



U.S. Department  
of Transportation

Research and  
Special Programs  
Administration

400 Seventh Street, S.W.  
Washington, D.C. 20590

JUL 20 2004

DOT-E 13026  
(FIRST REVISION)

EXPIRATION DATE: June 30, 2006

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Sun Nuclear Corporation  
Melbourne, FL
2. PURPOSE AND LIMITATIONS:
  - a. This exemption authorizes the manufacture, marking, sale and use of non-DOT specification packaging described as a hermetically sealed ionization chamber for the transportation in commerce of the materials authorized by this exemption. This exemption provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.
  - b. The safety analyses performed in development of this exemption only considered the hazards and risks associated with transportation in commerce. The safety analyses did not consider the hazards and risks associated with use as a component of another device or other uses not associated with transportation in commerce.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.302a(a)(1), and 175.3 in that the use of a non-DOT specification packaging (ionization chamber) is not authorized except as specified herein.
5. BASIS: This exemption is based on the application of Sun Nuclear Corporation dated June 28, 2004 submitted in accordance with § 107.109.

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6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Material Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Argon, compressed	2.2	UN1006	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is a non-DOT specification metal, inside container, described as a hermetically sealed ionization chamber (radiation detector). The ionization chamber is an integral part of a medical test instrument described as a dose calibrator. Each ionization chamber must be designed and constructed in accordance with Sun Nuclear Corporation Drawing 020130 dated December 4, 1991 and other drawings on file with the Office of Exemptions and Approvals (OHMEA). The ionization chamber is not equipped with a pressure relief device. Each ionization chamber must conform with the following design criteria:

Construction Material: Welded 6063-T6 aluminum cylinder  
6061-T6 top and bottom plates

Outside Diameter: 5 inches

Gas Volume: 105 cubic inches

Operating pressure: 75 psig

Minimum burst pressure: Four times the design pressure

b. OPERATIONAL CONTROLS -

(1) The ionization chamber must be shipped in a strong outside packaging capable of withstanding a minimum drop test of four feet without breakage of the ionization chamber or rupture of the outside packaging.

(2) If repackaged, packagings used to ship larger equipment containing ionization chambers covered by this exemption must be in strong outside packagings providing equivalent protection for the devices as specified in paragraph 7.b.(1) above.

(3) Emergency response information provided with the shipment, and available via an emergency response telephone number must identify that the receptacles are not fitted with pressure relief devices, and provide appropriate guidance for exposure to fire.

(4) The ionization chamber may only be recharged by Sun Nuclear Corporation personnel at its manufacturing facility.

8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this exemption for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this exemption.

b. A person who is not a holder of this exemption, but receives a package covered by this exemption, may reoffer it for transportation provided no modifications or changes are made to the package and it is offered for transportation in conformance with this exemption and the HMR.

c. A current copy of this exemption must be maintained at each facility where the package is offered or reoffered for transportation.

d. Each packaging manufactured under the authority of this exemption must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Exemptions and Approvals for a specific manufacturing facility.

e. A current copy of this exemption must be maintained at each facility where the package is manufactured under this exemption. It must be made available to a DOT representative upon request.

f. Except when offered for transportation by air:

(1) Packages covered by this exemption are excepted from labeling requirements of Subpart E of Part 172.

(2) Shipments are not subject to the placarding requirements of Subpart F of 49 CFR Part 172.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, cargo aircraft only, and passenger-carrying aircraft.
10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each aircraft used to transport packages covered by this exemption. The shipper must furnish a current copy of this exemption to the air carrier before or at the time the shipment is tendered.
11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this exemption and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:
- o All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, Parts 171-180.
  - o Persons operating under the terms of this exemption must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
  - o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this exemption must receive training on the requirements and conditions of this exemption in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this exemption, including display of its number, when the exemption has expired or is otherwise no longer in effect.

12. REPORTING REQUIREMENTS: The carrier is required to report any incident involving loss of packaging contents or packaging failure to the Associate Administrator for Hazardous Materials Safety (AAHMS) as soon as practicable. (Sections 171.15 and 171.16 apply to any activity undertaken under the authority of this exemption.) In addition, the holder(s) of this exemption must also inform the AAHMS, in writing, as soon as practicable of any incidents involving the package and shipments made under this exemption.

Issued in Washington, D.C.:



*JA*  
Robert A. McGuire  
Associate Administrator for  
Hazardous Materials Safety

JUL 2 0 2004

(DATE)

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Research and Special Programs Administration, Department of Transportation, Washington, D.C. 20590.  
Attention: DHM-31.

Copies of this exemption may be obtained by accessing the Hazardous Materials Safety Homepage at <http://hazmat.dot.gov/exemptions> Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

PO: CWFreeman/sln