



GARY E. JOHNSON
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous & Radioactive Materials Bureau
2044 Galisteo
P.O. Box 26110
Santa Fe, New Mexico 87502
(505) 827-1557
Fax (505) 827-1544

RHB
PHL
SCP
CHM
S. Bragitt
W/ends.
(evaluations)



MARK E. WEIDLER
SECRETARY

EDGAR T. THORNTON, III
DEPUTY SECRETARY

January 21, 1998

Richard L. Bangart, Director
Office of State Programs
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Mr. Bangart:

As per your recommendation in your letter to Mr. Benito Garcia dated January 9, 1997 (sic), public notice has been given in four regional newspapers in the state regarding New Mexico's decision to relinquish its authority to regulate sealed source and device evaluations. A copy of this public notice is enclosed.

Also, as per your request, I am enclosing background files relevant to evaluations issued by New Mexico for sealed sources and devices.

Should you have any questions please call me at (505)827-1862.

Sincerely,

William M. Floyd

William M. Floyd
Program Manager

cc: Benito J. Garcia, Chief
Hazardous and Radioactive Materials Bureau

040081

9802040407 980121
PDR STPRG ESGNM
PDR



08

NRC FILE CENTER COPY

SP-AG-19

PUBLIC NOTICE

REASSUMPTION OF U. S. NRC REGULATORY AUTHORITY FOR SEALED SOURCE AND DEVICE EVALUATIONS

On January 1, 1998, the Nuclear Regulatory Commission reassumed regulatory authority for sealed source and device evaluation approvals in the Agreement State of New Mexico in response to a request from the Governor of the State of New Mexico to relinquish this authority. As the basis for this request, the Governor of New Mexico noted there are two manufacturers in the State, and there have been no sealed source and device evaluations conducted since 1988. Governor Johnson indicated that it would not be cost effective to fund and maintain staff to conduct sealed source and device evaluations. The Governor also noted in this August 22, 1997, request to the Nuclear Regulatory Commission that the State of New Mexico will retain authority to regulate the manufacture and use of sealed sources and devices in accordance with Section 274b of the Agreement with the NRC.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE

NO. NM-780-S-107-5

Date: April 1, 1991

Page 1 of 4

SOURCE TYPE: Alpha Calibration Sources

MODEL: TS-235-alpha

MANUFACTURER/DISTRIBUTOR: The Source, Inc.
2810 Siler Lane
Santa Fe, NM 87501

ISOTOPE: 235/234 U

MAXIMUM ACTIVITY: 5 microcurie

LFAK TEST FREQUENCY: When the surface of the source has been damaged or in accordance with US NRC OR Agreement state regulations.

PRINCIPAL USE: Calibration and check sources with activity less than 300Ci(T)

CUSTOM DEVICE: No

CUSTOM USER: None.



Radiation standards and check sources
2810 Silver Lane, Santa Fe, NM 87501
(505)473-9538 FAX(505)473-5805

To: BILL FLOYD

Fax Number: 827-1544

From: MIKE ORTIZ

Date: 5-16-96 Pages: 9

Message: REGISTRY OF U-234-235 ELECTRO PLATED SOURCE.
Will FAX COPY TO STATE OF TENNESSEE MICHAEL PAGE
(615) 532-0364 (FAX) 615-532-7938. AS per our phone
conversation.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE

NO. NM-780-S-107-S

Date: April 1, 1991
Page 2 of 4

DESCRIPTION:

A. The type-235-alpha calibration and check sources are electroplated on stainless steel with activities up to 100 nanocurie or nickel with activities > 100 nanocurie up to 5.0 microcurie. The material is heat treated after electroplating. This sealed source is used to check calibration of alpha

stainless steel with activities up to 100 nanocurie or nickel with activities >100 nanocurie up to 5.0 microcurie. The material is heat treated after electroplating. This sealed source is used to check calibration of alpha radiation detection instruments.

B. Source dimensions are varying depending on the size of source ordered by the customer. The dimensions are shown in the generic diagram for each of the various sizes.

C. The sealed source is <30uCi and does not fall under ANSI N542 Table 4 Performance Requirements or ISO-2919 Annex C Performance Requirements because the source is less than 30uCi. The source meets or exceeds ANSI N542 APPENDIX A LEAK TEST. All sources are leak tested prior to transfer. A leak test certificate is issued with the sources.

LABELING

The source is permanently marked as shown in attached diagram. All certified sources are placed in a wooden box with labeling indicating Caution Radioactive Material, Isotope, amount of activity and date of activity. The outside of the wooden box has a label of Nuclide and Caution Radioactive Material. Check sources are not placed in a wooden box, but are in a bag or plastic box with label indicating Caution Radioactive Material, Isotope and nominal activity. "The receipt, possession, use and transfer of this source, Model _____, Serial No. _____, are subject to a general license and the regulations of the United States Nuclear Regulatory Commission or of a State with which the Commission has entered into an agreement for the exercise of regulatory authority. Do not remove this label."

CAUTION-RADIOACTIVE MATERIAL-THIS SOURCE CONTAINS Uranium 235. DO NOT TOUCH RADIOACTIVE PORTION OF THIS SOURCE.

DIAGRAM see attached drawing.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE

NO. NM-780-S-107-S

Date: April 1, 1991
Page 3 of 4

CONDITION OF NORMAL USE:

The sealed source is intended for use in the calibration check of alpha detection instrumentation. The source should be handled with forceps to avoid finger prints or scratching the radioactive surface of the source.

PROTOTYPE TESTING:

Conforms to ANSI N542 appendix A leak test.

EXTERNAL RADIATION:

The maximum external radiation levels in mr/hr
at 12 INCHES $<0.5\text{mr/hr}$

QUALITY ASSURANCE AND CONTROL:

The manufacture maintains an acceptable quality control/assurance program for manufacturing, procurement and final acceptance of each sealed source based on Mil-Std-45662A.

LIMITATION AND/OR OTHER CONSIDERATIONS OF USE:

- A. The sealed source may be distributed to general licensees of agreement states or, specific or general licensees with a U.S. NRC license. Leak testing is performed after preparation at the facility and a certificate of leak test is provided with sealed sources.
- B. Storage: Store in cool, dry area in the original container.
- C. Wipe Test: When the surface of the source has been damaged or in accordance with US NRC OR Agreement State Regulations.
- D. Cleaning: Use a tissue moistened with rubbing alcohol but avoid acetone and similar strong solvents.
- E. Disposal: Determined by licensing authority.
- F. These sources should not be subjected to conditions exceeding those specified in ANSI 77C22212.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE

NO. NM-760-S-107-S

Date: April 1, 1991

Page 4 of 4

SAFETY ANALYSIS:

The ^{235/234}Uranium source based on our review of the information and test data completed are acceptable for licensing purposes. They have passed the tests for ^{235/234}Uranium in accordance to ANSI N542 appendix A leak test.

CautionContains Radioactive Material which, although beyond the scope of MSDS requirements, should be considered the principal hazard. This material should be handled only by trained individuals in conformance with 10 CFR requirements.

Date:

Concurrence:

Date:

Reviewed by:

Issued Agency: Agreement State

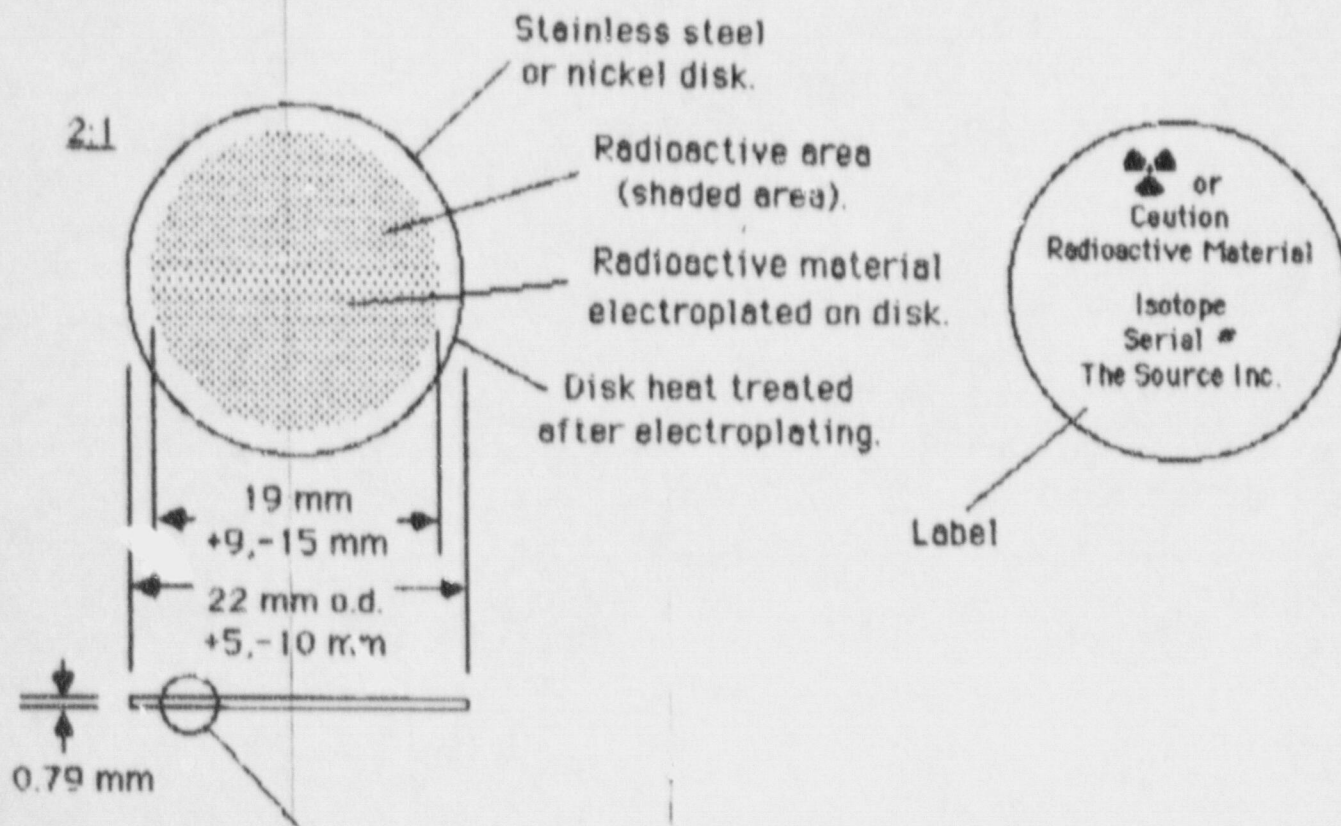
No. NH-780-S-107-S

April 1, 1991

Attachment #1

Top View Of Disk

Bottom View Of Disk



TRANSACTION REPORT

P. 01

MAY-16-96 THU 07:17

DATE START SENDER

RX TIME PAGES TYPE

NOTE

DP

MAY-16 07:13 505 473 5805

3' 32"

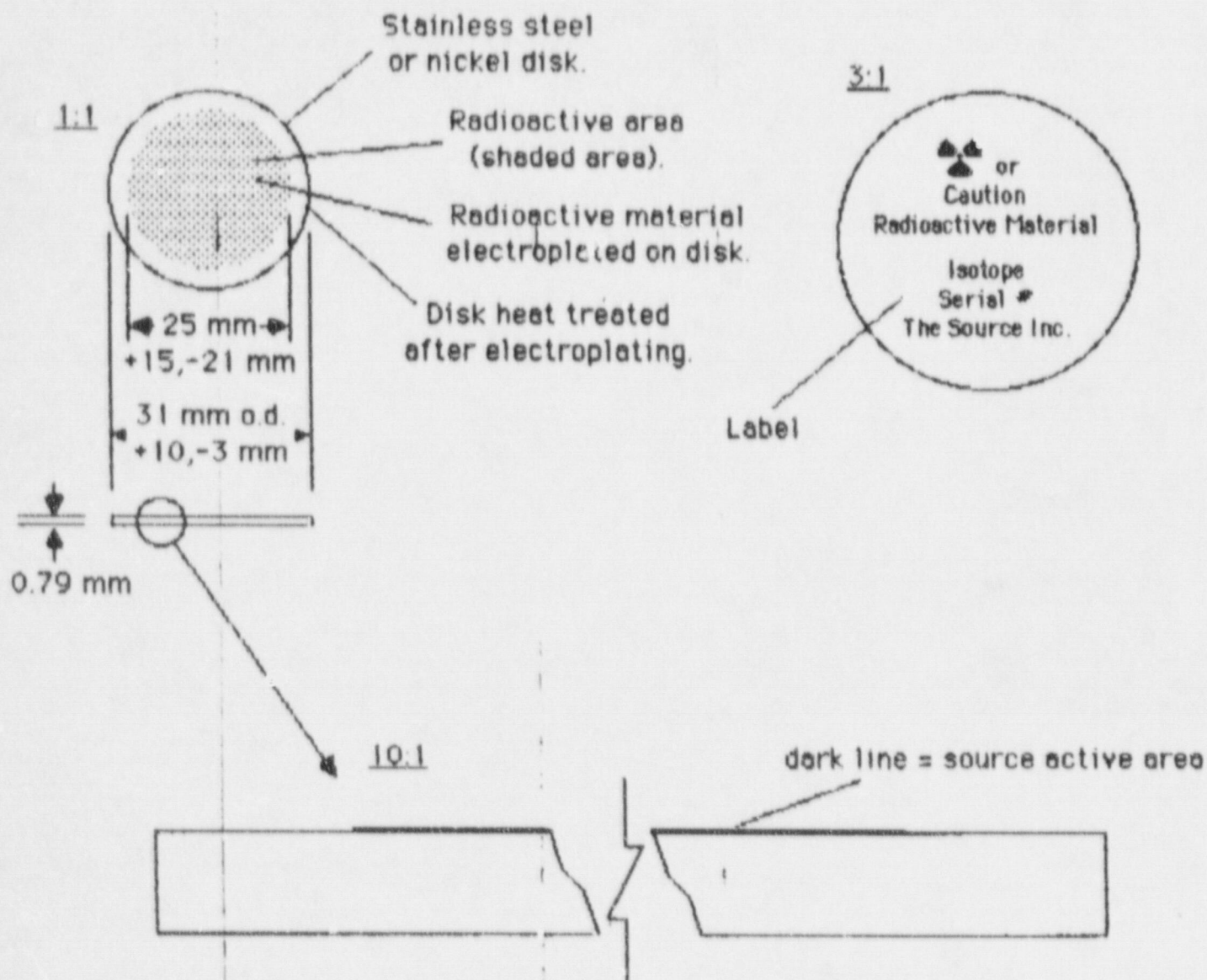
1 RECEIVE

CANCEL

No NM-760-S-107-S

April 1, 1991

Attachment #2

Top View Of DiskBottom View Of Disk

31 mm TS-235(U)-Alpha Electroplated Source

	Date	Name
Drawn:	3/91	J. Andrew
Approved:		
Scale:	1:1	3:1 10:1
Material:	Stainless Steel or Nickel	

Drawing #:



Radiation Standards and Check Sources
2810 Siler Lane, Santa Fe, NM 87501
(505) 473-9538

Scale: 1:1 3:1 10:1

Drawing #:

Radiation Standards and Check Sources
2810 Siler Lane, Santa Fe, NM 87501
(505) 473-9538

Material: Stainless Steel
or Nickel

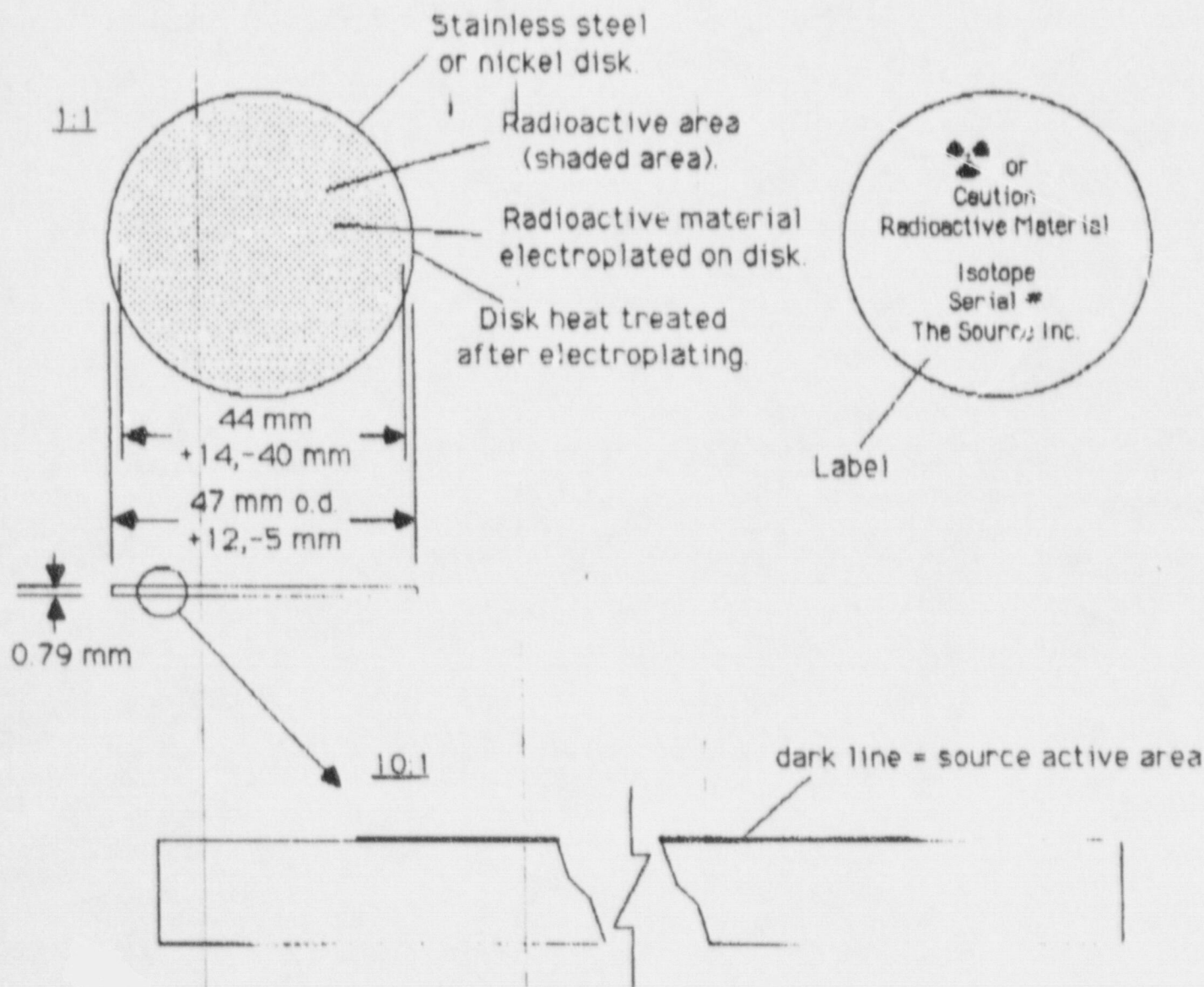
No. NM-780-S-107-5

April 1, 1991

Attachment #3

Top View Of Disk

Bottom View Of Disk



47 mm TS-235(U)-Alpha
Electroplated Source

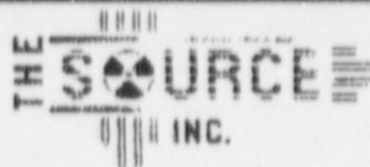
	Date	Name
Drawn:	3/91	J. Pacheco

THE SOURCE INC.

