



**Department of Energy**  
Washington, DC 20585

August 27, 2014

Department of the Air Force  
Air Force Technical Application Center  
Attn: AFTAC/CC  
1030 S. Highway A1A  
Patrick AFB, Florida 32925

Dear Colonel Worley:

Per your request dated March 24 attached are the U. S. Department of Energy (DOE) Certificate of Compliance (CoC), Certificate Number 4888, Revision No. 1, for Package Identification No. USA/4888/B( ) (DOE) and Certificate Number 5862, Revision No. 1, for Package Identification No. USA/5862/B( ) (DOE). These certificates were revised to allow shipment of Sentinel 25A, 25E, 25F, and 100F packages under approved and active DOE Exemptions. The expiration date for DOE Certificate Number 4888, Revision No. 1, and 5862, Revision 1, is August 31, 2019.

Also, attached are DOE Exemptions DOE-E1402 and DOE-E1404, and their supporting Safety Evaluation Reports. These exemptions are authorized for a one-way shipment of nine Sentinel-25 series packages and one Sentinel-100F package stored at Burnt Mountain, Alaska to the Nevada National Security Site in Mercury, Nevada to transfer these packages to DOE. The expiration date of DOE-E1402 and DOE-E1404 is upon completion of the shipment or August 31, 2016, whichever comes first.

If you have any questions, please contact me or Dr. James M. Shuler of my staff, at (301) 903-5513

Sincerely,

A handwritten signature in blue ink, appearing to read "Frank Marcinowski".

Frank Marcinowski  
Headquarters Certifying Official  
Deputy Assistant Secretary for  
Waste Management

**Attachments**

cc: Jeffery England, SRNL  
James M. Shuler, EM-33





U.S. DEPARTMENT OF ENERGY

DOE Packaging Certification Program

CERTIFICATE OF COMPLIANCE For Radioactive Materials Package

DOE F 5822.1 (5-85 Formerly EV-618)

Table with 5 columns: 1a. Certificate Number (5862), 1b. Revision No. (1), 1c. Package Identification No. (USA/5862/B( ) (DOE)), 1d. Page No. (1), 1e. Total No. Pages (2)

2. PREAMBLE

- 2a. This certificate is issued under the authority of 49 CFR Part 173.7(d).
2b. The packaging and contents described in item 5 below meet the safety standards set forth in subpart E, "Package Approval Standards" and subpart F, "Package, Special Form, and LSA-III Tests" Title 10, Code of Federal Regulations, Part 71.
2c. 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 through or into which the package will be transported.

3. This certificate is issued on the basis of a safety analysis report of the package design or application --

(1) Prepared by (Name and address): Department of the Air Force Air Force Technical Application Center 1030 S. HWY A1A Patrick AFB, FL 32925-3002

(2) Title and Identification of report or application: Teledyne Energy Systems application dated June 26; 1985, Supplemented [See 5.(d)]
(3) Date: June 1985

4. CONDITIONS

This certificate is conditional upon the fulfilling of the applicable Operational and Quality Assurance requirements of 49CFR parts 100-199 and 10CFR Part 71, and the conditions specified in item 5 below.

5. Description of Packaging and Authorized Contents, Model Number, Transport Index, Other Conditions, and References:

(a) Packaging

NOTE: THIS COC IS NOT AUTHORIZED FOR SHIPMENTS IN COMMERCE, BUT IS ONLY AUTHORIZED FOR STORAGE OR USE UNDER AN APPROVED AND ACTIVE DOE EXEMPTION.

- (1) Model: Sentinel-100F RTG S/N 001
(2) Description:

The package, a thermoelectric generator, is 45.5 inches in height with a base diameter of 24.5 inches (excluding mounting pads), and weights approximately 2,600 pounds. The components include a Tungsten biological shield (10.705 inches X 13.837 inches OD) which is within the aluminum (6061) outer protective housing. Four 6061-T6 mounting pads at the base of the aluminum housing provide the shipping pallet attachment points.

6a. Date of Issuance:

8/27/14

6b. Expiration Date: August 31, 2019

FOR THE U.S. DEPARTMENT OF ENERGY

7a. Address (of DOE Issuing Office)

U.S. Department of Energy Office of Packaging and Transportation, EM-33 1000 Independence Avenue SW Washington, DC 20585

7b. Signature, Name, and Title (of DOE Approving Official)

Frank Marcinowski Headquarters Certifying Official Deputy Assistant Secretary for Waste Management

Certificate Number	Revision No.	Package Identification No.	Page No.	Total No. Pages
5862	1	USA/5862/B( ) (DOE)	2	2

(3) Drawings:

The packaging is constructed in accordance with the following Isotopes, Inc. Drawings No.:

010F10000	Sheets 1-3 (Rev. C), Generator Assembly Sentinel 100F
101-20000	Sheets 1-2 (Rev. B), Fuel Capsule Assembly
101-70003	(Rev. A) Shield Body
101-70004	(Original Issue) Shield Plug
001-90064	Sheets 1-2 (Rev. A), Shipping Crate Sentinel RFG
001-90039	Sheets 1-2 (Rev. J), Sheet 3 (Rev. H), and Sheet 4, Pallet Assembly

(b) Contents:

(1) Type and form of material.

Strontium-90 titanate, doubly encapsulated in a stainless steel liner and Hastelloy or Uniloy HC capsule which meets the requirements of special form radioactive material.

(2) Maximum quantity or material per package.

370,000 curies.

(c) Conditions:

(1) Fabrication of additional packages is not authorized.

(2) In addition to the requirements of Subpart G of 10 CFR Part 71 each package shall be operated in accordance with the Operating Procedures in the supplement dated August 30, 1985 and the package must be maintained in accordance with Maintenance Program in the supplement dated August 30, 1985.

(3) This CoC does **not** authorized shipments in commerce, but only authorizes use for storage or use under an approved and active DOE Exemption.

(d) References

(1) Teledyne Energy Systems application SEN-JFV-431, June 26, 1985 (with Enclosure: Report No. INSD-3080, Rev 4, dated June 1985).

(2) Teledyne supplements of August 30, 1985 (Report No. INSD-3080, Rev 5, dated August 1985) and July 26, 1990

(3) Air Force supplements November 12, 1993, August 15, 1995, August 25, 2000, and August 30, 2005.