference sources may be licensed without review by FCMC if the sources do not exceed the following:
 - o For beta-and/or gamma emitting material - 100 microcuries or ten times the quantity specified in Section 30.71, Schedule B, 10 CFR 30, whichever is greater.
 - o For alpha emitting material - 10 microcuries.

The above values were chosen because they represent minimal hazard to public health and safety. To license these sources, identify the isotope in Item 6 of the license, use the statement "calibration or reference sources" in Item 7, and state the maximum quantity for each source in Item 8. Both possession and distribution may be authorized.

2. Source or devices containing sources that are intended only for research and development use need not be sent to FCMC if the applicant is qualified by training and experience to use and handle the requested quantity of material in unsealed form (for sources) or in unshielded form (for registered sources). You may license the source or device without evaluation by FCMC.

3. Source or devices containing sources to be used by a broad licensee need not be sent to the FCMC if the licensing reviewer has made a determination that the licensee is qualified by sufficient training and experience and has sufficient facilities and equipment to safely use and handle the requested quantity of radioactive material in unsealed form (for sources) or unshielded form (for registered sources). In most cases the reviewer need only check if the requested source activity is within the licensee's possession limit.
4. Sources or devices containing sources built to the unique specifications of a given user (custom) need not be sent to the Material Certification and Procedures Branch for evaluation if: (a) they contain less than 200 millicuries of radioactive material or less than 20 curies of tritium, and (b) the licensing reviewer has made a determination that the applicant is qualified by training and experience and has adequate facilities and equipment to safely use and handle the requested quantity of radioactive material in unsealed form. Thus, the applicant would not have to reply on the intrinsic safety of the source or device to demonstrate compliance with 10 CFR 30.33. Custom source and devices which contain an activity greater than that listed above should be submitted to FCMC for evaluation.

To license these custom source and/or devices, identify the isotope in Item 6 of the license, use the statement "custom source" or "sealed source" including drawing or model number, if possible, in Item 7 and state the maximum quantity of radionuclide per source or device in Item 8. In Item 9 (authorized use) describe, as clearly as possible, the actual use of the custom source or device. Examples: "For use in a Model A analyzer custom built for the licensee by ABC Company in Notown" or "Custom source for use in XYZ Model 100 gauge."

Several questions have arisen regarding whether identical "off-the-shelf" devices with limited distribution can be reviewed as custom devices. This has been a particular problem with imported devices. We will evaluate the first device as a custom device if distribution is anticipated to be limited. FCMC will consider additional identical devices on a case-by-case basis. In general, we will strongly encourage registration of off-the-shelf devices to avoid repetitive custom reviews.

Licensing Reviewer Note:

The NRC normally requires that all sources and devices containing sources be properly evaluated, be found acceptable for licensing purposes, and be registered prior to routine distribution to American customers who would be specifically licensed. The exceptions are discussed in

DEC 6 1984

this memorandum. Once registered, the license applicant need only identify a specific device and radioactive source by manufacturer and model number when making application for a specific license for possession and use of the device.

Additionally, the NRC requires, as a condition precedent to obtaining registration, that a foreign applicant establish an address in the United States at which will be kept all records required by Commission regulations and at which the registrant specifically authorizes the Commission to serve upon the registrant all papers and legal documents in connection with the Commission's regulatory program.

An applicant must describe how any device is to be serviced. It is preferable that a licensed distributor be established in the United States who is responsible for providing service and maintenance of the device. However, the license applicant may propose an equivalent alternative as to how service is to be performed on the device.

The authorization to use sources or sources contained within devices, which have not been evaluated by FCNC as described in Items 2, 3 and 4 above, apply to use by the applicant only. Therefore, the applicant should not be authorized to distribute the sources or sources contained within devices to other licensees.

All cases referred to FCNC should follow the procedures in Policy and Guidance Directive FC-84-5 dated May 16, 1984.

If you have any questions, please contact Steven Baggett at FTS 427-9005.

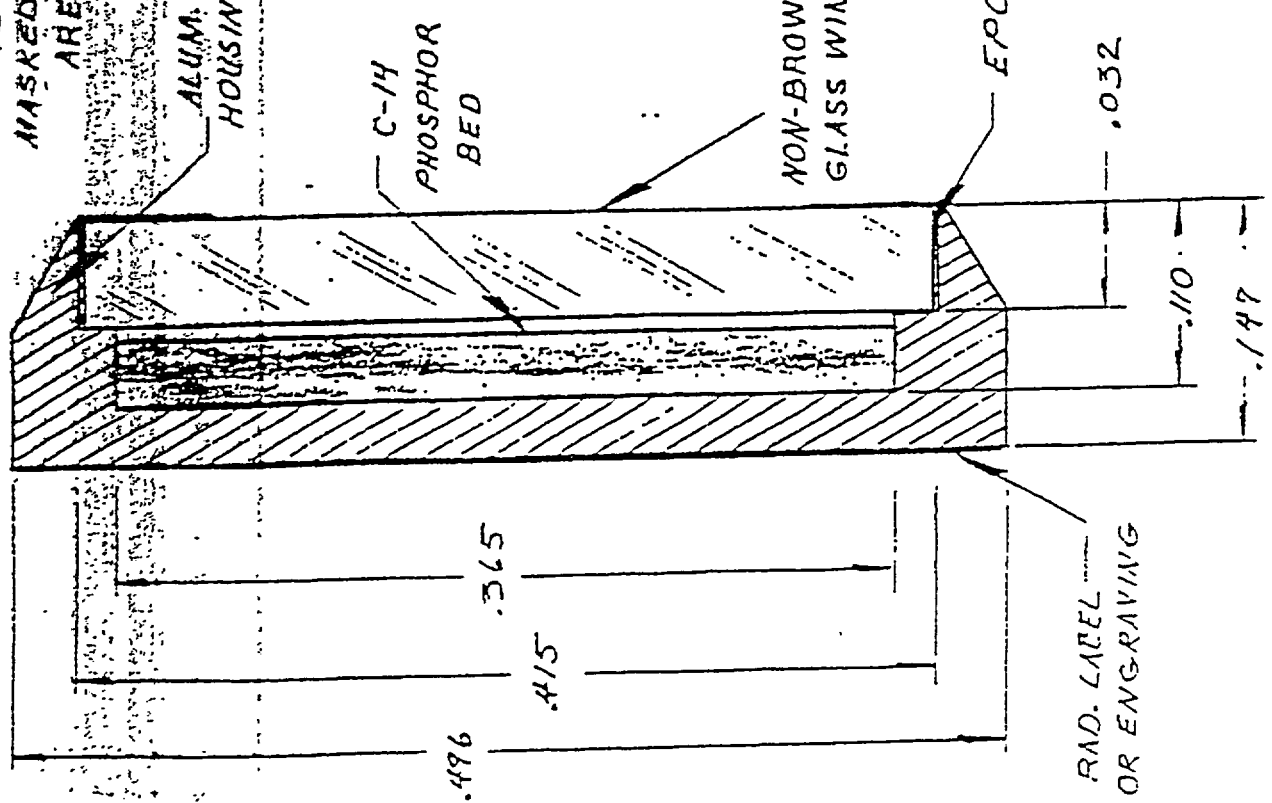
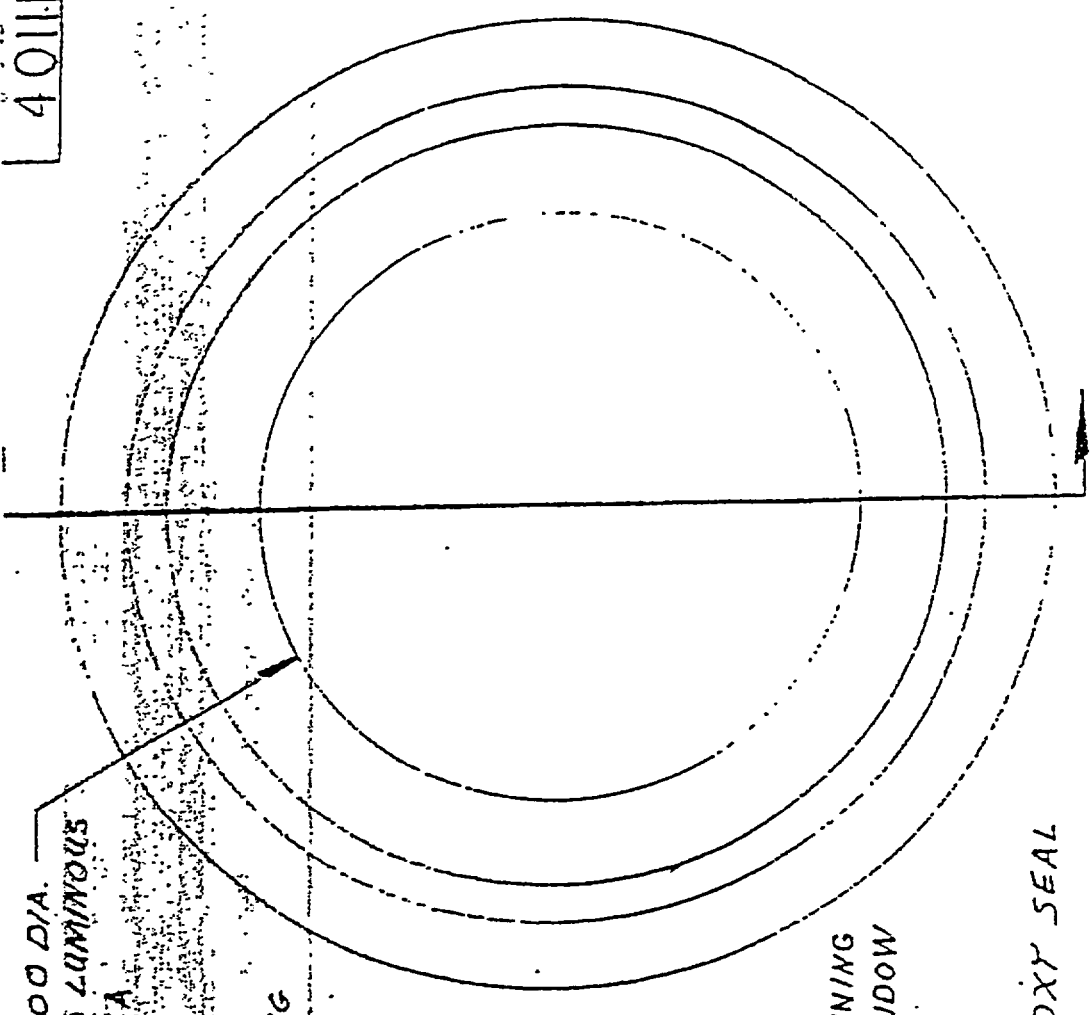
Original Signed by

D. R. Chepell

Richard E. Cunningham, Director
Division of Fuel Cycle and
Material Safety

40111

AA3-44



QTY	ITEM	PART NO.	PART NAME	MATERIAL	FINISH
			AMERICAN ATOMICS CORP. TUCSON, ARIZONA		
			CALIBRATION I-LITE, C-14		
			DATE	SCALE	
			1-8-73	10/1	
			DATE	DRAWING NO	
			1-9-73	40111	
			DATE		
			1-10-73		
			APPROVED		
			H.H.B.		
			DRAWN BY		
			R.C. CLAYTON		
			CHECK'D		
			H.H.B.		

REV	DATE	BY	REVISIONS
A			
B			
C			
D			
E			

TOLERANCES	
.XXX1 .003	ANGLES 0°.30'
.XX1 .00	HOLE P.P.H
X1 .1	AND .0007

QTY	NEXT ASSY

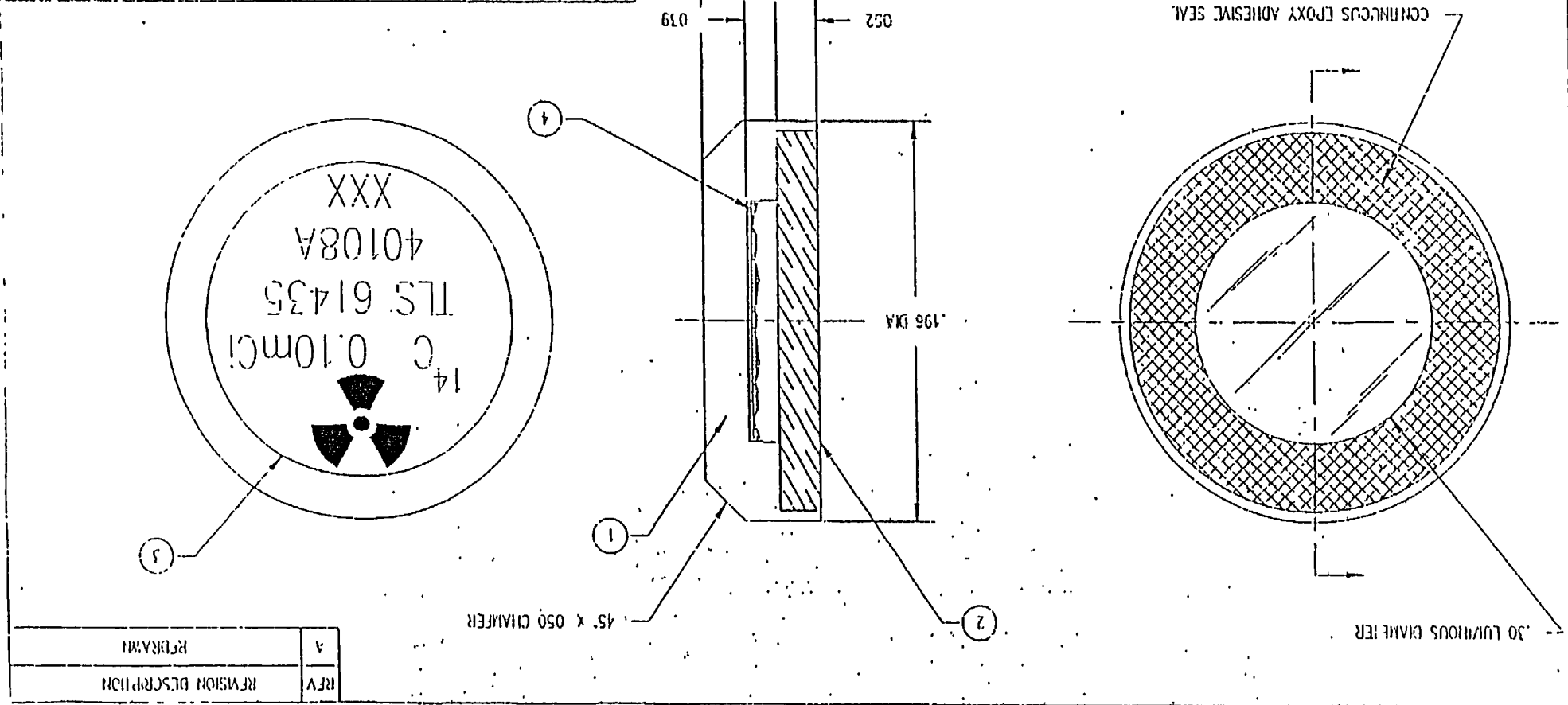
ATTACHMENT 1

HEXT ASM	TOLERANCES	ANGULAR	XXX & CO. F O S	DATE	APPROVED
				3/12/89	MARSH
				DATE	DATE
				SCALE	1
				DRAWING NUMBER	40108A

REV	DATE	BY
A	5-17-92	MM

REVISIONS

QTY	ITEM	PART NO	PART NAME	MATERIAL	FINISH
1	1	--	BODY	6061-T6 ALUMINUM	BLK ANGLE
1	2	--	WINDOW	CERAM STACKED GLASS	POISHED
1	3	60614	LABEL	002 THICK ALUMINUM FOL	PAINTED
1	4	--	P-BED	BAO ₃ AND PHOSPHOR	



REV	A
REVISION DESCRIPTION	PROGRAM

45 X .050 CHAMFER

CONTINUOUS EPOXY ADHESIVE SEAL

.30 LUMINOUS DIAMETER