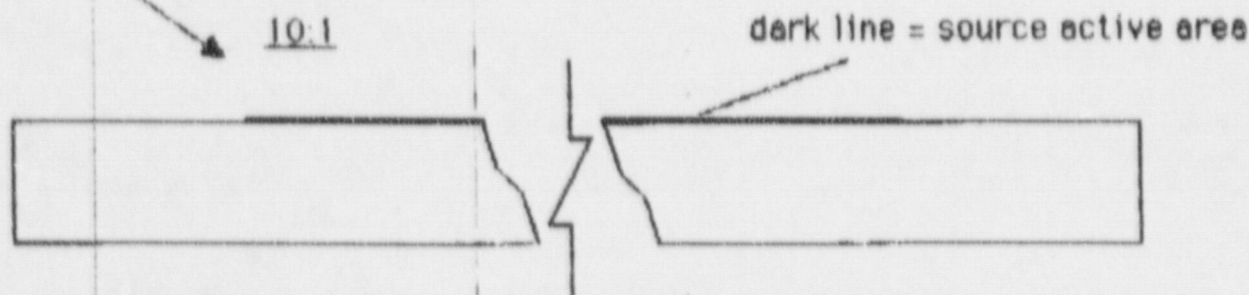
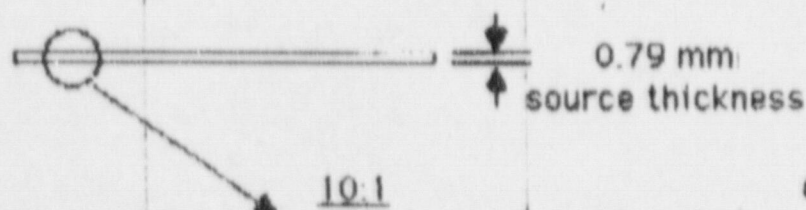
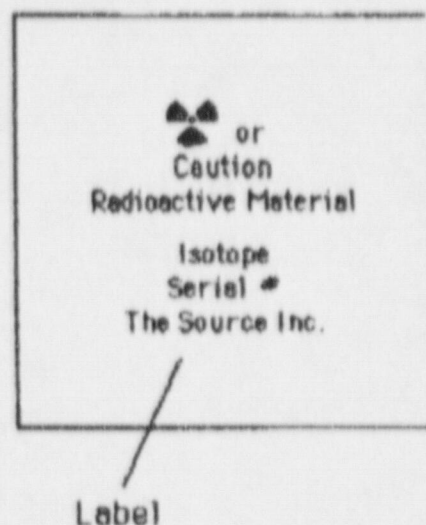
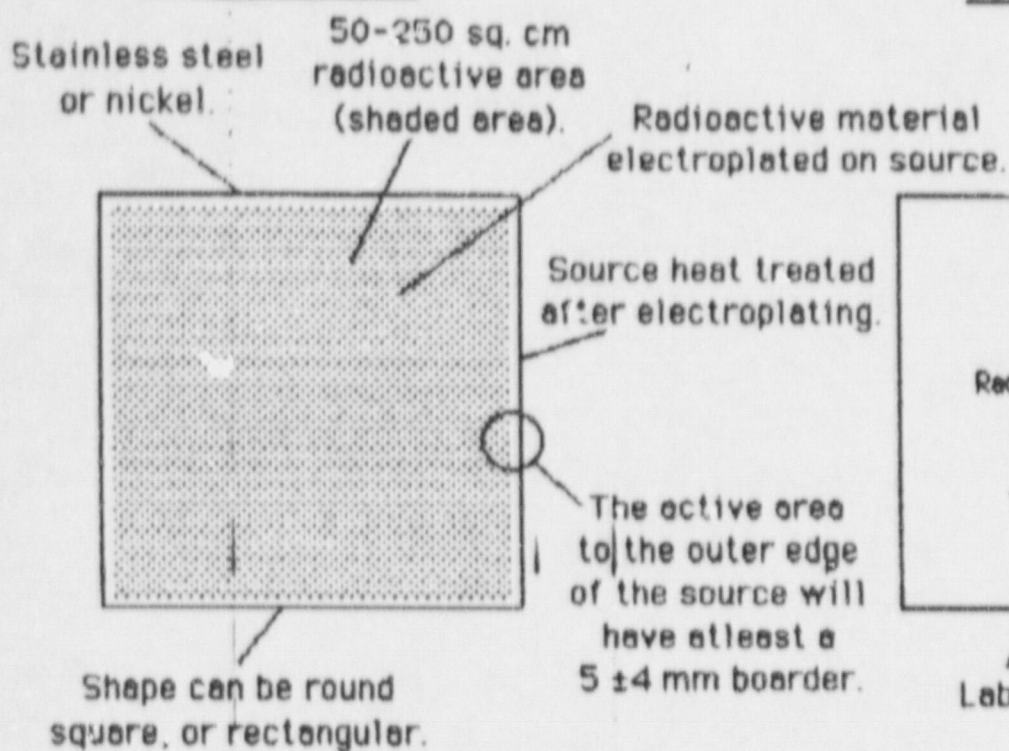
Electroplated Source

	Date	Name
Drawn:	3/91	T. Pacheco
Approved:		
Scale:	1:1	10:1
Material:	Stainless Steel or Nickel	

Drawing #:



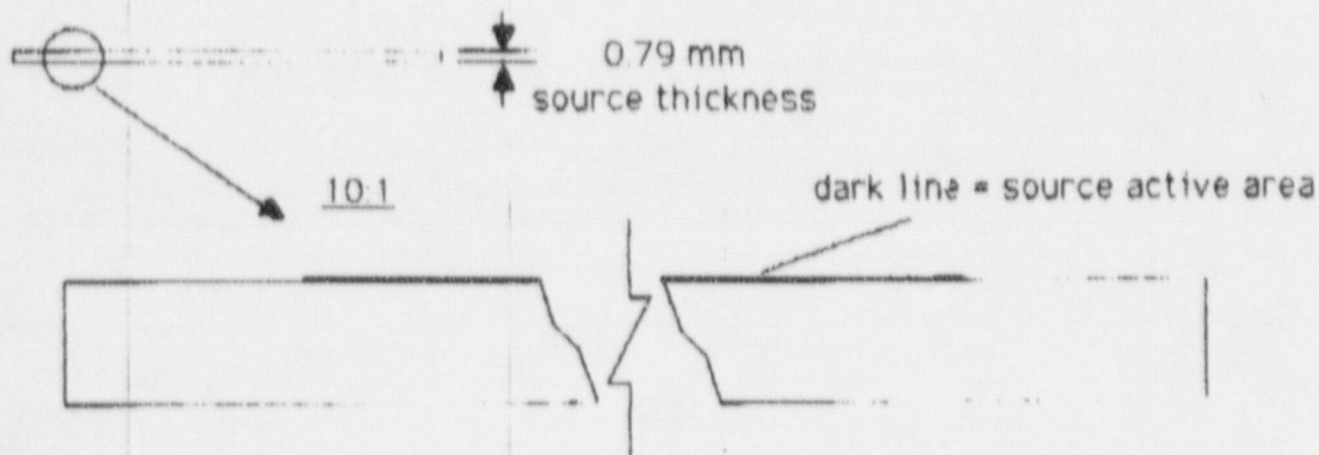
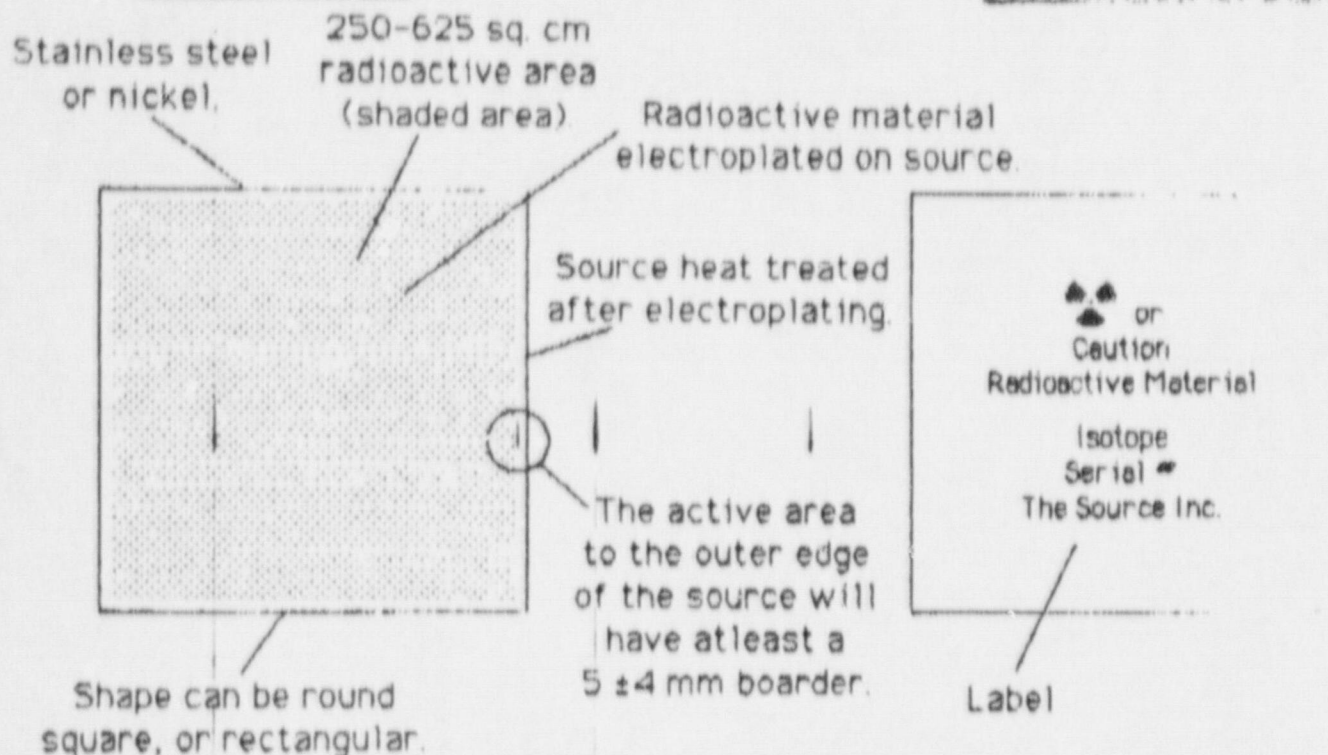
Radiation Standards and Check Sources
2810 Siler Lane, Santa Fe, NM 87501
(505) 473-9538

Top View Of DiskBottom View Of Disk

50-250 sq.cm TS-235(U)-Alpha Electroplated Source		
	Date	Name
Drawn:	3/91	T. Pacheco
Approved:		
Scale:	10:1	
Material:	Stainless Steel or Nickel	
		Drawing #:

THE SOURCE INC.

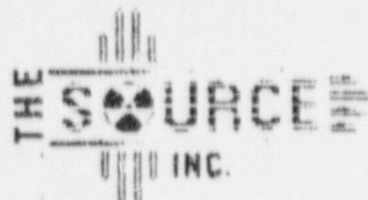
Radiation Standards and Check Sources
2810 Siler Lane, Santa Fe, NM 87501
(505) 473-9538

Top View Of DiskBottom View Of Disk

250-625 sq.cm TS-235(U)-Alpha Electroplated Source

	Date	Name
Drawn:	3/91	T. Anteco
Approved:		
Scale:	10:1	
Material:	Stainless Steel or Nickel	

Drawing #:



Radiation Standards and Check Sources
2810 Siler Lane, Santa Fe, NM 87501
(505) 473-9538

Material: Stainless Steel
or Nickel

2810 Siler Lane, Santa Fe, NM 87501
(505) 473-9538

*The Source
File*

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE

NO. NM-780-S-107-S

Date: April 1, 1991
Page 1 of 4

SOURCE TYPE: Alpha Calibration Sources

MODEL: TS-235-alpha S-U-47

MANUFACTURER/DISTRIBUTOR: The Source, Inc.
2810 Siler Lane
Santa Fe, NM 87501

ISOTOPE: 235/234 U

MAXIMUM ACTIVITY: 5 microcurie

LEAK TEST FREQUENCY: When the surface of the source has been damaged or
in accordance with US NRC OR Agreement state regulations.

PRINCIPAL USE: Calibration and check sources with activity less than
30uCi(T)

CUSTOM DEVICE: No

CUSTOM USER: None.

NO. NM-780-S-104-S

Date: April 1, 1991
Page 1 of 4SOURCE TYPE: Alpha Calibration SourcesMODEL: TS-238-alphaMANUFACTURER/DISTRIBUTOR: The Source, Inc.
2810 Siler Lane
Santa Fe, NM 87501ISOTOPE: ^{238}Pu MAXIMUM ACTIVITY: 12 microcurieLEAK TEST FREQUENCY: When the surface of the source has been damaged or in accordance with US NRC OR Agreement state regulations.PRINCIPAL USE: Calibration and check sources with activity less than $^{30}\text{uCi(T)}$ CUSTOM DEVICE: NoCUSTOM USER: None.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE

NO. NM-780-S-104-S

Date: April 1, 1991

Page 2 of 4

DESCRIPTION:

A. The type-238-alpha calibration and check sources are electroplated on stainless steel with activities up to 100 nanocurie or nickel with activities >100 nanocurie up to 12 microcurie. The material is heat treated after electroplating. This sealed source is used to check calibration of alpha radiation detection instruments.

B. Source dimensions are varying depending on the size of source ordered by the customer. The dimensions are shown in the generic diagram for each of the various sizes.

C. The sealed source is $<30\text{uCi}$ and does not fall under ANSI N542 Table 4 Performance Requirements or ISO-2919 Annex C Performance Requirements because the source is less than 30uCi . The source meets or exceeds ANSI N542 APPENDIX A LEAK TEST and 10CFR70.39. All sources are leak tested prior to transfer. A leak test certificate is issued with the sources.

LABELING:

The source is permanently marked as shown in attached diagram. All certified sources are placed in a wooden box with labeling indicating Caution Radioactive Material, Isotope, amount of activity and date of activity. The outside of the wooden box has a label of Nuclide and Caution Radioactive Material. Check sources are not placed in a wooden box, but are in a bag or plastic box with label indicating Caution Radioactive Material, Isotope and nominal activity. "The receipt, possession, use and transfer of this source, Model _____, Serial No _____, are subject to a general license and the regulations of the United States Nuclear Regulatory Commission or of a State with which the Commission has entered into an agreement for the exercise of regulatory authority. Do not remove this label."
CAUTION-RADIOACTIVE MATERIAL-THIS SOURCE CONTAINS PLUTONIUM. DO NOT TOUCH RADIOACTIVE PORTION OF THIS SOURCE.

DIAGRAM: see attached drawing.

DIAGRAM: see attached drawing.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE

NO. NM-780-S-104-S

Date: April 1, 1991
Page 3 of 4

CONDITION OF NORMAL USE:

The sealed source is intended for use in the calibration check of alpha detection instrumentation. The source should be handled with forceps to avoid finger prints or scratching the radioactive surface of the source.

PROTOTYPE TESTING:

Conforms to 10CFR70.39 & ANSI N542 appendix A leak test.

EXTERNAL RADIATION:

The maximum external radiation levels in mr/hr
at 12 INCHES $<0.5\text{mr/hr}$

QUALITY ASSURANCE AND CONTROL:

The manufacture maintains an acceptable quality control/assurance program for manufacturing, procurement and final acceptance of each sealed source.

Conforms to ANS N42.22-1995, and NRC Regulatory Guide 4.15.

LIMITATION AND/OR OTHER CONSIDERATIONS OF USE:

A. The sealed source may be distributed to general licensees of agreement states or, specific or general licensees with a U.S. NRC license. Leak testing is performed after preparation at the facility and a certificate of leak test is provided with sealed sources.

B. Storage: Store in cool, dry area in the original container.

C. Wipe Test: When the surface of the source has been damaged or in

B. Storage: Store in cool, dry area in the original container.

C. Wipe Test: When the surface of the source has been damaged or in accordance with US NRC OR Agreement State Regulations.

D. Cleaning: Use a tissue moistened with rubbing alcohol but avoid acetone and similar strong solvents.

E. Disposal: Determined by licensing authority.

F. These sources should not be subjected to conditions exceeding those specified in ANSI 77C22212.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE

NO. NM-780-S-104-S

Date: April 1, 1991

Page 4 of 4

SAFETY ANALYSIS:

The ²³⁸Plutonium source based on our review of the information and test data completed are acceptable for licensing purposes. They have passed the tests for ²³⁸Plutonium in accordance to 10CFR70.39.

CautionContains Radioactive Material which, although beyond the scope of MSDS requirements, should be considered the principal hazard. This material should be handled only by trained individuals in conformance with 10 CFR requirements.

Date:

Concurrence:

Date:

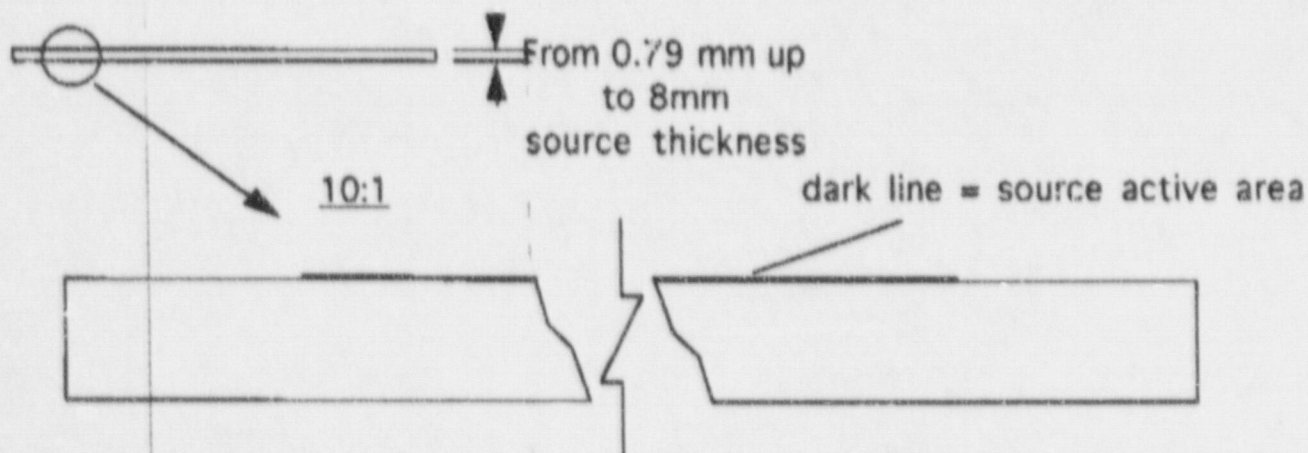
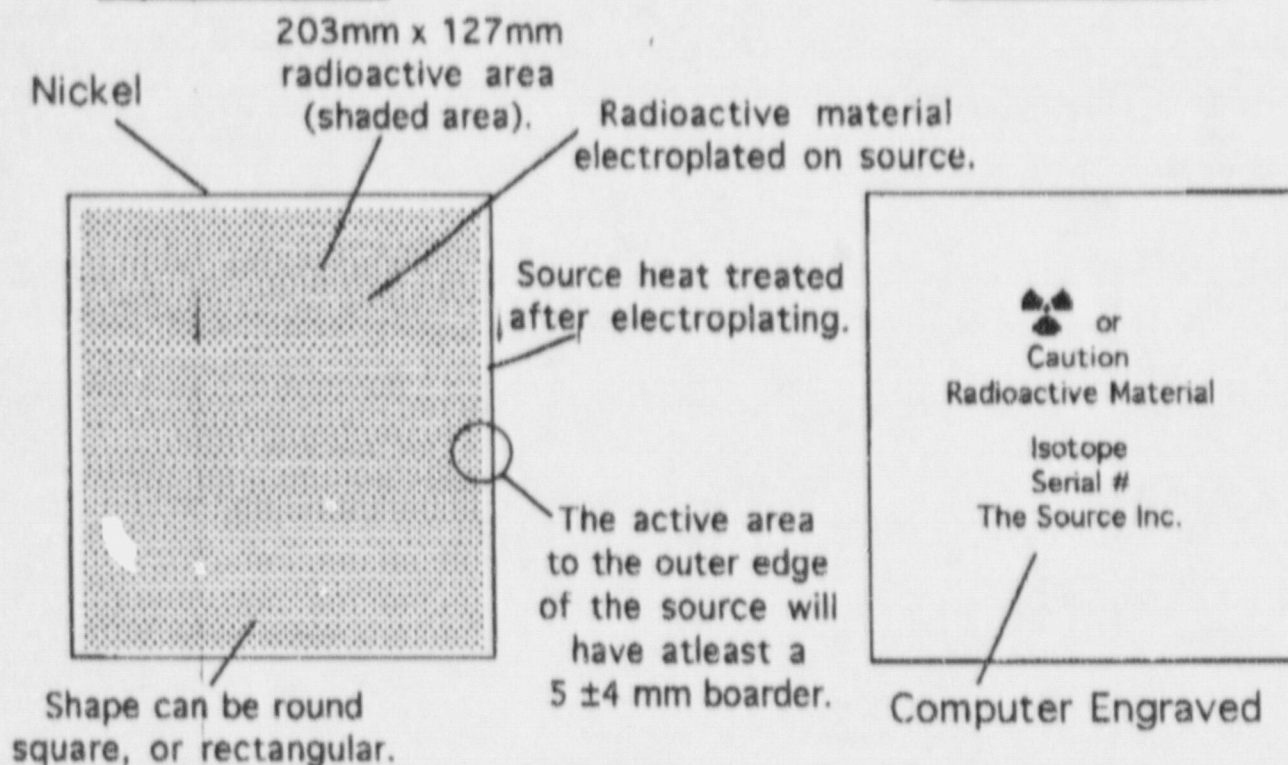
Reviewed by:

