MAR 1 9 2004

U.S. Department
of Transportation

**Research and
Special Programs
Administration**

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

DOT-E 13501

EXPIRATION DATE: December 31, 2004

1. GRANTEE: Northrop Grumman Space Technology
Redondo Beach, CA

2. PURPOSE AND LIMITATION:

a. This emergency exemption authorizes the transportation in commerce of certain non-DOT specification containers and DOT specification cylinders containing Division 2.1 and 2.2 materials. The containers and cylinders are installed in the EOS (AURA) Satellite or attached to the EOS Satellite Transporter. 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 § 173.24(b)(1) in that cylinders are not authorized to release hazardous materials into the EOS Satellite Transporter during transportation, except as specified herein; § 173.301(f) in that the containers are not fitted with pressure relief

devices; and § 173.302a(a)(1) and § 173.304a(a)(2) in that non-DOT specification packagings are not authorized except as specified herein.

5. BASIS: This emergency exemption is based on the application of Northrop Grumman Space Technology dated January 22, 2004, additional information dated March 17, 2004 submitted in accordance with § 107.117 and determination that is necessary to prevent significant economic loss.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identi- fication Number	Packing Group
Ammonia, anhydrous	2.2	UN1005	N/A
Helium	2.2	UN1046	N/A
Nitrogen, compressed	2.2	UN1066	N/A
Propylene	2.1	UN1077	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packagings prescribed are attached to the EOS Satellite Transporter or contained inside the EOS (AURA) satellite. Packagings may not be equipped with pressure relief devices.

(1) Contained inside the satellite are eighteen (18) non-DOT specification packagings known as heat pipes constructed of tubing (aluminum alloy 6061, aluminum alloy 6063 or 300 series stainless steel or combination thereof) with an end cap and fill tube welded to opposing ends. Each heat pipe may not contain more than 55 grams of anhydrous ammonia.

(2) Contained inside the satellite is a Cooler Mechanical Unit (CMU) designed and tested in accordance with MIL-STD-1522. The CMU contains 0.153 ft3 of helium with a working pressure of 120

PSI, and a maximum operating pressure (MEOP) of 133 PSI. The design proof pressure is 1.5 times MEOP or 225 PSI.

(3) Contained inside the satellite are five (5) non-DOT specification packaging known as heat pipes designed in accordance with MIL-STD-1522A for pressurized missile and space systems. The heat pipes are designed with a burst pressure at least 2.5 times the maximum operating pressure or 1467 PSI. The pressure of the gas in each heat pipe at 68 degrees F is less than 150 PSI. Each pipe shall contain less than 100 grams of propylene.

(4) Attached to the EOS Satellite transporter are sixteen (16) DOT 3AA Specification cylinders that are manifolded in groups of four in accordance with the requirements of § 173.301(d). The cylinders contain compressed nitrogen and have a marked service pressure of 2,500 psig. This exemption authorizes the cylinders to be transported with open valves to allow the controlled flow of gas. The nitrogen will flow from the cylinders to the EOS Satellite container. The nitrogen flow rate is approximately 200 SCFH.

b. OPERATIONAL CONTROLS -

(1) The EOS(Aura) Satellite must be shipped in a strong outside fiberglass container (EOS Satellite) in accordance with drawings on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA).

(2) The EOS (Aura) Satellite must be transported in an exclusive use vehicle which is temperature controlled.

(3) The nitrogen cylinders are mounted and secured vertically in two steel fixtures, each containing 8 cylinders, mounted on the rear deck of the EOS Satellite Transporter as shown on photographs and sketches on file with OHMEA.

(4) Emergency response information provided with the shipment and available via an emergency response telephone number must indicate that the non-DOT specification containers are not fitted with pressure relief devices and must provide appropriate guidance in the event of a fire.

8. SPECIAL PROVISIONS:

a. This exemption only authorizes a one-time shipment from Northrop Grumman Space Technology, Redondo Beach, CA to Vandenberg AFB, CA.

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

c. The EOS Satellite Container must be plainly and durably marked on two opposite sides "DOT-E 13501". Additionally, the steel fixtures containing the nitrogen cylinders must be marked "DOT-E 13501".

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle.

10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each motor vehicle used to transport packages covered by this exemption.

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:

- All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, 49 CFR Parts 171-180.

- 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.

- 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 this 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 inform the AAHMS, in writing, of any incident involving the package and shipments made under the terms of this exemption.

Issued in Washington, D.C.:

MAR 1 9 2004

Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety

(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.

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