No.: NR-8008-S-801-S (Previously NR-459-S-101-S)	<u>DATE:</u> June 3, 2004 <u>PAGE 1 OF 4</u>
SOURCE TYPE: Sealed Source	
MODEL: 4F6Y	
MANUFACTURER/DISTRIBUTOR:	Minnesota Mining and Manufacturing Company TLAAP Building 590 New Brighton, MN 55112
	Successor: 3M Corporate Health Physics 3M Center, Building 220-3W-06 St. Paul, MN 55133-3283
<u>ISOTOPE:</u> Cesium-137 <u>MAXI</u>	MUM ACTIVITY: 25 mCi (0.925 GBq)
<u>LEAK TEST FREQUENCY:</u> 6 mo	nths
PRINCIPAL USE: (T) Instr	uctional Aid
CUSTOM SOURCE:	YESX NO

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SOURCE TYPE: Sealed Source

DESCRIPTION:

The sealed source was constructed by placing a smaller diameter capsule containing the Cesium-137 microspheres into a larger capsule to give the overall dimensions of 0.25" (6.4 mm) diameter and 0.69 \pm 0.05" (17.5 mm \pm 1.3 mm) in length. A plug was inserted to fill the void space and was tungsten inert gas welded to seal the Type 316 stainless steel capsule.

LABELING:

The capsule was engraved with the serial number and at 180^{B} from the serial number was engraved Cesium-137. Space limitation prevented any further labeling.

DIAGRAM:

See attachment.

CONDITIONS OF NORMAL USE:

Model 4F6Y was designed for the Federal Emergency Management Agency to train personnel in emergency handling of radioactive material.

PROTOTYPE TESTING:

The source had been tested in accordance with ANSI N542 and had obtained a Classification of 77C66646.

EXTERNAL RADIATION LEVELS:

The manufacturer obtained the following dose rates from a 20 millicurie loaded source.

 Contact
 30 cm
 30 cm

 3900 mr/hr
 75 mr/hr*
 90 mr/hr**

- * To meterface
- ** To active center of meter (detector)

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SOURCE TYPE: Sealed Source

QUALITY ASSURANCE AND CONTROL:

The Quality Control Group operated from policies and procedures described in the Static Control Systems Division Quality Manual (New Brighton Plant). The quality system was based on Mil-0-9858A guidelines on file with the NRC.

LIMITATIONS AND/OR OTHER CONSIDERATIONS OF USE:

- C This source shall be distributed only to specific licensees of the NRC or Agreement States.
- C Leak Testing: This source shall be leak tested at six-month intervals using techniques approved by the licensing authority and capable of detecting the presence of 0.005 mCi (185 Bq) of activity.
- C Handling, storage, use, transfer, and disposal: To be determined by the licensing authority.
- C The source shall not be subjected to environmental or other conditions of use which exceed ANSI Classification C66646 (ANSI N542-1977).
- C This product will no longer be commercially distributed but may still be approved for licensing purposes.
- C REVIEWER'S NOTE: Model 4F6Y, was originally registered under certificate no. NR-459-S-101-S. This model was inactivated on February 29, 1996. This registration certificate, no. NR-8008-S-801-S, supercedes all previous registration certificates for Model 4F6Y.

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SOURCE TYPE: Sealed Source

SAFETY ANALYSIS SUMMARY:

Based on our review of the information and test data contained in the references cited below, we conclude that Model 4F6Y sealed source is acceptable for licensing purposes.

Furthermore, we conclude that this source would be expected to maintain containment integrity for normal research, development, and industrial uses. Additionally, the source would be expected to maintain containment integrity under accident conditions applicable to the uses specified in this certificate.

REFERENCES:

The following supporting documents for the Model 4F6Y source are hereby incorporated by reference and are made a part of this registry document:

- Static Control System/3M letters dated September 24, 1982 and October 25, 1982, with enclosures thereto.
- 3M Health Physics Services letter dated August 6, 1991, with enclosures thereto.

ISSUING AGENCY:

U.S. Nuclear Regulatory Commission

Date:	<u>June 3, 2004</u>	Reviewer:	/RA/
			John P. Jankovich
Date:	June 3, 2004	Concurrence:	/RA/
			Xiaosong Yin

NO: NR-8008-S-801-S

DATE: June 3, 2004 ATTACHMENT 1

1 :

(Previously NR-459-S-101-S)