Issued Agency: Agreement State

NO. NM-780-S-104-S

April 1, 1991

Attachment #6

Top View Of DiskBottom View Of Disk

219mm x 143mm TS-238-Alpha
Electroplated Source

	Date	Name
Drawn:	4/1/91	T.P.
Approved:	5-30-91	C.G.
Scale:	10:1	

Drawing #:

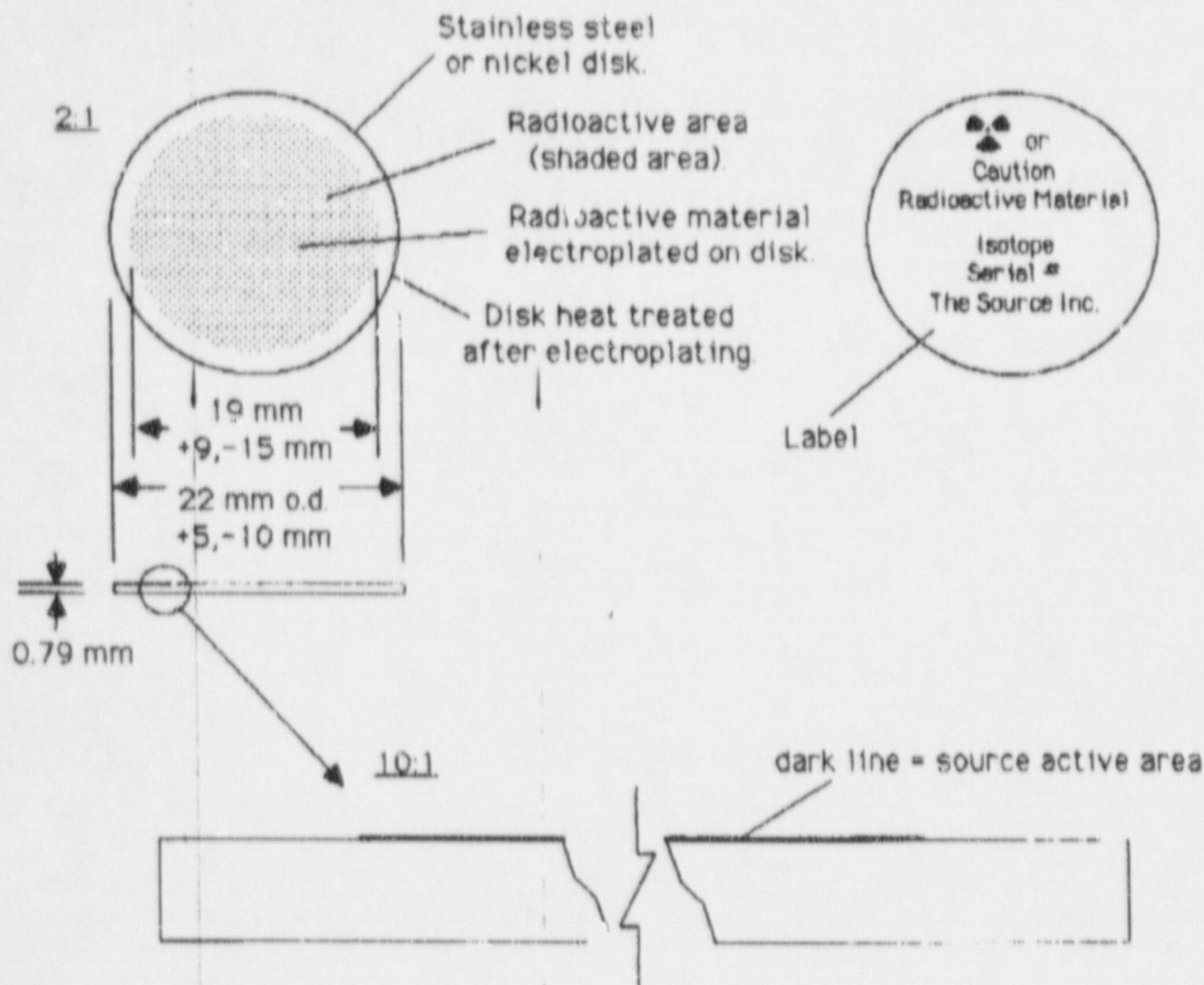


Radiation Standards and Check Sources
2810 Silver Lane, Santa Fe, NM 87501

No. NM-780-S-104-S

April 1, 1991

Attachment #1

Top View Of DiskBottom View Of Disk

22 mm TS-238-Alpha(Pu) Electroplated Source			
	Date	Name	
Drawn:	3/91	J. Anderson	
Approved:	W.L.O.	5-1-91	
Scale:	2:1	10:1	Drawing #:
Material: Stainless Steel or Nickel			

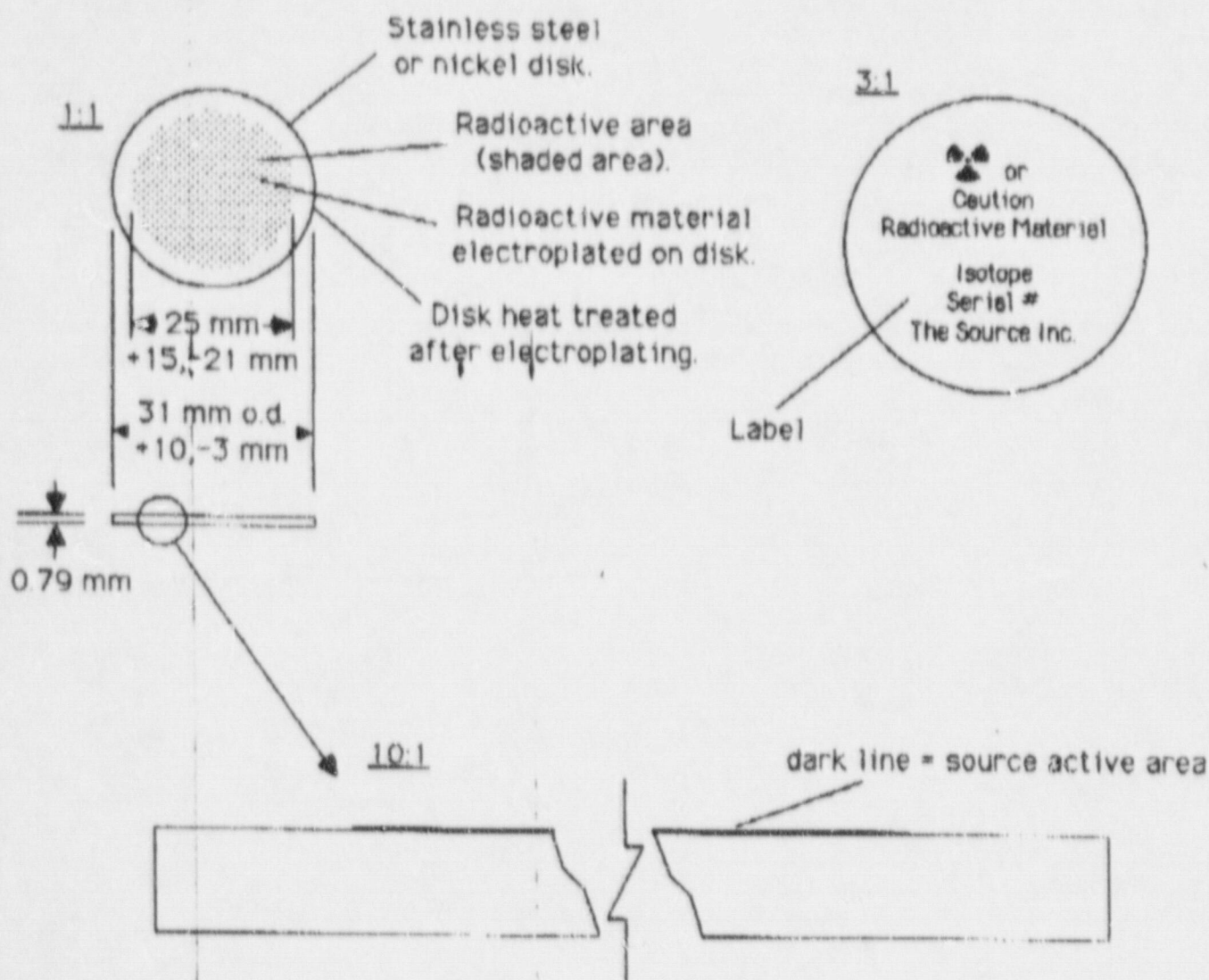


Radiation Standards and Check Sources
2810 Siler Lane, Santa Fe, NM 87501
(505) 473-9538

No. NM-780-5-104-S

April 1, 1991

Attachment #2

Top View Of DiskBottom View Of Disk

31 mm TS-238-Alpha(Pu) Electroplated Source			
	Date	Name	
Drawn:	3/91	T. Arduini	
Approved:	2010/1/14	2010	
Scale:	1:1 3:1 10:1		Drawing #:
Material: Stainless Steel or Nickel			

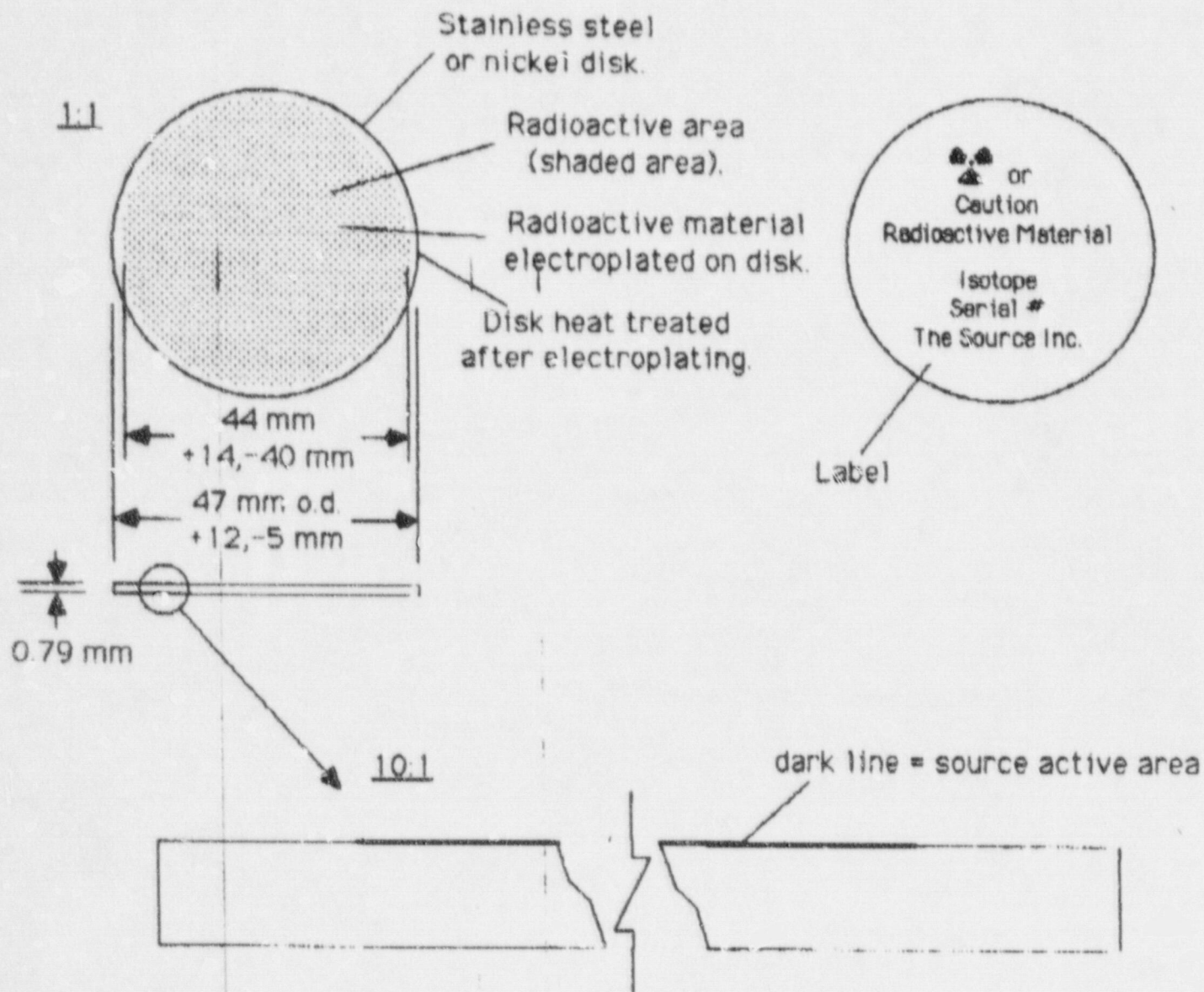
THE SOURCE INC.

Radiation Standards and Check Sources
2810 Siler Lane, Santa Fe, NM 87501
(505) 473-9538

No. NM-780-S-104-S

April 1, 1991

Attachment #3

Top View Of DiskBottom View Of Disk

47 mm TS-238-Alpha(Pu) Electroplated Source		
	Date	Name
Drawn:	5/91	T. Padilla
Approved:	M. O. S. / M. O.	M. O.
Scale:	1:1	10:1
Material:	Stainless Steel or Nickel	
Drawing #:		

THE SOURCE
INC.

Radiation Standards and Check Sources
2810 Siler Lane, Santa Fe, NM 87501
(505) 473-9538

Scale: 1:1 10:1	Drawing #:	Radiation Standards and Check Sources 2810 Siler Lane, Santa Fe, NM 87501 (505) 473-9538
Material: Stainless Steel or Nickel		

No. NM-780-S-104-S

April 1, 1991

Attachment #4

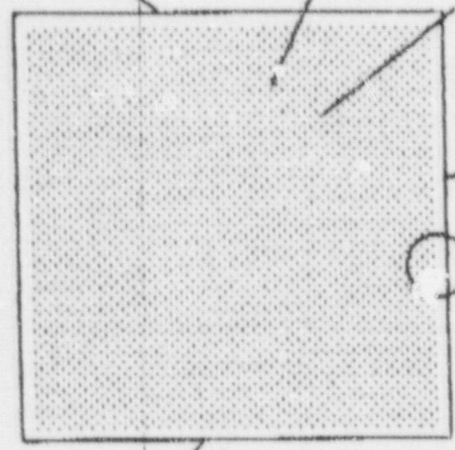
Top View Of Disk

Bottom View Of Disk

Stainless steel
or nickel.

50-250 sq. cm
radioactive area
(shaded area).

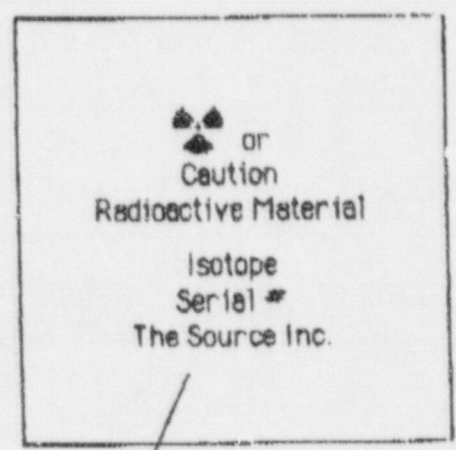
Radioactive material
electroplated on source.



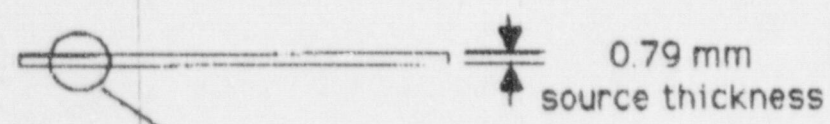
Source heat treated
after electroplating.

The active area
to the outer edge
of the source will
have atleast a
 5 ± 4 mm boarder.

Shape can be round
square, or rectangular.

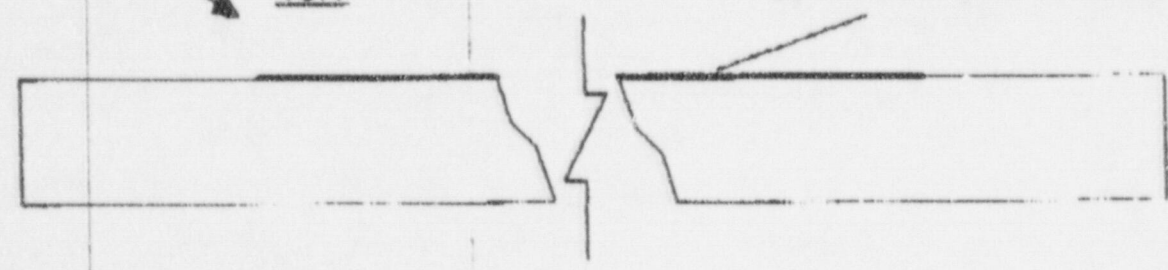


Label



10:1

dark line = source active area



**50-250 sq.cm TS-238-Alpha
Electroplated Source**

	Date	Name
Drawn:	3/91	T. Anderson
Approved:	5/1/91	M.O.
Scale:	10:1	
Material:	Stainless Steel or Nickel	

Drawing #:



Radiation Standards and Check Sources
2810 Siler Lane, Santa Fe, NM 87501
(505) 473-9538

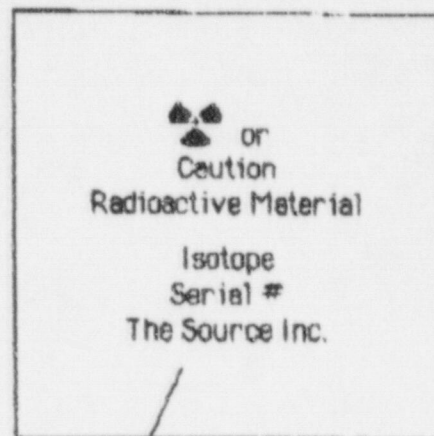
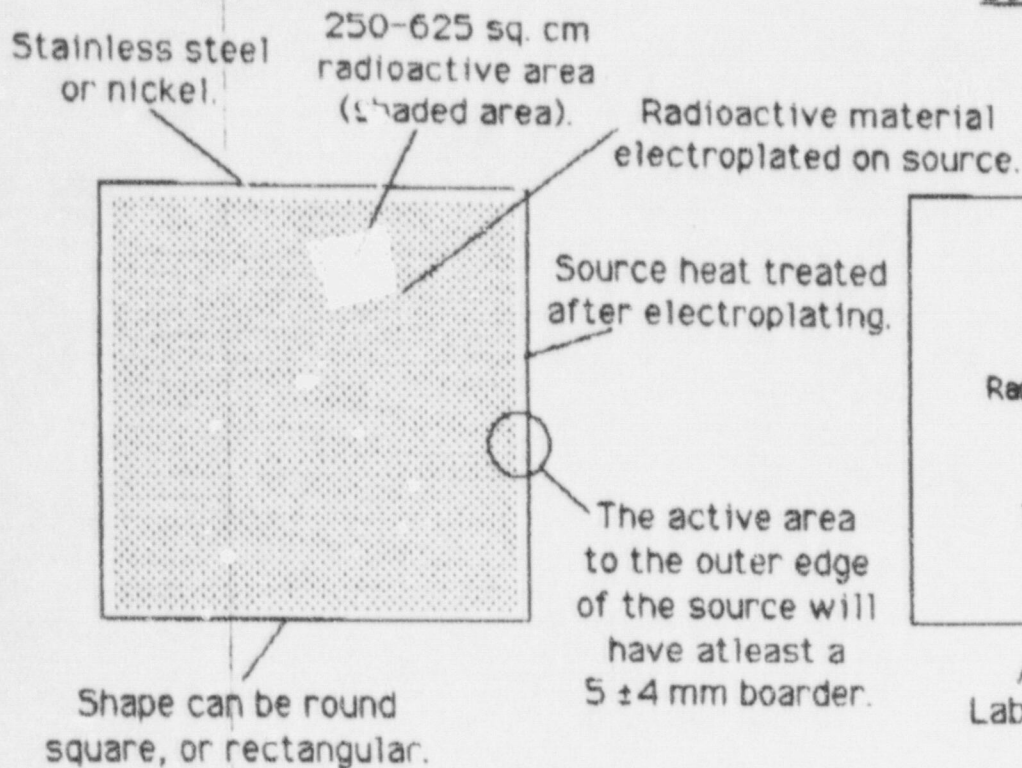
No. NM-780-5-104-5

April 1, 1991

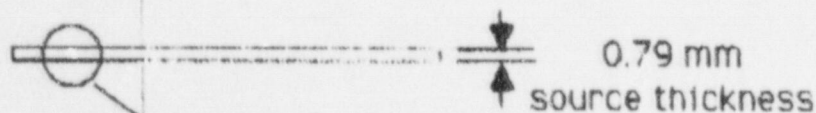
Attachment #5

Top View Of Disk

Bottom View Of Disk

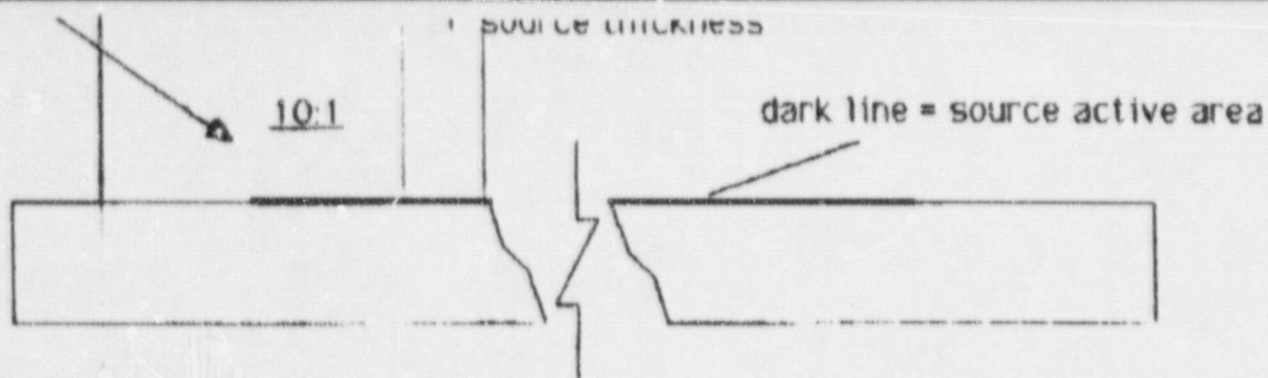


Label



10:1

dark line = source active area



**250-625 sq.cm TS-238-Alpha(Pu)
Electroplated Source**

	Date	Name	
Drawn:	3/91	T. R. [signature]	Drawing #:
Approved:	5/1/91	M.C. [signature]	
Scale:	10:1		
Material: Stainless Steel or Nickel			



Radiation Standards and Check Sources
2810 Siler Lane, Santa Fe, NM 87501
(505) 473-9538

to: Wm. Floyd, N.M. RCP

3/20/91

from: Lloyd Bolling, SP/GPA

I am enclosing the "Source" SS&D
sheet with new vendor # 780
and other suggested changes.

301-
492-
0327



BRUCE KING
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT
Harold Runnels Building
1190 St. Francis Drive
Santa Fe, New Mexico 87503

JUDITH M. ESPINOSA
SECRETARY

RON CURRY
DEPUTY SECRETARY

TELECOPIER TRANSMITTAL

DATE: _____ Time: _____ Page _____ OF _____
(inc. transmittal)

PLEASE DELIVER THE FOLLOWING PAGES TO:

TO: Mike Ortiz

LOCATION: _____

Telephone Number: _____

Telecopier Number: 473-5805

FROM: Bill Floyd

LOCATION: _____

Telephone: _____

TELECOPIER NUMBER: (505) 827-2836

Comments:

NO. NM-~~780~~-S- -S
780

Date: Nov 18, 1986
Page 1 of 4

SOURCE TYPE: Alpha Calibration Sources

MODEL: TS-241-alpha

MANUFACTURER/DISTRIBUTOR: The Source, Inc.
2810 Siler Lane
Santa Fe, NM 87501

ISOTOPE: ^{241}Am

MAXIMUM ACTIVITY: 5.0 microcuries

LEAK TEST FREQUENCY: When the surface of the source has been damaged or in accordance with US NRC OR Agreement state regulations.

PRINCIPAL USE: Calibration and check sources with activity less than 30uCi(T)

CUSTOM DEVICE: No

CUSTOM USER: None.

Start on Page 2

DESCRIPTION

A. The type-241-alpha calibration and check sources are electroplated on stainless steel with activities up to 100 nanocurie or nickel with activities >100 nanocuries up to 5 microcuries. The material is heat treated after electroplating. This sealed source is used to check calibration of alpha radiation detection instruments.

B. Source dimensions are varying depending on the size of source ordered by the customer. The dimensions are shown in the generic diagram for each of the various sizes.

C. The sealed source is <30uCi and does not fall under ANSI N542 Table 4 Performance Requirements or ISO-2919 Annex C Performance Requirements because the source is less than 30uCi. The source meets 10CFR32.102 prototype test. All sources are leak tested prior to transfer. A leak test certificate is issued with the sources.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE

NO..

Date: 11-18-86

Page 2 of 4

LABELING

The source is permanently marked as shown in attached diagram. All certified sources are placed in a wooden box with labeling indicating Caution Radioactive Material, Isotope, amount of activity and date of activity. The outside of the wooden box has a label of Nuclide and Caution Radioactive Material. Check sources are not placed in a wooden box, but are in a plastic bag with label indicating Caution Radioactive Material, Isotope and nominal activity. Also included in the shipment is the following statement; "The receipt, possession, use and transfer of this source, model _____, serial # _____, are subject to a general license and the regulations of the U.S. Nuclear Regulatory Commission or of a state with which the Commission has entered into an agreement for the exercise of regulatory authority. Do not remove this label. CAUTION-RADIOACTIVE MATERIAL-THIS SOURCE CONTAINS AMERICIUM 241. DO NOT TOUCH RADIOACTIVE PORTION OF THIS SOURCE."

DIAGRAM: see attached drawing

CONDITION OF NORMAL USE:

The sealed source is intended for use in the calibration check of alpha detection instrumentation. The source should be handled with forceps to avoid finger prints or scratching the radioactive surface of the source.

PROTOTYPE TESTING

102 PROTOTYPE TEST FOR CALIBRATION OR REFERENCE
CONTAINING AMERICIUM 241

REGULATORY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE

NO.

Date: 11-18-86

Page 3 of 4

EXTERNAL RADIATION

The maximum external radiation levels in mr/hr

at 12 INCHES

<0.5mr/hr

QUALITY ASSURANCE AND CONTROL:

The manufacture maintains an acceptable quality control/assurance program for manufacturing, procurement and final acceptance of each sealed source.

LIMITATION AND/OR OTHER CONSIDERATIONS OF USE:

A. The sealed source may be distributed to general licensees of agreement states or, specific or general licensees with a U.S. NRC license. Leak testing is performed after preparation at the facility and a certificate of leak test is provided with sealed sources.

B. Storage: Store in cool, dry area in the original container.

C. Wipe Test: When the surface of the source has been damaged or in accordance with US NRC OR Agreement State Regulations.

D. Cleaning: Use a tissue moistened with rubbing alcohol but avoid acetone and similar strong solvents.

E. Disposal: Determined by licensing authority.

F. These sources should not be subjected to conditions exceeding those specified in ANSI 77C22212.

SAFETY ANALYSIS:

The ²⁴¹Americium source based on our review of the information and test data completed are acceptable for licensing purposes. They have passed the tests for ²⁴¹Americium in accordance to 10CFR32.102.

10:

Date: 11-18-86

Page 4 of 4

CautionContains Radioactive Material which, although beyond the scope of MSDS requirements, should be considered the principal hazard. This material should be handled only by trained individuals in conformance with 10 CFR requirements.

Date:

Concurrence:

Date:

Reviewed by:

Issued Agency Agreement State

NO.


NM- -S- -S

Date: March , 1991

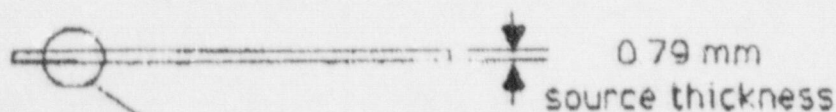
Attachment #1

Top View Of Disk

Bottom View Of Disk

Stainless steel
or nickel250-625 sq. cm
radioactive area
(shaded area).Radioactive material
electroplated on source.Source heat treated
after electroplating.The active area
to the outer edge
of the source will
have at least a
 5 ± 4 mm border.Shape can be round
square, or rectangular.
 or
Caution
Radioactive Material
Isotope
Serial #
The Source Inc.

Label



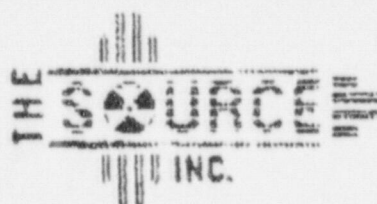
10:1

dark line = source active area

250-625 sq. cm TS-241-Alpha Electroplated Source

	Date	Name
Drawn:		
Approved:		
Scale:	10:1	
Material:	Stainless Steel or Nickel	

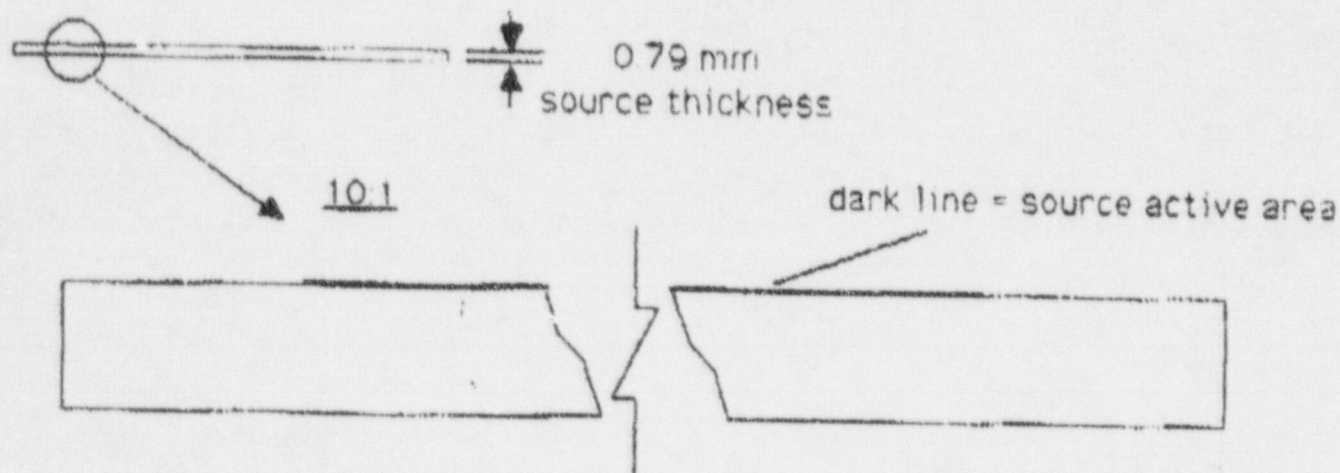
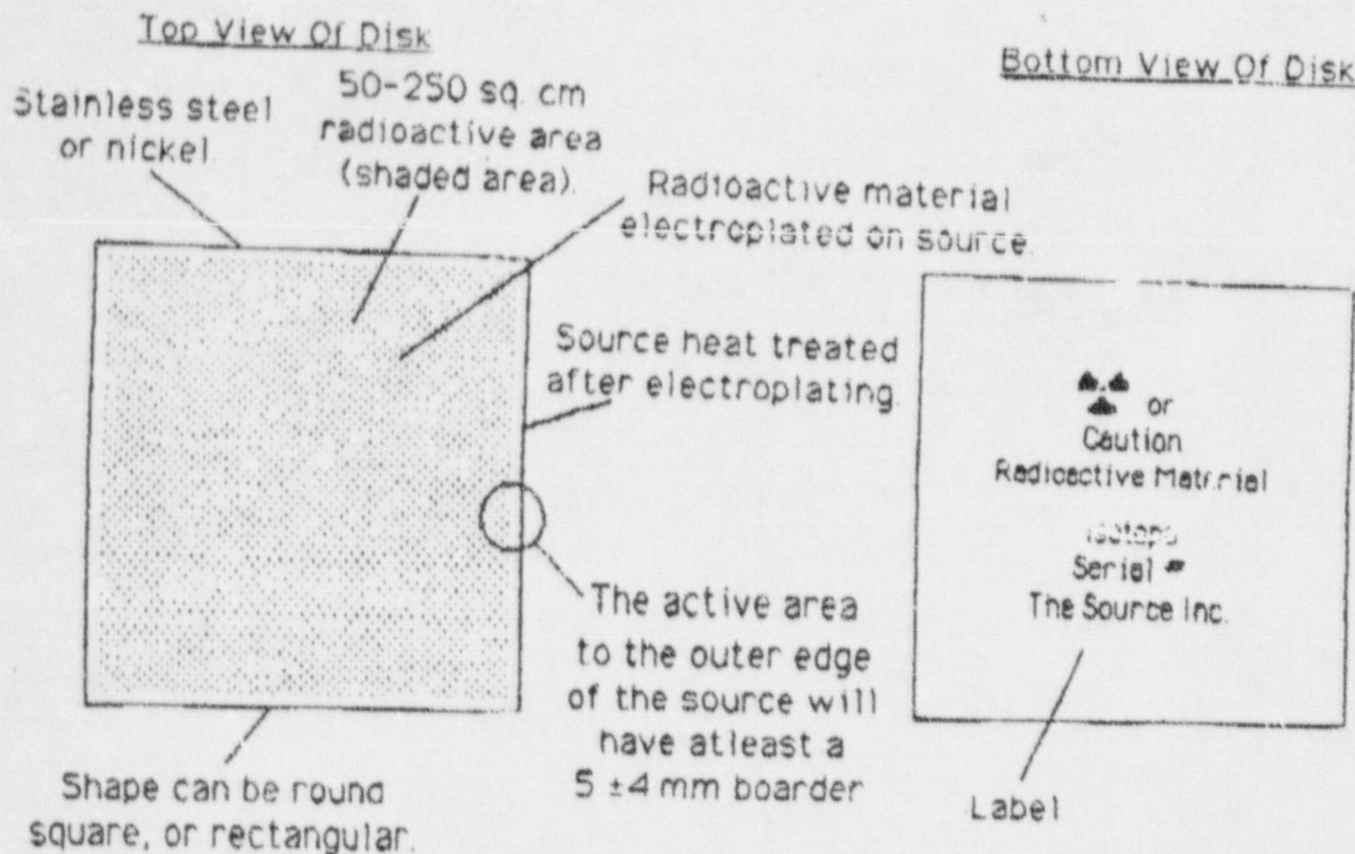
Drawing #:



THE SOURCE
INC.

Radiation Standards and Check Sources
2810 Siler Lane, Santa Fe, NM 87501
(505) 473-9538

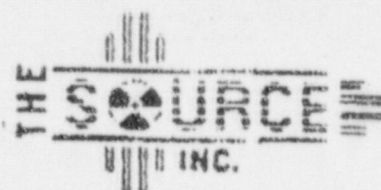
Attachment #2



**50-250 sq.cm TS-241-Alpha
Electroplated Source**

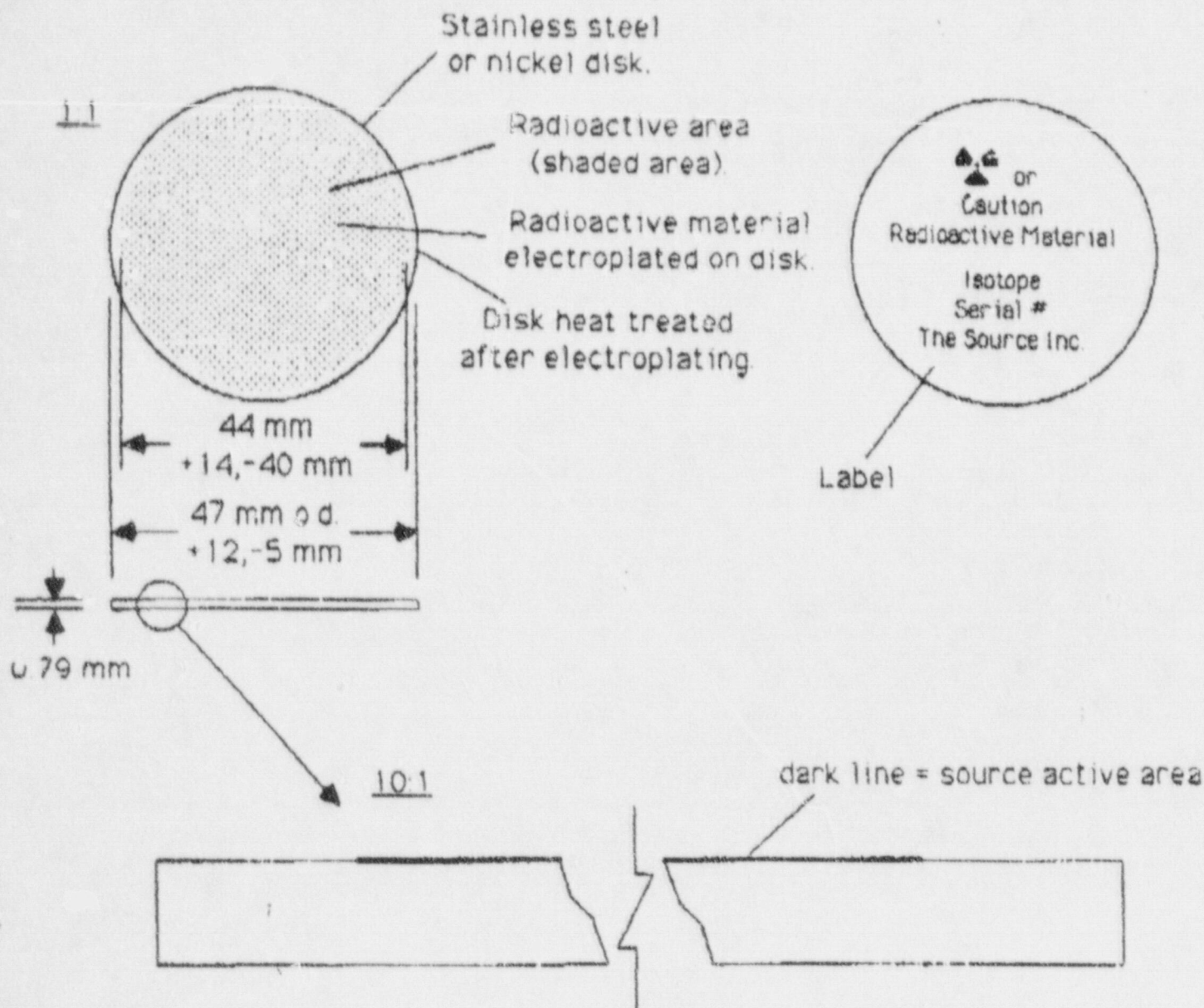
Date	Name
Drawn:	
Approved:	
Scale: 10:1	
Material: Stainless Steel or Nickel	

Drawing #:



Radiation Standards and Check Sources
2810 Siler Lane, Santa Fe, NM 87501

Attachment #3

Top View Of DiskBottom View Of Disk
**47 mm TS-241-Alpha
Electroplated Source**

	Date	Name
Drawn:		
proved:		
Scale:	1:1	10:1
Material:	Stainless Steel or Nickel	

Drawing #:

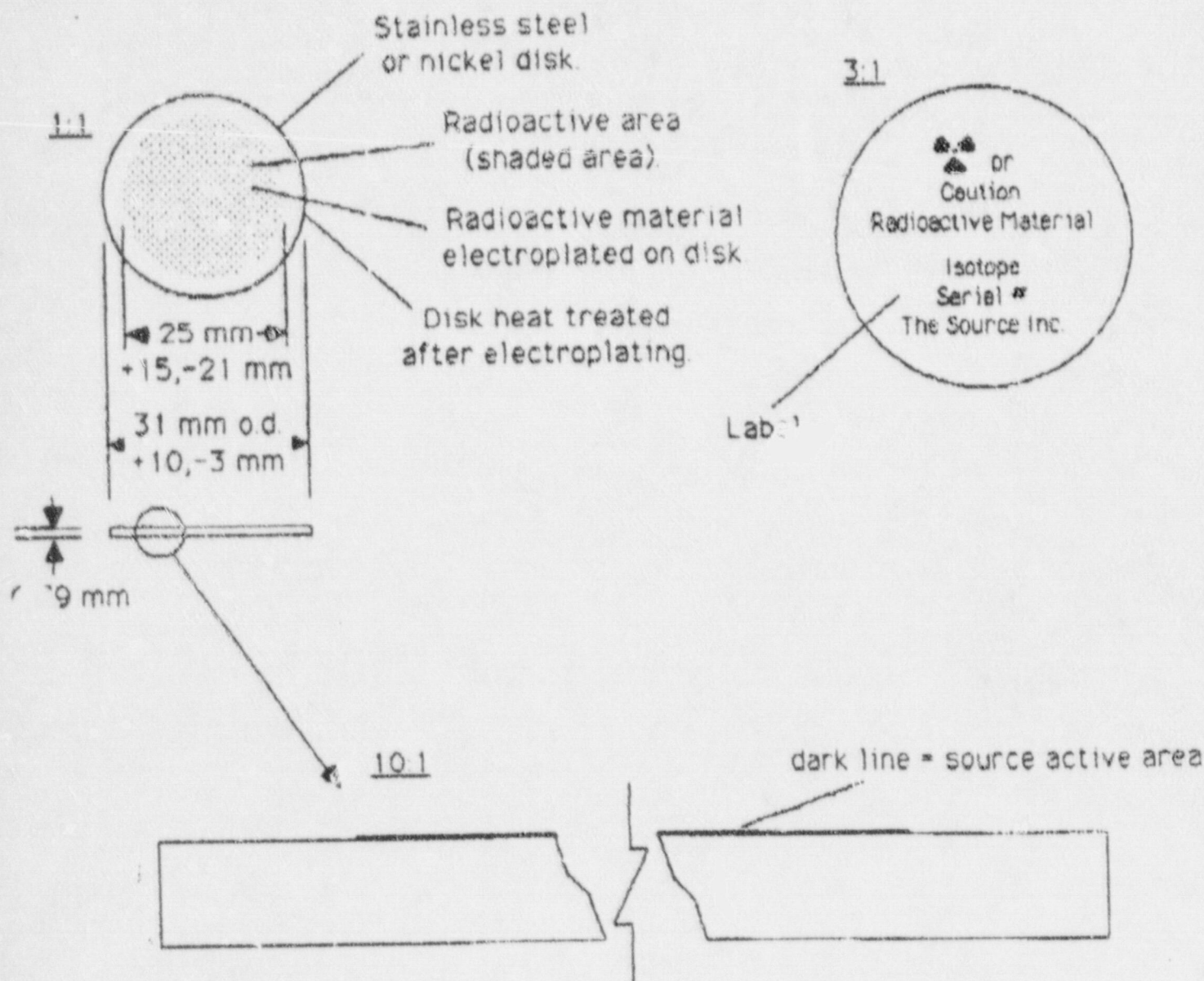
THE SOURCE INC.


Radiation Standards and Check Sources
2810 Siler Lane, Santa Fe, NM 87501
(505) 473-9538

Attachment
4

Top View Of Disk

Bottom View Of Disk



31 mm TS-241-Alpha Electroplated Source			
Date	Name	<div style="text-align: center;">  <p>INC.</p> </div>	
Drawn:			
Approved:			
Scale:	1:1 3:1 10:1	Drawing #	
Material: Stainless Steel or Nickel		Radiation Standards and Check Sources 2810 Siler Lane, Santa Fe, NM 87501 (505) 473-9538	

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE

NO. NM-780-S-100-5

Date: April 1, 1991
Page 1 of 4

SOURCE TYPE: Alpha Calibration Sources

MODEL: TS-241-alpha

MANUFACTURER/DISTRIBUTOR: The Source, Inc.
2610 Siler Lane
Santa Fe, NM 87501

ISOTOPE: ^{241}Am

MAXIMUM ACTIVITY: 5.0 microcurie

LEAK TEST FREQUENCY: When the surface of the source has been damaged or in accordance with US NRC OR Agreement state regulations.

PRINCIPAL USE: Calibration and check sources with activity less than 30uCi(T)

CUSTOM DEVICE: No

CUSTOM USER: None.

DESCRIPTION

A. The type-241-alpha calibration and check sources are electroplated on stainless steel with activities up to 100 nanocurie or nickel with activities >100 nanocuries up to 5 microcuries. The material is heat treated after electroplating. This sealed source is used to check calibration of alpha radiation detection instruments.

B. Source dimensions are varying depending on the size of source ordered by the customer. The dimensions are shown in the generic diagram for each of the various sizes.

C. The sealed source is <30uCi and does not fall under ANSI N542 Table 4 Performance Requirements or ISO 2919 Annex C Performance Requirements because the source is less than 30uCi. The source meets 10CFR32.102 prototype test. All sources are leak tested prior to transfer. A leak test certificate is issued with the sources.

LABELING

The source is permanently marked as shown in attached diagram. All certified sources are placed in a wooden box with labeling indicating Caution Radioactive Material, Isotope, amount of activity and date of activity. The outside of the wooden box has a label of Nuclide and Caution Radioactive Material. Check sources are not placed in a wooden box, but are in a plastic bag with label indicating Caution Radioactive Material, Isotope and nominal activity. Also included in the shipment is the following statement, "The receipt, possession, use and transfer of this source, model _____, serial # _____, are subject to a general license and the regulations of the U.S. Nuclear Regulatory Commission or of a state with which the Commission has entered into an agreement for the exercise of regulatory authority. Do not remove this label. CAUTION-RADIOACTIVE MATERIAL-THIS SOURCE CONTAINS AMERICIUM 241. DO NOT TOUCH RADIOACTIVE PORTION OF THIS SOURCE.

DIAGRAM: see attached drawing.

SAFETY EVALUATION OF SEALED SOURCE

NO. NM-780-S-100-S

Date: April 1, 1991

Page 3 of 4

CONDITION OF NORMAL USE:

The sealed source is intended for use in the calibration check of alpha detection instrumentation. The source should be handled with forceps to avoid finger prints or scratching the radioactive surface of the source.

PROTOTYPE TESTING:

Conforms to 10CFR32.102 PROTOTYPE TEST FOR CALIBRATION OR REFERENCE SOURCES CONTAINING AMERICIUM 241.

EXTERNAL RADIATION:

The maximum external radiation levels in mr/hr
at 12 INCHES $<0.5\text{mr/hr}$

QUALITY ASSURANCE AND CONTROL:

The manufacture maintains an acceptable quality control/assurance program for manufacturing, procurement and final acceptance of each sealed source.

LIMITATION AND/OR OTHER CONSIDERATIONS OF USE:

A. The sealed source may be distributed to general licensees of agreement states or, specific or general licensees with a U.S. NRC license. Leak testing is performed after preparation at the facility and a certificate of leak test is provided with sealed sources.

B. Storage: Store in cool, dry area in the original container.

C. Wipe Test: When the surface of the source has been damaged or in accordance with US NRC OR Agreement State Regulations.

D. Cleaning: Use a tissue moistened with rubbing alcohol but avoid acetone and similar strong solvents.

E. Disposal: Determined by licensing authority

F. These sources should not be subjected to conditions exceeding those specified in ANSI 77C22212

REGISTER OF RADIOACTIVE SEALED SOURCES AND
SAFETY EVALUATION OF SEALED SOURCE

NO. NM-780-S-100-5

Date: April 1, 1991

Page 4 of 4

SAFETY ANALYSIS:

The $^{241}\text{Americium}$ source based on our review of the information and test data completed are acceptable for licensing purposes. They have passed the tests for $^{241}\text{Americium}$ in accordance to 10CFR32.102.

CautionContains Radioactive Material which, although beyond the scope of MSDS requirements, should be considered the principal hazard. This material should be handled only by trained individuals in conformance with 10 CFR requirements.

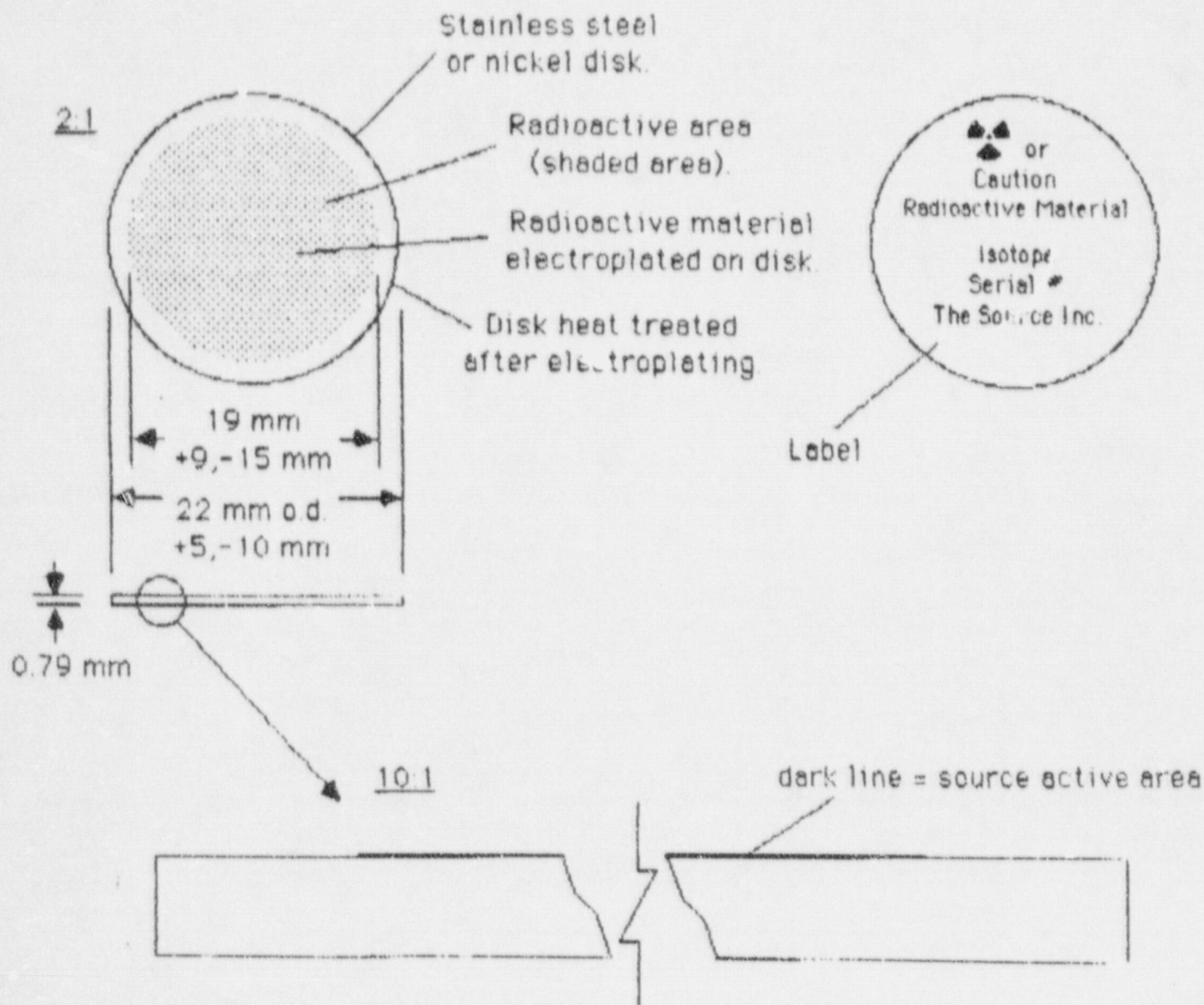
Date:

Concurrence:

Date

Reviewed by:

Issued Agency: Agreement State

Top View Of DiskBottom View Of Disk

22 mm TS-241-Alpha Electroplated Source

	Date	Name
Drawn		
Approved		
Scale:	2:1	10:1
Material:	Stainless Steel or Nickel	

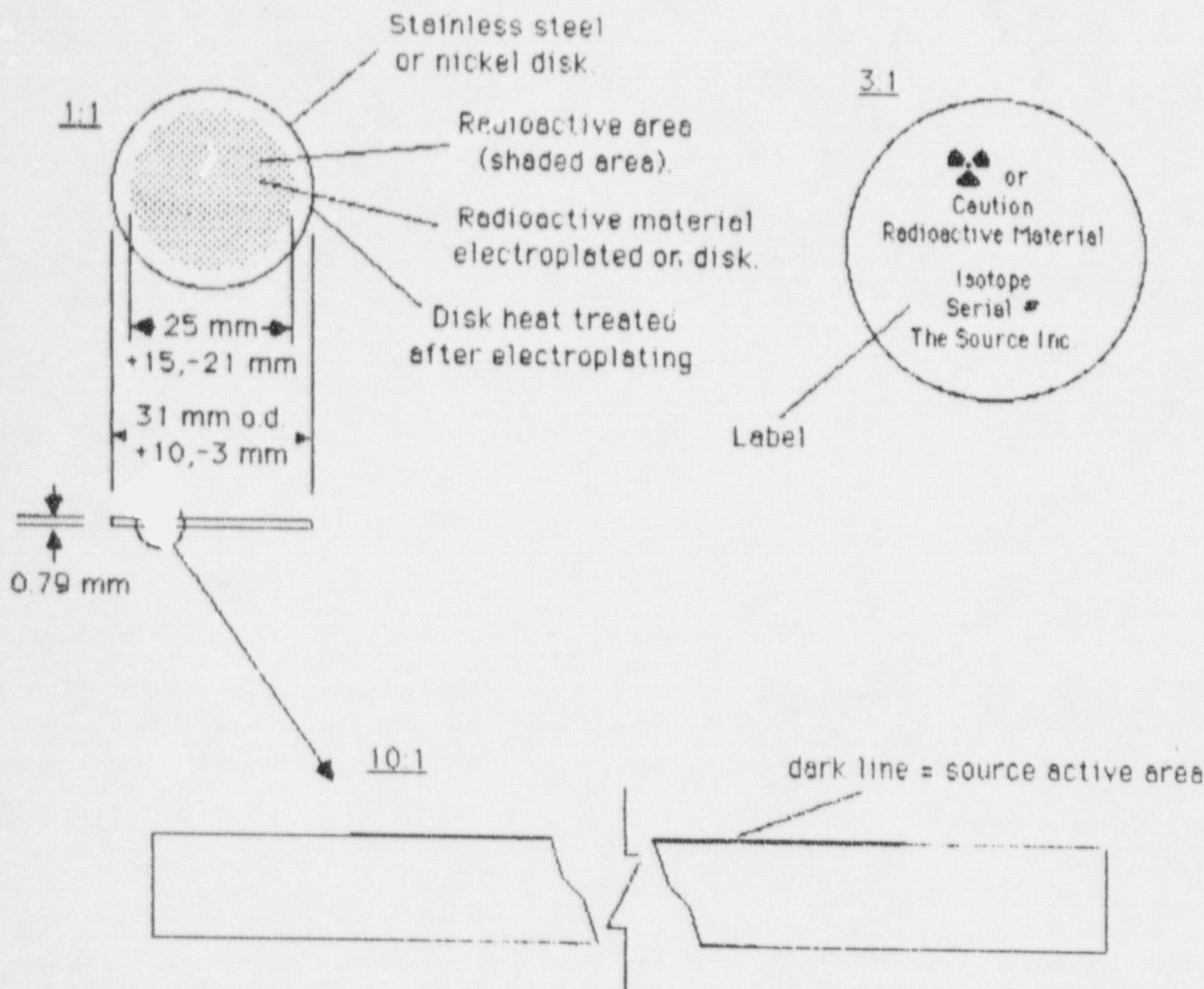
Drawing #:



Radiation Standards and Check Sources
2810 Siler Lane, Santa Fe, NM 87501
(505) 473-9538

