

CERTIFICATE OF COMPLIANCE  
FOR RADIOACTIVE MATERIALS PACKAGES

1. CERTIFICATE NUMBER	2. REVISION NUMBER	3. PACKAGE IDENTIFICATION NUMBER	4. PAGE NUMBER	5. TOTAL NUMBER PAGES
9033	8	USA/9033/B(U)	1	2

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 contractor 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

a. ISSUED TO (Name and Address)

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

Amersham Corporation  
40 North Avenue  
Burlington, MA 01803

Amersham Corporation application dated  
December 1, 1989, as supplemented.

c. DOCKET NUMBER 71-9033

4. CONDITIONS

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

5.

(a) Packaging

(1) Model No.: 660, 660E, 660A, 660AE, 660B or 660BE

(2) Description

A steel encased uranium shielded Gamma Ray Projector. Primary components consist of an outer steel shell, polyurethane potting material, uranium shield, "S" tube, and end plugs. The contents are securely positioned in the "S" tube by a source cable locking device and shipping plug. Tamper-proof seals are provided on the packaging. The maximum total weight of the package is approximately 53 pounds.

(3) Drawings

The packaging is constructed in accordance with the following Technical Operations, Inc. Drawings:

(i) Model No. 660B - Drawing No. 66025, Sheets 1, 2 and 3, Rev. D;

(ii) Model No. 660 - Drawing No. 66025, Sheets 1, 2 and 3, Rev. B, and Sheet 4, Rev. -; or Drawing No. 66030, Sheets 1, 2, 3 and 4, Rev. -;

(iii) Model No. 660A - Drawing No. 66030, Sheets 1, 2 and 3, Rev. A; or Drawing No. 66030, Sheets 1, 2 and 3, Rev. B.

Model Nos. with an E suffix have an electrical circuit.

(b) Contents

(1) Type and form of material

Iridium-192 sources which meet the requirements of special form radioactive material.

CONDITIONS (continued)

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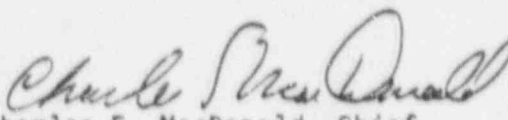
- (2) Maximum quantity of material per package
  - (i) 140 Curies for the Model No. 660B or 660BE package.
  - (ii) 120 Curies for the Model No. 660, 660E, 660A or 660AE package.
6. The source shall be secured in the shielded position of the packaging by the source assembly. The source assembly must be fabricated of materials capable of resisting a 1475 °F fire environment for one-half hour and maintaining their positioning function. The source assembly must engage the locking device. The source assembly must be of sufficient length and diameter to provide positive positioning of the source within the depleted uranium shield assembly.
7. The source assembly for use with this packaging is limited to Technical Operations, Inc. Model No. 424-9 as shown in Technical Operations, Inc. Drawing No. 42409, Rev. B.
8. The name plate must be fabricated of materials capable of resisting the fire test of 10 CFR Part 71 and maintaining its legibility.
9. In addition to the requirements of Subpart G of 10 CFR Part 71:
  - (a) The package must meet the Acceptance Test and Maintenance Program of Chapter 8.0 of the application, as supplemented; and
  - (b) The package shall be prepared for shipment in accordance with the Operating Procedures in Chapter 7.0 of the application, as supplemented.
10. The package authorized by this certificate is hereby approved for use under general license provisions of 10 CFR §71.12.
11. Expiration date: October 31, 1995

REFERENCES

Amersham Corporation Application dated December 1, 1989.

Supplements dated: April 24, August 23, September 6, September 17, October 26 and November 27, 1990.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

  
Charles E. MacDonald, Chief  
Transportation Branch  
Division of Safeguards  
and Transportation, NMSS

Date: DEC 05 1990



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

APPROVAL RECORD  
Model Nos. 660, 660E, 660A, 660AE, 660B and 660BE  
Certificate of Compliance No. 9033  
Revision 8

By application dated October 26, 1990, as supplemented, Amersham Corporation requested an amendment to Certificate of Compliance No. 9033 for the Model No. 660 package series. The amendment was requested to include the following Technical Operations, Ir. drawings in the Certificate of Compliance:

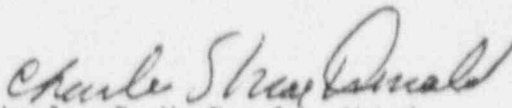
- (1) Drawing No. 66030, Sheets 1, 2, 3 and 4, Rev. -, for Model No. 660.
- (2) Drawing No. 66030, Sheets 1, 2 and 3, Rev. A, for Model No. 660A.
- (3) Drawing No. 66030, Sheets 1, 2 and 3, Rev. B, for Model No. 660A.

Drawing No. 66030, Rev. -, is for the "narrow-body" package which is 5/8" narrower than the "wide-body" package shown in certificate Drawing No. 66025, Rev. B. There are no other differences. The "narrow-body" package was included in Certificate of Compliance No. 9033, Revisions 0, 1 and 2, but was omitted in the subsequent revisions. The applicant has shown that the "narrow-body" package meets the current requirements of 10 CFR Part 71.

Drawing No. 66030, Rev. A, is for the same "narrow-body" package design but retrofitted with an automatic lock mechanism. Drawing No. 66030, Rev. B, is for the "wide-body" package design retrofitted with the automatic lock mechanism. The automatic lock mechanism has been previously approved for the Model No. 660 package series.

The NRC staff has reviewed the above drawings and have found them complete and adequate.

The changes do not affect the ability of the package to meet the requirements of 10 CFR Part 71.

  
Charles E. MacDonald, Chief  
Transportation Branch  
Division of Safeguards  
and Transportation, NMSS

Date: DEC 05 1990