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**COMMITTEE OF EXPERTS ON THE TRANSPORT OF
DANGEROUS GOODS AND ON THE GLOBALLY
HARMONIZED SYSTEM OF CLASSIFICATION
AND LABELLING OF CHEMICALS**

Sub-Committee of Experts on the
Transport of Dangerous Goods

Thirty-fifth session
Geneva, 22–26 June 2009
Item 4 of the provisional agenda

ELECTRIC STORAGE SYSTEMS

Consolidation of energy systems into new section(s) of the UN Model Regulations on the
Transport of Dangerous Goods

Transmitted by the US Fuel Cell Council (USFCC)¹

Introduction

1. During the thirty-fourth session of the Sub-Committee, it was discussed by several members of the Sub-Committee that perhaps fuel cell systems, fuel cell cartridges, batteries and possibly other energy systems such as capacitors and super capacitors or ultra capacitors should be dealt with in their own special section of the Model Regulations.
2. Industry discussions have evolved in the intervening months, with several viewpoints being expressed.
3. The Sub-Committee is hereby asked to consider this suggestion, and the various options for consideration provided in this document, and to give guidance as to how to proceed.

¹ In accordance with the programme of work of the Sub-Committee for 2009-2010 approved by the Committee at its fourth session (refer to ST/SG/AC.10/C.3/68, para. 118(c) and ST/SG/AC.10/36, para. 14).

4. If a consensus is reached, the fuel cell industry will work with the Sub-Committee and the other involved industries towards the resolution of this important issue.

Options for consideration

5. A new Chapter 2.10 could be added to Part 2, Classification, which would be entitled ENERGY SYSTEMS or some another suitable title.

6. A new Part could be added to the Model Regulations, similar to Part 4, Packing and Tank Provisions, entitled Part X, ENERGY SYSTEMS or another suitable title.

7. A new Chapter could be added to Part 4, entitled Chapter 4.X, ENERGY SYSTEMS or another suitable title.

8. A new section could be added to Chapter 2.9 giving specific direction for the classification of these articles, similar to the direction for classification of environmentally hazardous substances.

9. A new chapter could be added to Part 6 giving specific direction for packagings intended for the transport of these articles.

10. The existing system could be retained whereby the hazard is evaluated based on the predominant hazard and the classification is done in accordance with that hazard.

Types of systems covered

11. The following types of hazards are now considered by the Model Regulations when discussing these systems:

- (a) Fuel cell cartridges are articles that contain a chemical but that cannot, of themselves, produce voltage or current. The primary means of ensuring safety during transport for the fuel cell cartridges is requiring no leakage and classifying according to the hazard class of fuel contained.
- (b) Batteries are electrochemical systems that produce voltage and current. The primary means of ensuring safety during transport is avoiding short circuit.
- (c) Ultracapacitors store charge physically but as noted in the proposal by KiloFarad International (KFI) on ultracapacitors, ST/SG/AC.10/C.3/2009/13, the primary means of ensuring safety during transport is requiring that they are shipped uncharged.

12. Putting all of these types of systems into the same classification threatens to result in a final system of regulation for the various sub-classifications given above that is equivalent to the current system whereby the hazard is evaluated prior to placing it into the proper classification and the particular article is regulated as necessary to properly mitigate the hazard. If such is the result, the change may not provide any benefit.

Scope of the change

13. Accomplishing such a change could result in changes to the following areas of the Model Regulations:

- (a) Possible changes to the definitions in Chapter 1.2;
- (b) Possible changes to Part 2, including a possible new Chapter;
- (c) Changes to the Dangerous Goods List, Part 3;
- (d) Possible changes to the Glossary;
- (e) Consequential changes to the Alphabetical Index;
- (f) Possible development of a new Part, similar to Part 4;
- (g) Possible development of a new Chapter in Part 4;
- (h) Possible changes to Chapter 5.2;
- (i) Possible changes to Part 6, including the possible development of an entirely new chapter;
- (j) Changes to Special Provisions in Chapter 3.3;
- (k) Changes to existing language in Part 6, Chapter 6.2;
- (l) Changes to existing packing instructions in Part 4.

Additional questions for consideration by the Sub-Committee

14. Would the new coverage for energy systems also cover marking, or would Chapter 5.2 be retained and revised to reflect the new coverage?

15. Does sufficient commonality exist between these various articles to allow them to be regulated in their own separate section of the Model Regulations?

16. Does the benefit of restructuring the Model Regulations in such a manner justify the effort required to do so?

17. Which of the options for consideration given above are most likely to receive approval by the Sub-Committee?

18. USFCC would appreciate the Sub-Committee's guidance on this issue and if the Sub-Committee directs USFCC to continue, USFCC will be pleased to work with interested members and stakeholder industries to facilitate intersessional discussions on how to proceed.