Top View Of Disk

Bottom View Of Disk



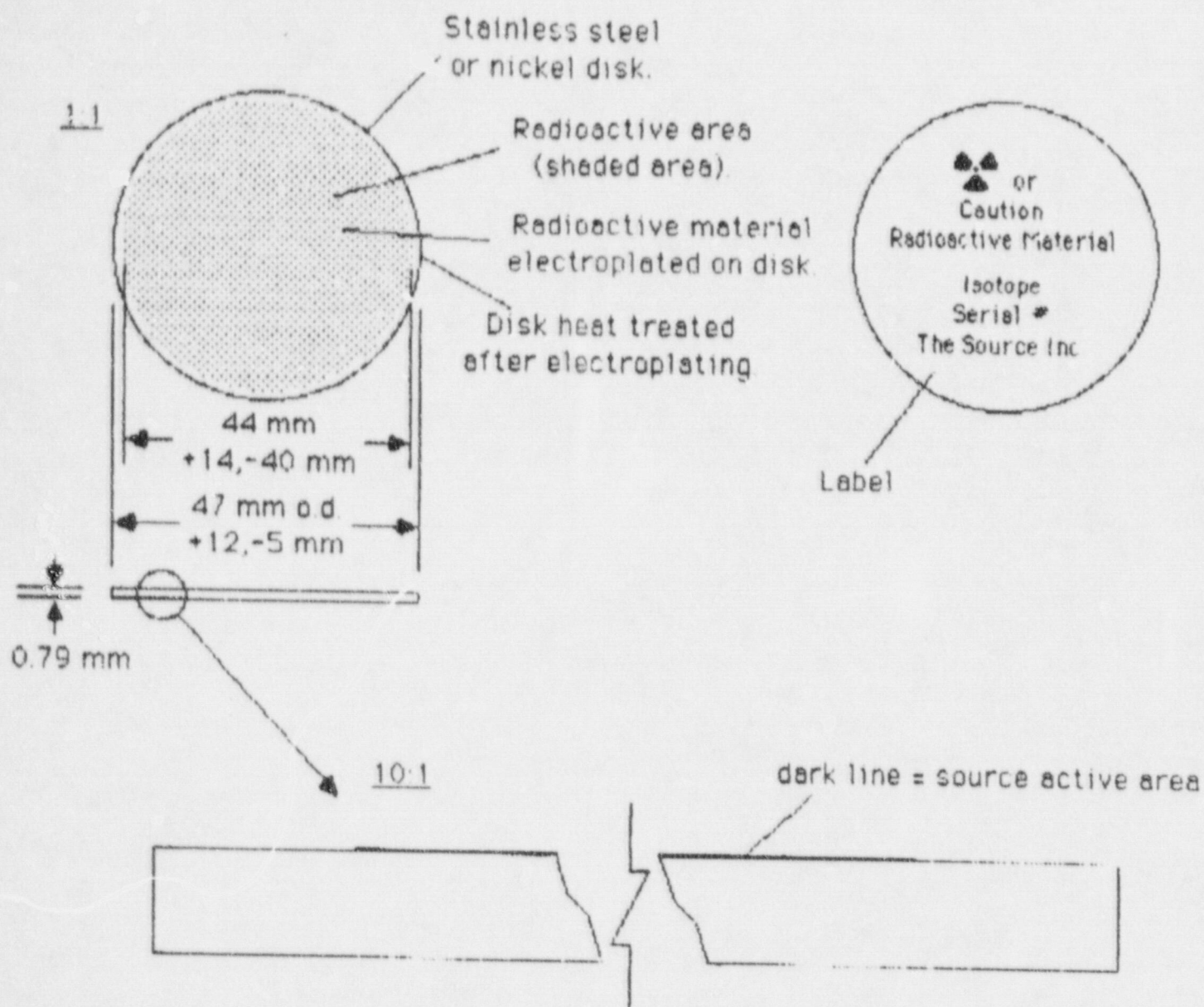
31 mm TS-241-Alpha Electroplated Source			
Drawn:	Date	Name	
Approved:			
Scale: 1:1 3:1 10:1			
Material: Stainless Steel or Nickel			Drawing #:

THE SOURCE INC.

Radiation Standards and Check Sources
 2810 Siler Lane, Santa Fe, NM 87501
 (505) 473-9538

Top View Of Disk

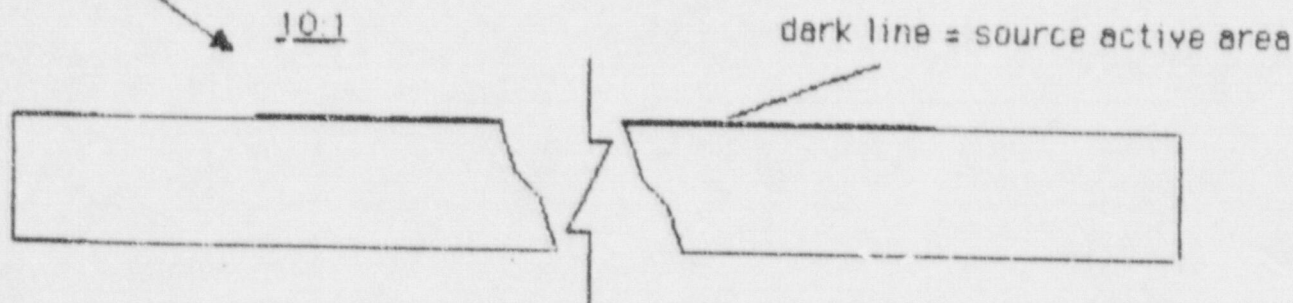
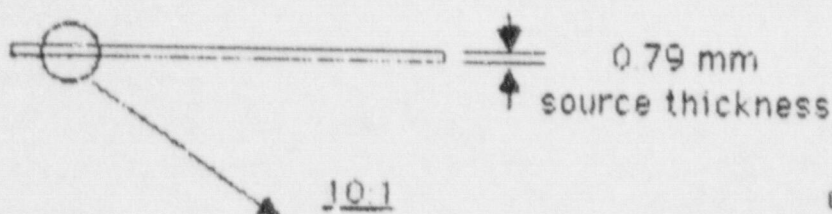
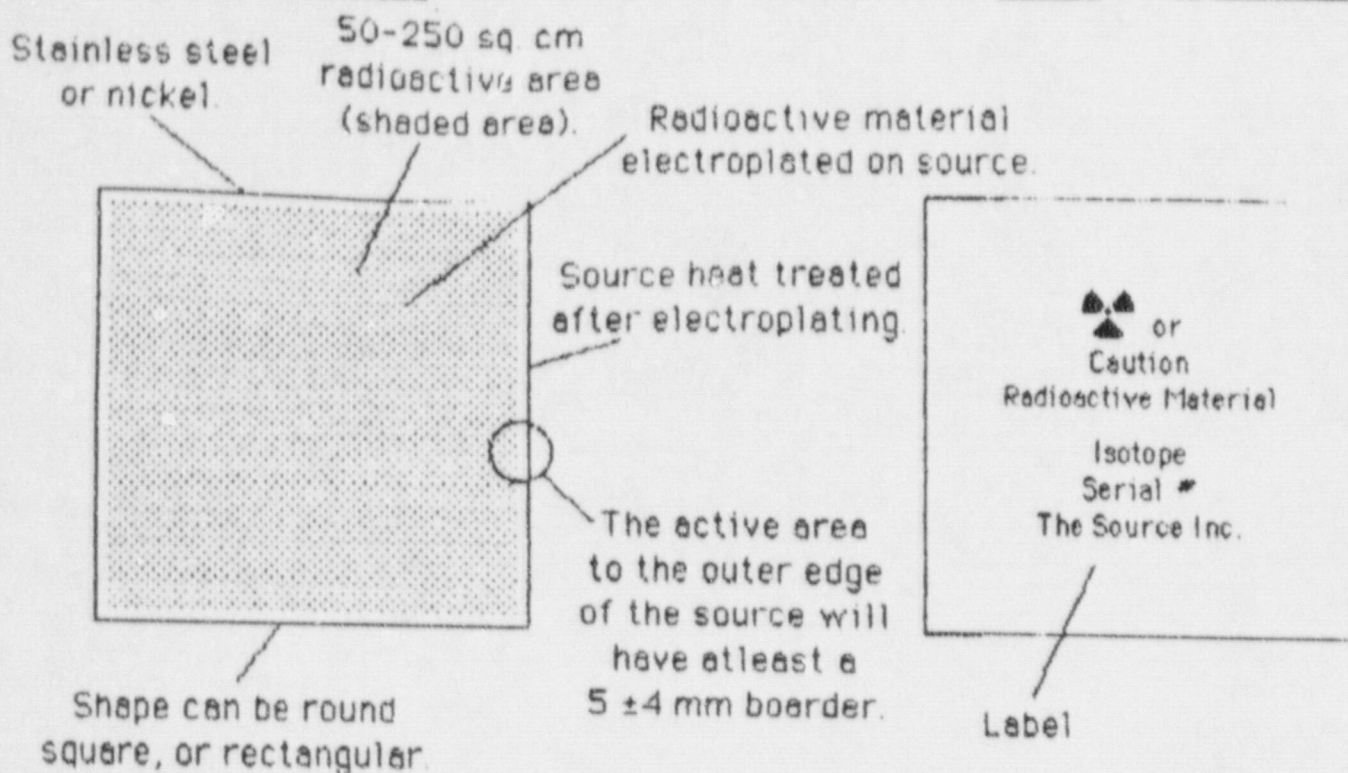
Bottom View Of Disk



47 mm TS-241-Alpha Electroplated Source		
Date	Name	
Drawn		
Approved:		
Scale: 1:1	10:1	Drawing #
Material: Stainless Steel or Nickel		



Radiation Standards and Check Sources
2810 Siler Lane, Santa Fe, NM 87501
(505) 473-9538

Top View Of DiskBottom View Of Disk

50-250 sq.cm TS-241-Alpha Electroplated Source

	Date	Name
Drawn:		
Approved:		
Scale:	10:1	
Material:	Stainless Steel or Nickel	

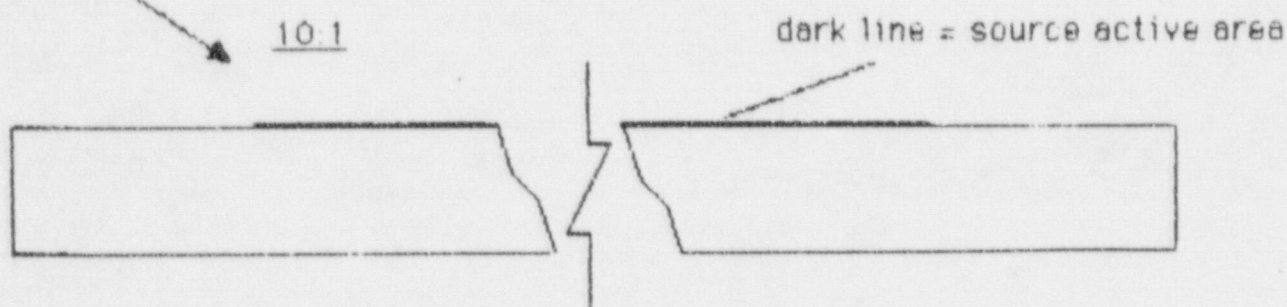
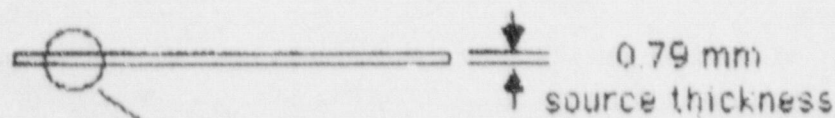
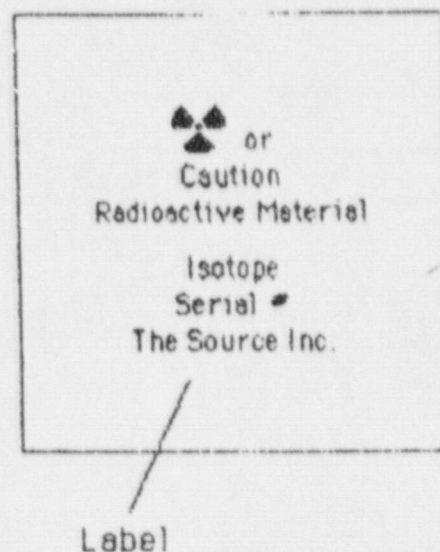
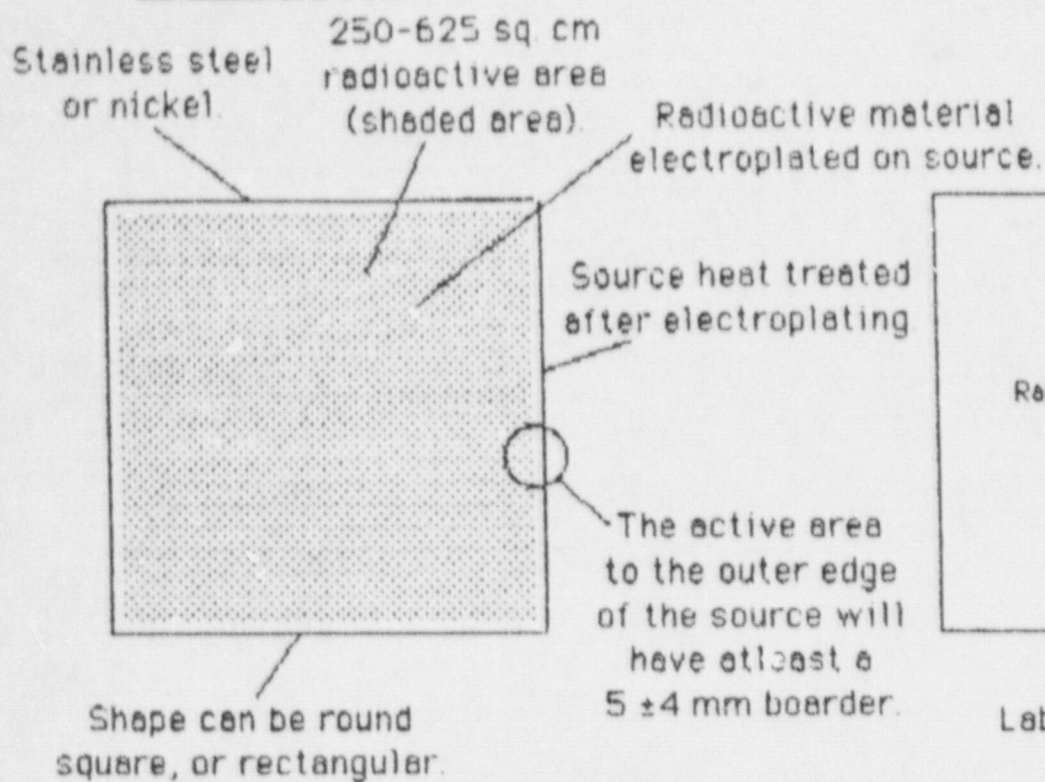
Drawing #:




Radiation Standards and Check Sources
2810 Siler Lane, Santa Fe, NM 87501
(505) 473-9538

Top View Of Disk

Bottom View Of Disk



250-625 sq. cm TS-241-Alpha Electroplated Source			
Date	Name		
Drawn:			
Approved:			
Scale:	10:1	Drawing #:	Radiation Standards and Check Sources 2810 Siler Lane, Santa Fe, NM 87501 (505) 473-9538
Material:	Stainless Steel or Nickel		



BRUCE KING
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT
Harold Runnels Building
1190 St. Francis Drive
Santa Fe, New Mexico 87503

JUDITH M. ESPINOSA
SECRETARY

RON CURRY
DEPUTY SECRETARY

one SSD
issued
4/9/91

TELECOPIER TRANSMITTAL

DATE: 4 April 91 Time: _____ Page _____ OF _____
(inc. transmittal)

PLEASE DELIVER THE FOLLOWING PAGES TO:

TO: Lloyd Baling, U.S. NRC

LOCATION: Washington, D.C.

Telephone Number: _____

Telecopier Number: (301) 492-0395

FROM: Bill Floyd

LOCATION: New Mexico Dept. of Environment

Telephone: _____

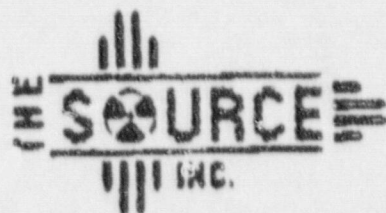
TELECOPIER NUMBER: (505) 827-2836

Comments: Lloyd-

Duke Ortiz has made modification
as per your request. Do
any additional changes need to
be made?

Thanks.

Bill Floyd



Radiation standards and check sources
2810 Siler Lane, Santa Fe, NM 87501
(505)473-9538 FAX(505)473-5805

TO: Bill Floyd.

FROM: Mike Ortiz.

APR 17 1991

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE

NO NM-780-S-104 5

Date: April 1, 1991

Page 1 of 4

SOURCE TYPE: Alpha Calibration Sources

MODEL: TS-241-alpha

MANUFACTURER/DISTRIBUTOR: The Source, Inc.
2610 Siler Lane
Santa Fe, NM 87501

ISOTOPE: ^{241}Am

MAXIMUM ACTIVITY: 5.0 microcuries

LEAK TEST FREQUENCY: When the surface of the source has been damaged or in accordance with US NRC OR Agreement state regulations.

PRINCIPAL USE: Calibration and check sources with activity less than 30uCi(T)

CUSTOM DEVICE: No

CUSTOM USER: None

REC'D APR 17 1991

NO. NM-780-S-100-5

Date: April 1, 1991

Page 2 of 4

DESCRIPTION:

A. The type-241-alpha calibration and check sources are electroplated on stainless steel with activities up to 100 nanocuries or nickel with activities >100 nanocuries up to 5 microcuries. The material is heat treated after electroplating. This sealed source is used to check calibration of alpha radiation detection instruments.

B. Source dimensions are varying depending on the size of source ordered by the customer. The dimensions are shown in the generic diagram for each of the various sizes.

C. The sealed source is $<30\text{uCi}$ and does not fall under ANSI N542 Table 4 Performance Requirements or ISO-2919 Annex C Performance Requirements because the source is less than 30uCi . The source meets 10CFR32.102 prototype test. All sources are leak tested prior to transfer. A leak test certificate is issued with the sources.

LABELING:

The source is permanently marked as shown in attached diagram. All certified sources are placed in a wooden box with labeling indicating Caution Radioactive Material, isotope, amount of activity and date of activity. The outside of the wooden box has a label of Nuclide and Caution Radioactive Material. Check sources are not placed in a wooden box, but are in a plastic bag with label indicating Caution Radioactive Material, isotope and nominal activity. Also included in the shipment is the following statement: "The receipt, possession, use and transfer of this source, model _____, serial # _____, are subject to a general license and the regulations of the U.S. Nuclear Regulatory Commission or of a state with which the Commission has entered into an agreement for the exercise of regulatory authority. Do not remove this label. CAUTION-RADIOACTIVE MATERIAL-THIS SOURCE CONTAINS AMERICIUM 241. DO NOT TOUCH RADIOACTIVE PORTION OF THIS SOURCE."

DIAGRAM: see attached drawing.

REC'D APR 17 1991

NO. NM-780-S-100-S

Date: April 1, 1991

Page 3 of 4

CONDITION OF NORMAL USE

The sealed source is intended for use in the calibration check of alpha detection instrumentation. The source should be handled with forceps to avoid finger prints or scratching the radioactive surface of the source.

PROTOTYPE TESTING

Conforms to 10CFR32.102 PROTOTYPE TEST FOR CALIBRATION OR REFERENCE SOURCES CONTAINING AMERICIUM 241.

EXTERNAL RADIATION

The maximum external radiation levels in mr/hr
at 12 INCHES $< 0.5 \text{ mr/hr}$

QUALITY ASSURANCE AND CONTROL

The manufacture maintains an acceptable quality control/assurance program for manufacturing, procurement and final acceptance of each sealed source.

LIMITATION AND/OR OTHER CONSIDERATIONS OF USE

A. The sealed source may be distributed to general licensees of agreement states or, specific or general licensees with a U.S. NRC license. Leak testing is performed after preparation at the facility and a certificate of leak test is provided with sealed sources.

