DANGEROUS GOODS PANEL (DGP)

TWENTY-SECOND MEETING

Montréal, 5 to 16 October 2009

Agenda Item 6: Other business

REQUIREMENTS FOR TRANSPORT OF OXYGEN, OXYGEN GENERATORS, AND OXIDIZING GASES

(Presented by R. Richard)

SUMMARY

This paper updates the DGP on the implementation of changes to the requirements for the transport of oxygen, oxygen generators, and oxidizing gases when transported to, from, or within the United States.

The Panel is invited to share this information with affected parties involved in the transport of such materials.

1. INTRODUCTION

1.1 During the 2007 DGP Working Group of the Whole Meeting (DGP-WG07, Memphis, 30 April to 4 May 2007), the working group considered DGP-WG/07-IP/7 – "Enhanced Requirements for Transport of Oxygen, Oxygen Generators, and Oxidizing Gases". The paper summarized recent enhancements to the requirements for the transport of such materials to, from, or within the United States.

1.2 In summary, the effect of the amendments to the U.S. Hazardous Materials Regulations (see Docket No. RSPA–04–17664 (HM–224B)) were to:

a) require cylinders of compressed oxygen and other oxidizing gases and packages of chemical oxygen generators to be placed in an outer packaging that meets certain flame penetration and thermal resistance requirements when transported aboard an aircraft. In order to meet these requirements, the cylinder must be placed in a rigid outer packaging that is capable of passing, as demonstrated by design testing, a specified Flame Penetration Resistance Test. In addition, the cylinder and the outer packaging must be capable of passing, as demonstrated by design testing, a specified Thermal Resistance Test.

b) revise the pressure relief device setting limit on cylinders of compressed oxygen and other oxidizing gases transported aboard aircraft; and

c) limit the types of cylinders authorized for transporting compressed oxygen aboard aircraft to DOT specification 3A, 3AA, 3AL, and 3HT cylinders, and UN pressure receptacles conforming to ISO specifications 9809–1, 9809–2, 9809–3 and 7866.

1.3 Currently, US Variation 18 broadly addresses these new requirements and brings them into effect for the transport of such materials to, from, or within the United States. The purpose of this information paper is to provide updated information to the Panel relevant to these changes, which came into effect fully on 1 October, 2009. We will be updating the US Variations to specifically state this requirement in the next edition of the Technical Instructions. An advisory notice containing additional information is attached in the Appendix to this IP.

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APPENDIX

US DOT ADVISORY ALERT

Advisory Alert

June, 2009

Upcoming October 1, 2009 Compliance Date for Outer Packagings that Meet Certain Flame Penetration and Thermal Resistance Requirements when Transported Aboard Aircraft

This advisory is intended to alert persons that after September 30, 2009, cylinders of compressed oxygen and other oxidizing gases and packages of chemical oxygen generators must be placed in outer packagings that meet certain flame penetration and thermal resistance requirements when transported aboard an aircraft.

PHMSA adopted the outer packaging requirement in a final rule developed in cooperation with the Federal Aviation Administration and published January 31, 2007. We indicated in a subsequent September 28, 2007 final rule that PHMSA and FAA planned to closely monitor the availability of the required outer packagings and would consider an extension of the October 1, 2009 compliance date if we determine that a sufficient supply of the required outer packagings is not available. We have determined there are currently a sufficient number of packaging manufacturers available to supply the required outer packagings. Therefore, we are not extending the October 1, 2009 compliance date. After September 30, 2009, cylinders of compressed oxygen and other oxidizing gases and packages of chemical oxygen generators must be placed in rigid outer packagings that meet the specified flame penetration and thermal resistance requirements when transported aboard an aircraft and certain additional requirements.

A. For a cylinder containing compressed oxygen and other oxidizing gases intended for transportation by aircraft, the following requirements apply:

1. The cylinder must be placed in a rigid outer packaging that is capable of passing, as demonstrated by design testing, the Flame Penetration Resistance Test in Appendix E to 49 CFR Part 178.

2. The cylinder and the outer packaging must be capable of passing, as demonstrated by design testing, the Thermal Resistance Test specified in Appendix D to 49 CFR Part 178.

3. The cylinder and the outer packaging must both be marked and labeled in accordance with Subparts D and E of 49 CFR Part 172. The additional marking, “DOT31FP” is allowed to indicate that the cylinder and the outer packaging are capable of passing, as demonstrated by design testing, the Thermal Resistance Test.

4. Prior to each shipment, the package must be visually inspected to verify that all features of the packaging are in good condition, including all latches, hinges, seams, and other features, and that the packaging is free from perforations, cracks, dents, or other abrasions that may negatively affect the flame penetration resistance and thermal resistance characteristics of the packaging.

5. A cylinder of compressed oxygen that has been furnished by an aircraft operator to a passenger in accordance with 14 CFR §§121.574, 125.219, or 135.91 is excepted from the outer packaging requirements of paragraph (f)(3) of § 173.302.

B. For a chemical oxygen generator and a chemical oxygen generator installed in equipment and intended for transportation by cargo-only aircraft, the following requirements apply:

1. The device must be placed in a rigid outer packaging that is capable of passing the Flame Penetration Resistance Test in Appendix E to 49 CFR Part 178 and the Thermal Resistance Test specified in Appendix D to 49 CFR Part 178.

2. None of the following conditions may occur when one generator in the package is actuated:

a. Actuation of other generators in the package;
b. Ignition of the packaging materials; and
c. A temperature above 100 °C (212 °F) on the outside surface temperature of the package.

3. All features of the packaging must be in good condition, including all latches, hinges, seams, and other features, and the packaging must be free from perforations, cracks, dents, or other abrasions that may negatively affect the flame penetration resistance and thermal resistance characteristics of the packaging, verified by a visual inspection of the package before each shipment.

The full text of the revised regulations can be found on the PHMSA website at:

http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/Federal%20Register%20Historical%20Files/72fr__2007/72fr-4442.pdf

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