

DEPARTMENT OF THE AIR FORCE HEADQUARTERS AIR FORCE MEDICAL OPERATIONS AGENCY BROOKS AIR FORCE BASE, TEXAS

11Dec 1996

MEMORANDUM FOR HQ USNRC

ATTENTION: Ms Nancy Osgood

From: HQ AFMOA/SGPR

8901 18th St

Brooks AFB TX 78235-5217

SUBJECT: Renewal of Certificate of Compliance, Docket No. 71-4888, Patrick AFB FL

Request that the Nuclear Regulatory Commission renew Certificate of Compliance No. 4888, Revision 10, for the Sentinel 25 series, Radioisotope Thermoelectric Generators (RTGs) If you have any questions, please contact me at DSN 240-3331, (210) 536-3331; Fax DSN 240-4382, (210) 536-4382; or E-mail hicks j@msa01.brooks.af.mil.

JAMES M. HICKS, Capt, USAF, BSC

Chief, Technical Operations

James M. Hicks

USAF Radioisotope Committee Secretariat

Office of the Surgeon General

NTOI /



DEPARTMENT OF THE AIR FORCE

AIR FORCE TECHNICAL APPLICATIONS CENTER

22 October 1996

MEMORANDUM FOR HQ AFMOA/SGOR
ATTENTION: Capt Hicks

FROM: HQ AFTAC/CC

1030 South Highway A1A Patrick AFB FL 32925-3002

SUBJECT: Renewal of Certificate of Compliance (COC), Docket No. 71-4888

- 1. Please renew the subject document (attached) for our Sentinel 25 series radioisotope thermoelectric generators (RTGs). Request that you submit this renewal to the US Nuclear Regulatory Commission.
- 2. There have been no changes in design or procedures associated with this package since the previous submission; however, please make note of the following updated addresses.

Permit RSO

Alternate Permit RSO

HQ AFTAC/SEG 1030 South Highway A1A Patrick AFB FL 3925-3002 Technical Operations Division/SE 6000 Patrol Road, Building 1080 McClellan AFB CA 95652-1709

3. Should you require additional information, please contact my Radiation Safety Officer (RSO), Captain Craig L. Adams at (407) 494-4222 or DSN 854-4222. Should he be unavailable, you may contact my alternate RSO, Mr. George McAlister at (916) 643-2357 or DSN 633-2357. Thanks for your assistance.

OHN T. WIGDXOTON III

Colonel, USAF

Commander

Attachment:

16 Dec 93 Ltr, US-Nuclear Regulatory Commission

CC:

TOD/SE (Mr. McAlister)



UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

DEC 1 6 1993

STSB:BHW 71-4888

U.S. Department of the Air Force ATTN: Mr. George McAllister Technical Operations Center 6000 Patrol Road McClellan AFB, CA 95652-1709

Dear Mr. McAllister:

As requested by your application dated November 12, 1993, enclosed is Certificate of Compliance No. 4888, Revision No. 10, for the Model Nos. Sentinel-25A, LCG-25A, Sentinel-25B, LCG-25B, Sentinel-25C, LCG-25C, Sentinel-25C3, -25D, -25E, and -25F packages. This certificate supersedes, in its entirety, Certificate of Compliance No. 4888, Revision No. 9, dated December 24, 1991.

Changes made to the enclosed certificate are indicated by vertical lines in the margin.

Those on the attached list have been registered as users of these packages under the general license provisions of 10 CFR §71.12 or 49 CFR §173.471.

This approval constitutes authority to use these packages for shipment of radioactive material and for the packages to be shipped in accordance with the provisions of 49 CFR §173.471.

Sincerely,

Cass R. Chappell, Section Leader Cask Certification Section

Lors R. Choppell

Storage and Transport Systems Branch

Division of Industrial and Medical Nuclear Safety, NMSS

Enclosures:

1. Certificate of Compliance No. 4888, Rev. 10

2. Approval Record

cc w/encl: Mr. James K. O'Steen Department of Transportation

Registered Users

9312270014-1P

NRC FORM 618 (8-6) 10 CFR 71 7	CERTIFICATE FOR RADIOACTIVE	OF COMPLIAN J.S. NUC MATERIALS PACK ES	LEAR REGULA	TORY COMMISS
1.4. CERTIFICATE NUMBER	D. REVISION NUMBER	CPACKAGE IDENTIFICATION NUMBER	4. PAGE NUMBER	e. TOTAL NUMBER PA
1.a. CERTIFICATE NUMBER 4888	10	USA/4888/B()	1	4

2. PREAMBLE

- a. This certificate is issued to certify that the packaging and contents described in Item 5 below, meets the applicable safety standards set forth in Title 10, Code of Federal Regulations, Part 71, "Packaging and Transportation of Radioactive Material."
- b. This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country strough or into which the package will be transported.

THIS CERTIFICATE IS ISSUED ON THE BASIS OF A SAFETY ANALYSIS REPORT OF THE PACKAGE DESIGN OR APPLICATION

 ISSUED TO (Name and Address)
 ISSUED TO (Name and Address)

Department of the Air Force Technical Operations Division/CC 6000 Patrol Road McClellan AFB, CA 95652-1709 Teledyne Energy Systems applications dated April 26, 1985 and August 19, 1986, as supplemented.

C. DOCKET NUMBER

71-4888

4. CONDITIONS

This certificate is conditional upon fulfilling the requirements of 10 CFR Part 71, as applicable, and the conditions specified below.