B. Storage: Store in cool, dry area in the original container.

C. Wipe Test: When the surface of the source has been damaged or in accordance with US NRC OR Agreement State Regulations.

D. Cleaning: Use a tissue moistened with rubbing alcohol but avoid acetone and similar strong solvents.

E. Disposal: Determined by licensing authority

F. These sources should not be subjected to conditions exceeding those specified in ANSI 77C22212.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAF. EVALUATION OF SEALED SO.

REC'D APR 17 1991

NO. NM-780-S-104-S

Date: April 1, 1991
Page 4 of 4

SAFETY ANALYSIS:

The ^{241}Am Americium source based on our review of the information and test data completed are acceptable for licensing purposes. They have passed the tests for ^{241}Am Americium in accordance to 10CFR32.102.

CautionContains Radioactive Material which, although beyond the scope of MSDS requirements, should be considered the principal hazard. This material should be handled only by trained individuals in conformance with 10 CFR requirements.

Date:

Concurrence.

Date

Reviewed by:

Issued Agency Agreement State

No. NM-780-S-100-S

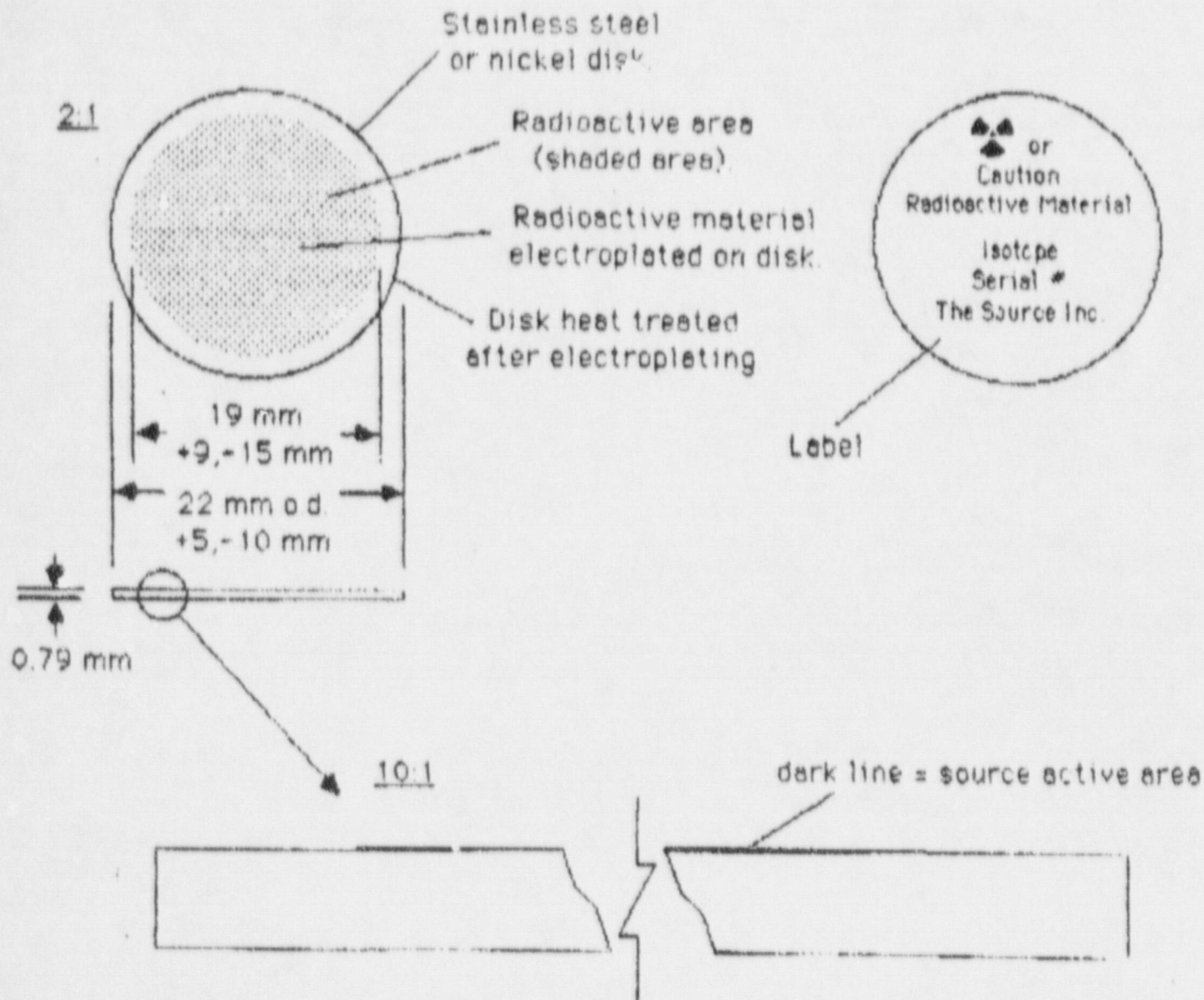
April 1, 1991

Attachment # 1

APR 17 1991

Top View Of Disk

Bottom View Of Disk

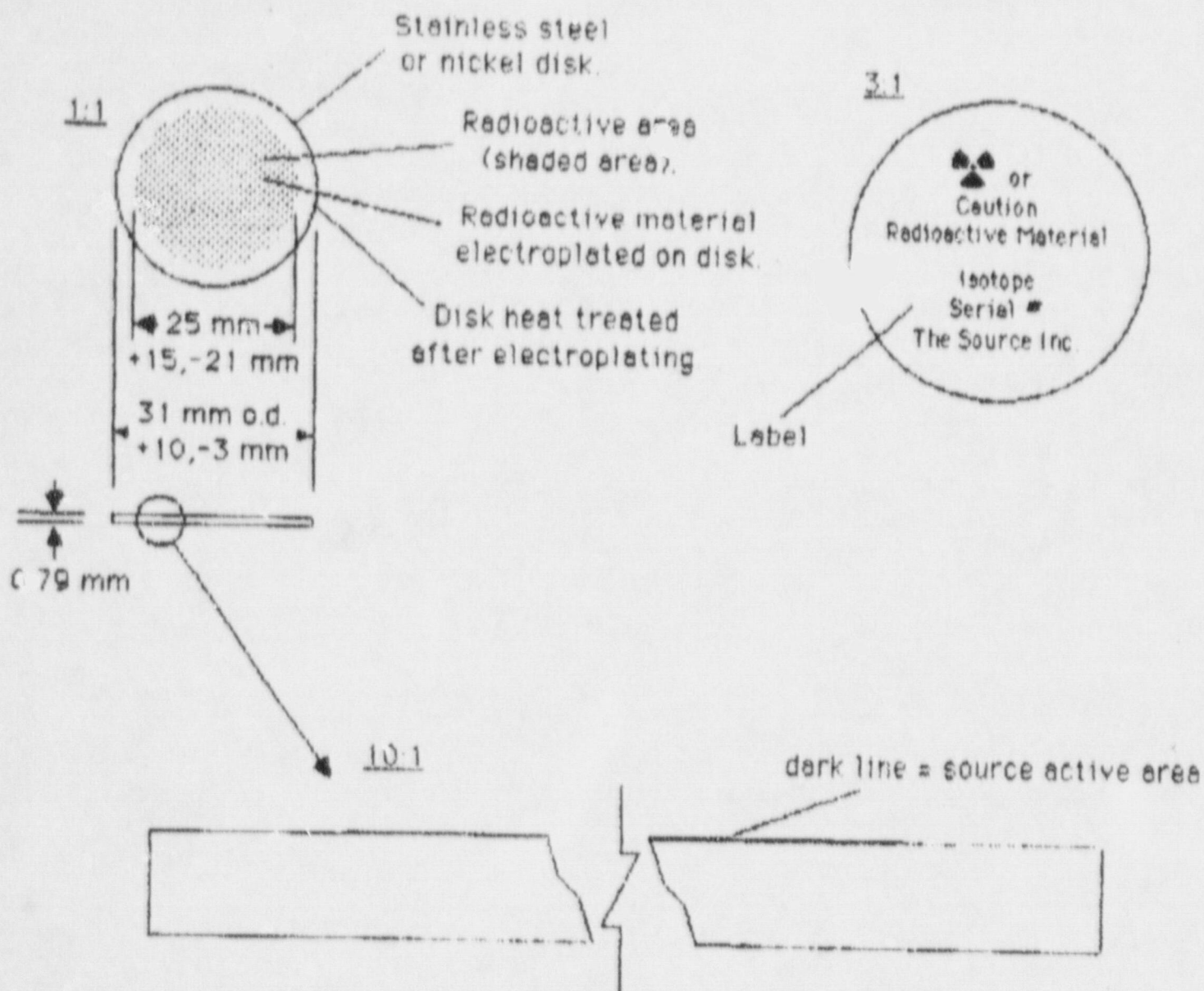


22 mm TS-241-Alpha Electroplated Source			
	Date	Name	
Drawn			
Approved			
Scale:	2:1	10:1	Drawing #
Material: Stainless Steel or Nickel			

THE SOURCE INC.

Radiation Standards and Check Sources
2810 Siler Lane, Santa Fe, NM 87501
(505) 473-9538

APR 04 1991 15:27 NM-780-S-100-S

Top View Of DiskBottom View Of Disk

31 mm TS-241-Alpha Electroplated Source

Date	Name
Drawn:	
Approved:	
Scale: 1:1 3:1 10:1	
Material: Stainless Steel or Nickel	

Drawing #



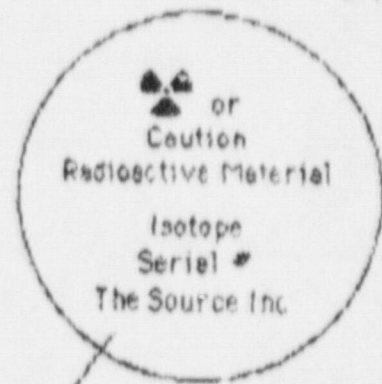
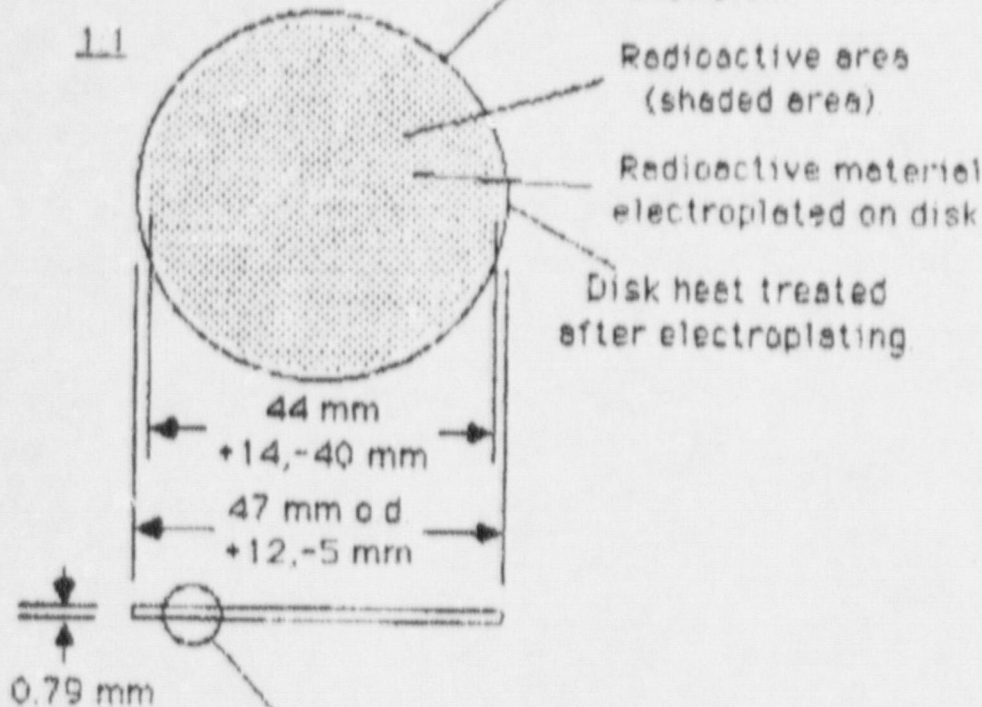
Radiation Standards and Check Sources
2810 Silver Lane, Santa Fe, NM 87501
(505) 473-9538

Top View Of Disk

Bottom View Of Disk

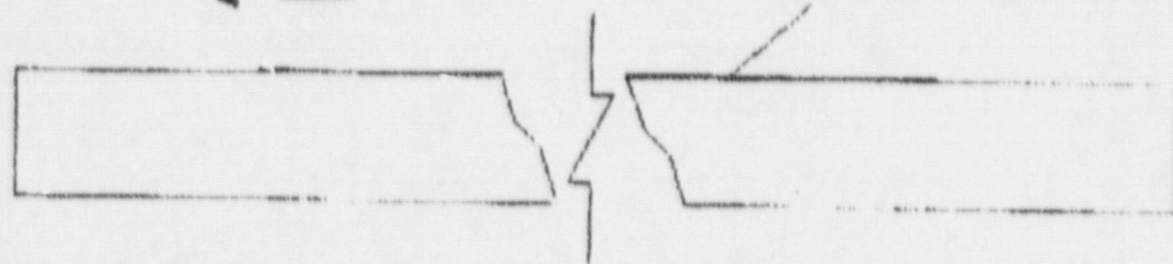
Stainless steel
or nickel disk.

REC'D APR 17 1991



Label

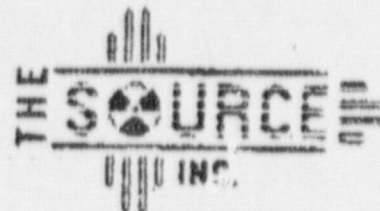
dark line = source active area



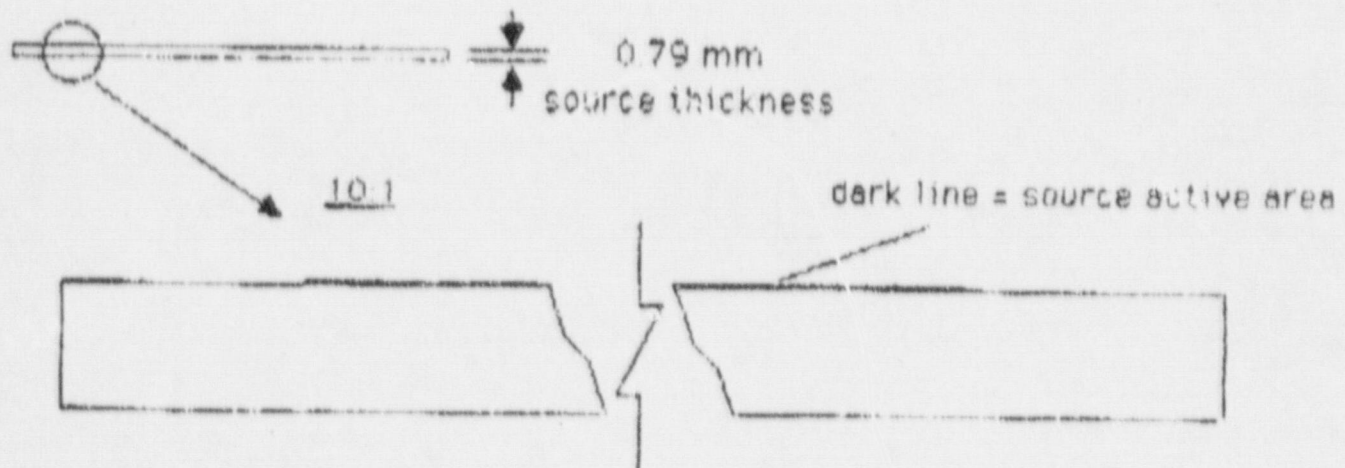
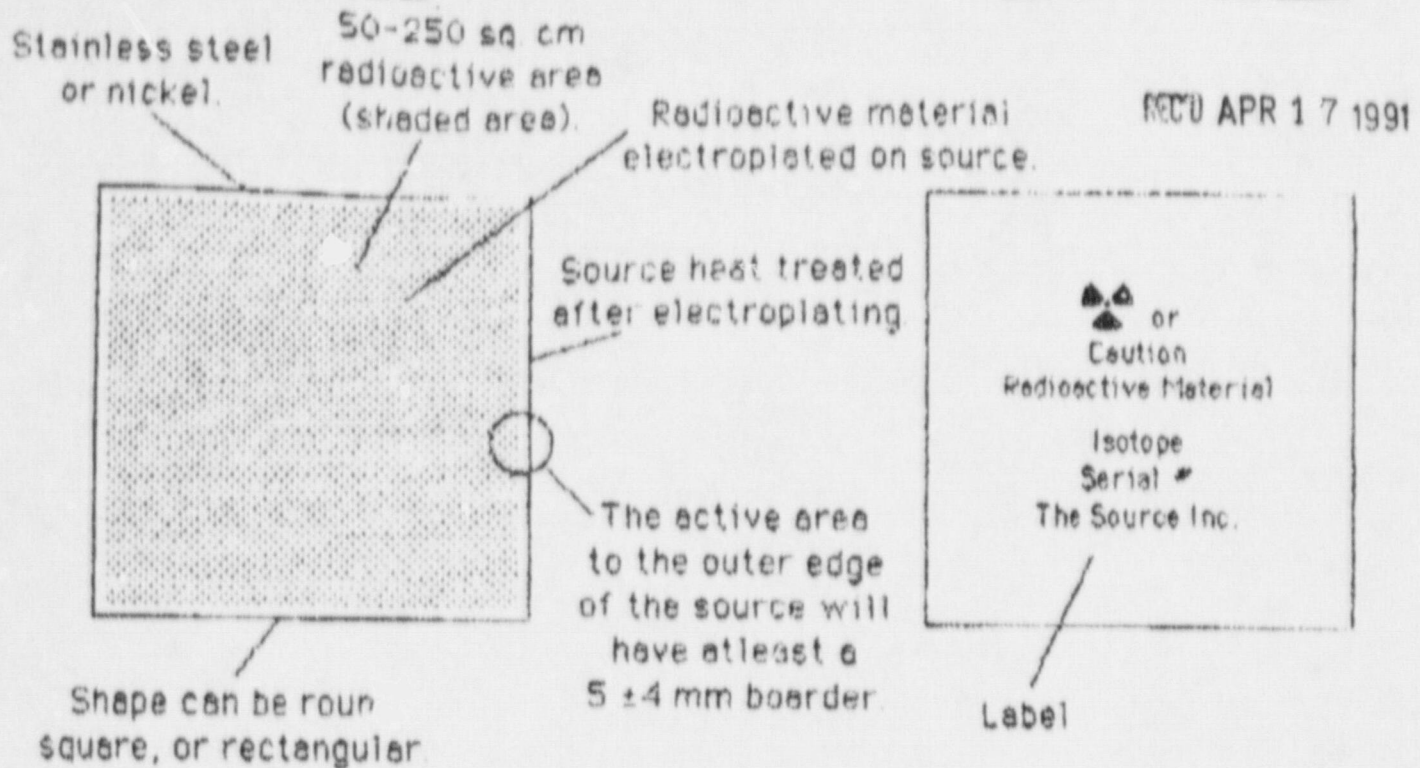
47 mm TS-241-Alpha Electroplated Source

	Date	Name
Drawn		
Approved:		
Scale:	1:1	10:1
Material:	Stainless Steel or Nickel	

Drawing



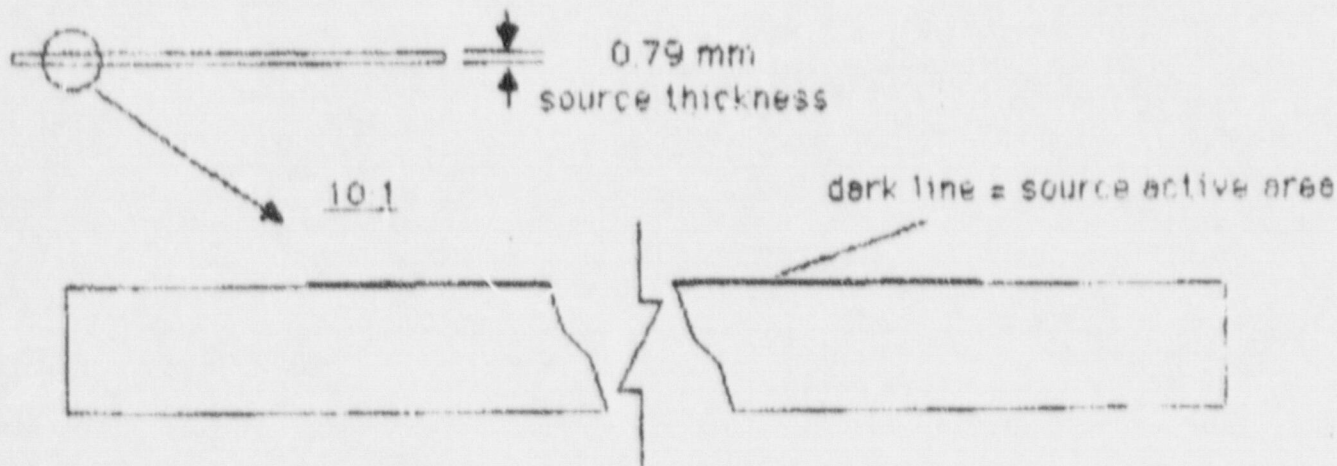
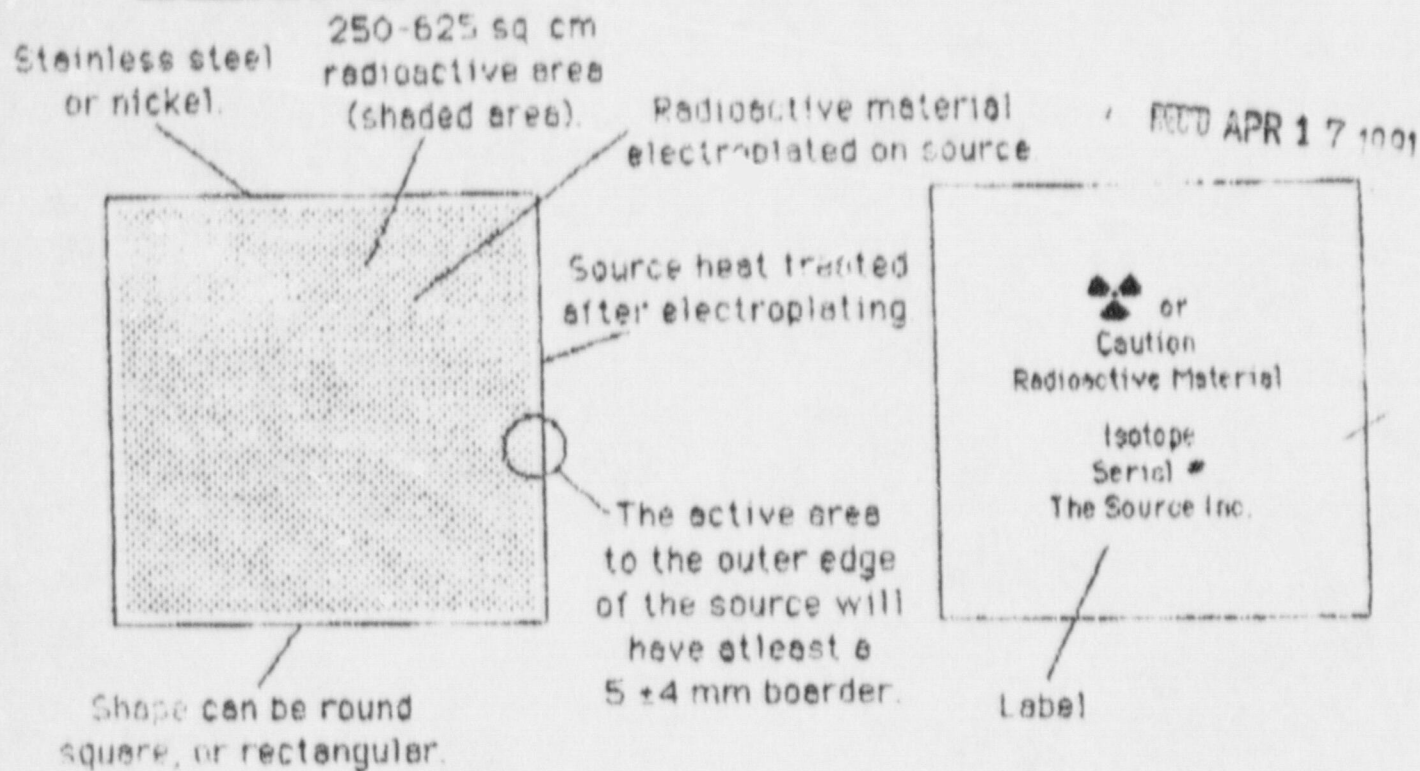
Radiation Standards and Check Sources
2810 Siler Lane, Santa Fe, NM 87501
(505) 473-9538

Top View Of DiskBottom View Of Disk

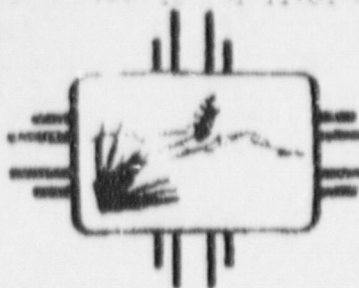
50-250 sq.cm TS-241-Alpha Electroplated Source			<p>Radiation Standards and Check Sources 2810 Silver Lane, Santa Fe, NM 87501 (505) 473-9538</p>
Date	Name		
Drawn:			
Approved:			
Scale: 10:1	Drawing #		
Material: Stainless Steel or Nickel			

Top View Of Disk

Bottom View Of Disk



250-625 sq.cm TS-241-Alpha Electroplated Source			
Date	Name		
Drawn:			
Approved:			
Scale	10:1	Drawing #:	
Material: Stainless Steel or Nickel			Radiation Standards and Check Sources 2810 Siler Lane, Santa Fe, NM 87501 (505) 473-9538



New Mexico Health and Environment Department

P.1 File

BRUCE KING
Governor

DENNIS BOYD
Secretary

MICHAEL J. BURKE
Deputy Secretary

RICHARD MITZELT
Director

TELECOPIER TRANSMITTAL

DATE: 15 March 1991 Time: _____ Page 1 OF 11
(inc. transmittal)

PLEASE DELIVER THE FOLLOWING PAGES TO:

TO: Lloyd Boling, NRC

LOCATION: Washington, DC

Telephone Number: _____

Telecopier Number: (301) 492-0395

FROM: Bill Floyd

LOCATION: New Mexico Environmental Improvement Division

Telephone: _____

TELECOPIER NUMBER: (505) 827-2836

Comments: Lloyd -
attached are the modified
SS&D sheets for "The Source"
Please review and comment.
Thanks.
Bill Floyd

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

RECEIVED
JUL 25 1988
Community Services Bureau

NO: NI165751576 Date: July 18, 1988 Page 1 of 3

SOURCE TYPE ²³⁵ Uranium is electroplated on aluminum disk.

MODEL: S-U-235

ISOTOPE ²³⁵ Uranium MAXIMUM ACTIVITY: 25mg U235

SEALED SOURCE MODEL DESIGNATION: S-U-235 used to check calibration of alpha radiation detection instruments.

LEAK TEST FREQUENCY: 24 months

MANUFACTURER/DISTRIBUTOR: The Source
2889 Industrial Rd.
Santa Fe, NM 87501

PRINCIPAL USE: Calibration check of alpha radiation detection instruments.

CUSTOM DEVICE: No

CUSTOM USER: None.

DESCRIPTION:

The Source Model S-U-235 is an alpha calibration source with the ²³⁵ Uranium electroplated on aluminum disk followed by gold plating to encapsulate the surface of the source. The aluminum vary in size from 22mm to 107mm. This sealed source is used to check calibration of alpha radiation detection instruments.

LABELING:

The source is etched with ²³⁵ Uranium serial number and date. The source is placed in wooden or plastic box with labeling indicating Caution Radioactive Material, Isotope, Amount of activity and date of calibration. The outside of the Box has a label ²³⁵ Uranium and Caution Radioactive Material. The following statement is on the outer container "The receipt, possession use and transfer of this source, Model _____, Serial _____, are subject to a specific license and the regulations of the US NRC or of a State with which the Commission has entered into an agreement for the exercise of regulatory authority."

DIAGRAM: see attached drawing

CONDITION OF NORMAL USE:

The Sealed Source is intended for use in the calibration check of alpha detection instrumentation. The source should be handled with forceps to avoid finger prints or scratching the surface of the source.

PROTOTYPE TESTING:

A single source was leak tested by wiping the surface of the source with alcohol, followed by water at pH6, and dry wiped using tissue. It was found that after flaming the source <0.005uCi was removed from the surface of the each source.

EXTERNAL RADIATION:

The maximum external radiation levels in mr/hr measured by The Source were:

at 5 cm	<25mr/hr
at the surface	~50mr/hr

QUALITY ASSURANCE AND CONTROL:

The Source has a specification sheet submitted with the license application which includes wipe test, handling and preparation of the sealed source.

LIMITATION AND/OR OTHER CONSIDERATIONS OF USE:

The sealed source may be distributed to specific licensees of Agreement States or US NRC. Leak testing is performed after preparation at the facility and a certificate of leak test is provided with sealed sources. Some Agreement States may require specific licensure for distribution of naturally occurring radioactive materials (NORM);(i.e. Radium, Thorium, Uranium and Yttrium).

SAFETY ANALYSIS:

The sealed ²³⁵Uranium source is not a health risk to person using the source for the purpose intended (i.e. calibration of radiation detection instrumentation).

NO. NM6575157G

Date:

Reviewed by:

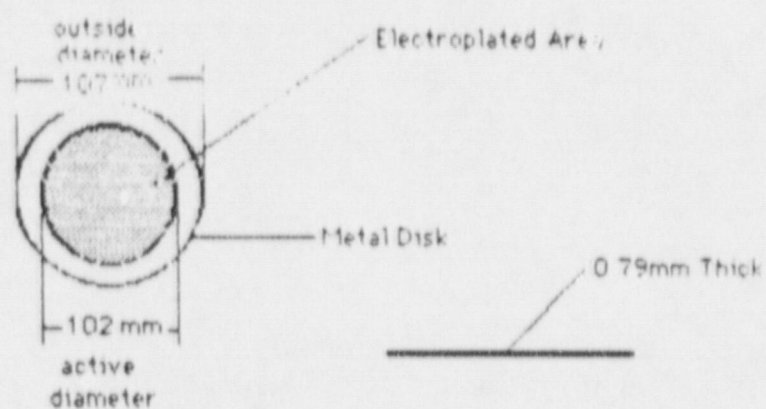
Date:

Issued by:

Model S-U-235

Isotope U235

Max. Activity 25mgU235



The Source, 2389 Industrial Rd. , Santa Fe, NM 87501

Specification Sheet

The Source, 2889 Industrial Rd., Santa Fe, NM 87501

Model No.: S-U-235

Date: 07-18-88

Approved: M.A.O.

Page 1 of 2

General Description

²³⁵Uranium is electroplated on aluminum disk. The source is used as an alpha check source.

Isotope

²³⁵Uranium

Activity Range

25mg of U235

Certification

The source is certified and a certificate of calibration is issued reporting the activity and its uncertainty.

Uniformity

The uniformity of the source is checked by rotating the source in its counting chamber and observing the difference in its emission rate. Uniformity can be checked by radiographic technique.

Degraded Energy

The alpha energy of the source is degraded because of flaking for adherence. No guarantee can be made for control of degraded energy.

Backing Material

The backing material is aluminum.

License Requirements

Requires a specific license from the NRC or an agreement state. A copy of the license or signed statement with the license number and date of expiration is required before shipment can be made.

Method of Calibration or Activity Check

The source alpha emission are measured in a scintillation counter.

Coincidence Factor

A coincidence factor is applied to correct for coincidence loss when applicable due the alpha emission rate.

Backscatter Factor

A backscatter factor of 1.5% is assumed in the measurement of the sources 2 pi emission rate.

Dimensions

The total disk diameter is from 22.23mm to 107mm.

Radiation Type

The alpha emission rate off the surface of the source is measured and certified.

Swipe Testing

The source is swipe tested to insure the removable alpha activity is less than 0.005uCi or less than 10% of the total activity of the source.

Application

The source is used for checking efficiencies or responses of alpha detection instruments.

Suggested Recalibration

The source should be calibrated yearly.

Handling Instructions

The source should be handled with teflon or rubber tip forceps to avoid scratching or finger prints causing attenuation of the alpha emission from the surface of the source. Store the source in a dry non-oxidizing atmosphere at room temperature.

NBS Traceability

The Source uses NBS traceable or NBS calibrated standards to calibrate its instruments. The sources calibrated by us are then referenced to these standards.

Other

Source includes the following:

- a- Caution Radioactive Material Decal
- b- Isotope Decal
- c- Special container

REL RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO.: NM16575156G Date: Nov. 18, 1986 Page 1 of 3

SOURCE TYPE: $^{241}\text{Americium}$ is electroplated on stainless steel disk

MODEL: S-Am-22

ISOTOPE: $^{241}\text{Americium}$ MAXIMUM ACTIVITY: 0.2 microcurie

SEALED SOURCE MODEL DESIGNATION: S-Am-22 used to check calibration of alpha radiation detection instruments.

LEAK TEST FREQUENCY: 24 months

MANUFACTURER/DISTRIBUTOR: The Source
2889 Industrial Rd.
Santa Fe, NM 87501

PRINCIPAL USE: Calibration check of alpha radiation detection instruments.

CUSTOM DEVICE: No

CUSTOM USER: None

DESCRIPTION:

The Source Model S-Am-22 is an alpha calibration source with the $^{241}\text{Americium}$ electroplated on stainless steel disk ~22mm outside diameter and ~19mm active diameter and ~0.79mm thick. This sealed source is used to check calibration of alpha radiation detection instruments.

LABELING:

The source is etched with ^{241}Am serial number and date. The source is placed in wooden or plastic box with labeling indicating Caution Radioactive Material, Isotope, Amount of activity and date of calibration.

The outside of the Box has a label ^{241}Am and Caution Radioactive Material. The following statement is on the outer container "The receipt, possession use and transfer of this source, Model _____, Serial _____, are subject to a general license and the regulations of the US NRC or of a State with which the Commission has entered into a agreement for the exercise of regulatory authority."

DIAGRAM: see attached drawing.

CONDITION OF NORMAL USE:

The Sealed Source is intended for use in the calibration check of alpha detection instrumentation. The source should be handled with forceps to avoid finger prints or scratching the surface of the source.

PRCTOTYPE TESTING:

A single source was leak tested by wiping the surface of the source with alcohol, followed by water at pH6, and dry wiped using tissue. It was found that after flaming the source <0.005uCi was removed from the surface of the each source.

EXTERNAL RADIATION:

The maximum external radiation levels in mr/hr measured by The Source were:

at 5 cm	<0.5mr/hr
at the surface	~70mr/hr

QUALITY ASSURANCE AND CONTROL:

The Source has a specification sheet submitted with the license application which includes wipe test, handling and preparation of the sealed source.

LIMITATION AND/OR OTHER CONSIDERATIONS OF USE:

The sealed source may be distributed to general licensees of Agreement States or US NRC. Leak testing is performed after preparation at the facility and a certificate of leak test is provided with sealed sources. Some Agreement States may require specific licensure for distribution of naturally occurring radioactive materials (NORM);(i.e. Radium, Thorium, Uranium and Yttrium).

AFETY ANALYSIS.

The sealed ²⁴¹Ammercium source is not a health risk to person using the source for the purpose intended (i.e. calibration of radiation detection instrumentation).

NO.: NM65751566

Date:

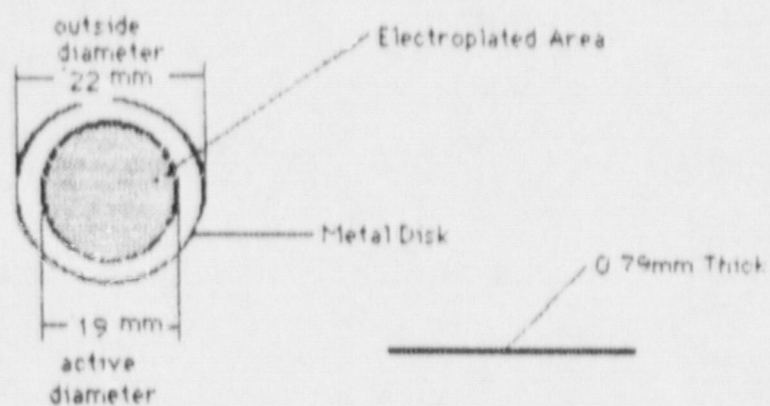
Reviewed by:

Date:

Issued by:

Model S-Am-22

Isotope ^{241}Am Max Activity 0.2uCi



The Source, 2337 Industrial Rd., Santa Fe, NM 87501

Specification Sheet

he Source, 2889 Industrial Rd., Santa Fe, NM 87501

Model No.: S-Am-22

Date: 06-19-87 Approved: M.A.O.

Page 1 of 2

General Description

²⁴¹Americium is electroplated on stainless steel disk. The source is used as an alpha standard.

Isotope

²⁴¹Americium

Activity Range

0.0005 to 0.2 microcurie (uCi)

Certification

The source is certified and a certificate of calibration is issued reporting the activity and its uncertainty.

Uniformity

The uniformity of the source is checked by rotating the source in its counting chamber and observing the difference in its emission rate. Uniformity can be checked by radiographic technique.

Degraded Energy

The alpha energy of the source is degraded because of flaking for adherence. No guarantee can be made for control of degraded energy.

Backing Material

The backing material is stainless steel.

License Requirements

Requires a license from the NRC or an agreement state. A copy of the license or signed statement with the license number and date of expiration is required before shipment can be made.

Method of Calibration or Activity Check

The source alpha emission are measured in a windowless gas proportional counter at its plateau voltage with a 2pi efficiency of 100%.

Coincidence Factor

A coincidence factor is applied to correct for coincidence loss when applicable due the alpha emission rate.

Backscatter Factor

A backscatter factor of 1.5% is assumed in the measurement of the sources 2 pi emission rate.

Dimensions

The total disk diameter is 22.23mm with an active diameter of approximately 19.1mm.

Radiation Type

The alpha emission rate off the surface of the source is measured and certified.

Swipe Testing

The source is swipe tested to insure the removable alpha activity is less than 0.005uCi or less than 10% of the total activity of the source.

Application

The source is used for checking efficiencies or responses of alpha detection instruments.

Suggested Recalibration

The source should be calibrated yearly.

Handling Instructions

The source should be handled with teflon or rubber tip forceps to avoid scratching or finger prints causing attenuation of the alpha emission from the surface of the source. Store the source in a dry non-oxidizing atmosphere at room temperature.

NBS Traceability

The Source uses NBS traceable or NBS calibrated standards to calibrate its instruments. The sources calibrated by us are then referenced to these standards.

Other

Source includes the following:

- a- Caution Radioactive Material Decal
- b- Isotope Decal
- c- Special container