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(a) Packaging

- (1) Model No.: Sentinel-25A, LCG-25A; Sentinel-25B, LCG-25B; Sentinel-25C, LCG-25C; Sentinel-25C3, -25D, -25E, and -25F
- (2) Description

The packages are thermoelectric generators. The major components include the main housing, tungsten shield, housing flange, and electrical connectors. The approximate dimensions and weights for the various Model Nos. are as follows:

Model No.	<u>Dimensions (inches)</u>	Weight (1bs.)
Sentinel-25A, LCG Sentinel-25B, LCG Sentinel-25C, LCG Sentinel-25C3 Sentinel-25D Sentinel-25E Sentinel-25F	G-25B 25.00 x 25	3000 3300 2000 1300 3300 4200 1400

9312270015 15

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- Packaging (Continued) (a)
- Drawings (3)

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The packagings are constructed	in accordance with the following Drawing
Model No.	Drawing Nos.
All Models	Isotopes, Inc. Drawing Nos.: 001-20000, Rev. E 001-20001, Rev. F 001-20002, Ref. F 001-20003, Sht. 1, Rev. B 001-80003
Sentine1-25A, LCG-25A	Martin Company Drawing Nos.: NO013100, Rev. A NO013108, Rev. D 001-40000, Rev. A
continol 25P ICC-25P	Isotopes, Inc. Drawing Nos.: 001-10000; Rev. B 001-70024, Rev. C 001-70025; Sht. 1, Rev. D 001-70033; Shts. 1 & 2, Rev. A 001-70036 001-80005 Martin Company Drawing Nos.:
Sentinel-25B, LCG-25B	N0013200, Rev. C 001-40012 Isotopes, Inc. Drawing Nos.: 001-70024, Rev. C 001-70025, Sht. 1, Rev. D 001-70033, Shts. 1 & 2, Rev. A 001-70036 001-80005
Sentinel-25C, LCG-25C	Martin Company Drawing Nos.: 001-40004, Rev. A 001-70010 001-70012, Rev. B 001-80004 Isotopes, Inc. Drawing Nos.: 001C10000, Sht. 1 Rev. D, & Sht. 3 001-70009, Rev. D
Sentinel-25C3	Isotopes, Inc. Drawing Nos.: 001C10000 Shts. 1 & 2, Rev. D 001-70009, Rev. D 001-70057, Rev. D

001-70060, Rev. C 001-40019, Rev. B

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Sentine1-25D

Martin Company Drawing No. 001-80004

Isotopes, Inc. Drawing Nos.: 001D10000 Shts. 1 & 2, Rev. C 001-70036 001-70033 Shts. 1 & 2, Rev. A 001-70025 Sht. 1, Rev. D 001-70024, Rev. C 001-40015, Rev. C 001-40006, Rev. B

Sentine1-25E

Isotopes, Inc. Drawing Nos.:
001E10000, Shts. 1 & 2, Rev. E, & Sht. 3
001-70039; Rev. C
001-70025, Sht. 1, Rev. D & Sht. 2
001-70024, Rev. C
001-40017, Shts. I & 2, Rev. D
001-40006, Rev. B

Sentine1-25F

Isotopes, Inc. Drawing Nos.:
001F10000, Shts. 1 & 2, Rev. H*
001-70070, Rev. C
001-70060, Rev. C
001-70009, Rev. D
001-40025, Rev. A

*As modified by Figure 1 of the April 26, 1985, application.

(b) Contents

- (1) Type and form of material
 - (i) Strontium 90 titanate doubly encapsulated in a Hastelloy or Uniloy fuel capsule which meet the requirements of special form radioactive material; or
 - (ii) Model No. Sentinel-25F may have, strontium fluoride doubly encapsulated in Hastelloy or Uniloy fuel capsule, with a Hastelloy C-276 liner which meets the requirements of special form radioactive material.

- (2) The maximum quantity of material per package 125,000 curies
- 6. A barrier (permitting the free circulation of air) must be provided with sufficient separation distance to ensure that the requirement of §71.43(g) will be met.

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- 7. Eye-bolts shall be removed or covered during transportation to prevent their use as tie-down devices of packages.
- 8. In addition to the requirements of Subpart G of 10 CFR Part 71, each package shall be operated, prepared for shipment and maintained in accordance with the following Operating Procedures and Maintenance Programs:

Model No.	Operating Procedures	Maintenance Program
Sentinel-25A, LCG-25A	Appendix E of TES-3206, as revised	Appendix F of TES-3206, as revised
Sentinel-25B, LCG-25B	Appendix E of TES-3209, as revised	Appendix F of TES-3209, as revised
Sentinel-25C, LCG-25C	Appendix E of TES-3210, as revised	Appendix F of TES-3210, as revised
Sentinel-25C3	Appendix E of TES-3211, as revised	Appendix F of TES-3211, as revised
Sentinel-25D	Appendix E of TES-3212, as revised	Appendix F of TES-3212, as revised
Sentinel-25E	Appendix E of TES-3213, as revised	Appendix F of TES-3213, as revised
Sentinel-25F	Chapter VIII of TES-3202, as revised	Chapter IX of TES-3202, as revised

- 9. The packages authorized by this certificate are hereby approved for use under the general license provisions of 10 CFR §71.12.
- 10. Expiration date: December 31, 1996.

REFERENCES

Teledyne Energy Systems applications dated April 26, 1985; and August 19, 1986.

Teledyne supplements dated: November 3, 1986; September 17 and December 2, 1991.

Department of the Air Force supplement dated: November 12, 1993.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Cass R. Chappell, Section Leader

Cask Certification Section

Storage and Transport Systems Branch

Division of Industrial and

Medical Nuclear Safety, NMSS

DEC 1 6 1993

Date: