



June 13, 2002

Submitted Electronically to the  
DOT Docket Management System

Docket Management System  
U.S. Department of Transportation  
Room PL 401  
400 Seventh Street, SW  
Washington, DC 20590-0001

Re: Docket Number RSPA-02-11989 [HM-224C]  
Comments on Proposed Lithium Battery Rulemaking

Dear Sir or Madam:

The Portable Rechargeable Battery Association (PRBA) is pleased to submit the following comments on the Department of Transportation's Research and Special Programs Administration (RSPA) notice of proposed rulemaking for lithium batteries published in the April 2, 2002 Federal Register. (67 Fed. Reg. 15510), Docket Number RSPA-02-11989 [HM-224C].<sup>1</sup> PRBA appreciates the significant amount of effort RSPA has devoted to drafting hazardous materials/dangerous goods regulations for lithium batteries over the past several years and supports the majority of the proposed changes in the rule. There are, however, several provisions in the proposed rule that concern PRBA. These are discussed below.

1. Lithium polymer batteries – On page 15513 of the proposed rule, RSPA states that “...lithium polymer batteries are the same as lithium metal or lithium alloy batteries for purposes of compliance with the requirements of § 173.185; there are no provisions for determining equivalent lithium content for these batteries.”

The premise of this statement is incorrect and its conclusion thus is inappropriate. Most of the lithium polymer batteries on the market today are based on lithium ion technology and do

not contain lithium metal or lithium alloy. In addition, the UN Manual of Tests and Criteria definition for a lithium ion cell or battery states that “A lithium polymer cell or battery that uses lithium-ion chemistries, as described herein, is regulated as a lithium-ion cell or battery.” PRBA therefore requests that RSPA clarify this issue in its final rule. RSPA should specifically state that a lithium polymer battery that is based on lithium ion chemistry or technology is regulated as a lithium ion battery for determining equivalent lithium content. Thus, the definition for “equivalent lithium content” should be revised as follows:

“Equivalent lithium content means, for a lithium ion cell, the product of the rated capacity, in ampere-hours, of a lithium ion cell times 0.3. The equivalent lithium content of a battery (including a lithium polymer battery based on lithium ion technology) equals the sum of the grams of equivalent lithium content contained in the component cells of the battery.”

2. Grandfather clause for testing to the UN Manual of Tests and Criteria, Second Edition – RSPA proposes at 49 CFR § 173.185(a)(1) that “A cell or battery and equipment containing a cell or battery which was first transported prior to [effective date of the final rule] and is of a type proven to meet the criteria of Class 9 by testing in accordance with the tests in the UN Manual of Tests and Criteria, Second Edition, 1990 is not required to be retested in accordance with the UN Manual of Tests and Criteria, Third Revised Edition (1999), Part III, subsection 38.3.”

This proposed requirement appears inconsistent with the soon-to-be-published ICAO Technical Instructions (2003/2004 Edition). ICAO apparently is removing this grandfather clause from the TI and will soon require all lithium cells and batteries to be tested in accordance with the eight new UN Tests and Criteria for lithium batteries. RSPA should harmonize its regulation with the ICAO TI and remove this grandfather clause from the HMR.

We also note that the date of the UN Manual of Tests and Criteria, Second Edition, is not 1990, but 1995. This reference therefore should be corrected.

3. Open circuit voltage requirements under 49 CFR § 173.185(a)(7) – This provision apparently was established in response to an incident in the early 1980’s involving a lithium sulfur dioxide battery and a particular cell design that was prevalent at that time. Cell designs

since the mid 1980's have improved dramatically and, more importantly, the new UN Tests now include shock, vibration, and short circuit tests on discharged batteries. Thus, this provision is no longer necessary as part of the HMR, particularly for lithium ion cells and batteries. In addition, there is no corresponding provision in the UN Model Regulations or ICAO Technical Instructions. This proposed provision (49 CFR § 173.185(a)(7)) should be deleted or at the least modified to except lithium ion cells and batteries from this requirement.

4. Exception for cell and battery designs manufactured prior to January 1, 2003 – In the preamble to the rule (page 15512), RSPA states “RSPA agrees that a period of time should be provided to manufacturers of lithium batteries to test those battery designs that are currently on the market. RSPA believes that it would be unreasonable to require these manufacturers to test these designs immediately or in just a few months after the effective date of a final rule.” PRBA agrees with RSPA's position on this matter. It appears, however, that RSPA failed to clearly provide for this exception in the proposed rule at 49 CFR § 173.185(d)(1)(iii). Thus, PRBA requests that the proposed 49 CFR § 173.185(d)(1)(iii) be revised as follows:

“A cell or battery design that was manufactured before January 1, 2003 is not required to be tested until January 1, 2005;”

5. Shipping lithium batteries for recycling – PRBA filed a petition with RSPA on February 8, 2002 and requested that RSPA include in this rulemaking a proposed change in the requirements for shipping spent lithium batteries for recycling. Unfortunately, RSPA failed to include this change in the proposed rulemaking. We now reiterate our request that it be made. Failure to include the change in the final rule will have significant implications for the Rechargeable Battery Recycling Corporation's (RBRC) used battery collection and recycling program.

Under the current 49 CFR § 173.185(h), otherwise-regulated lithium batteries are excepted from the HMR if shipped by ground for disposal. (Cells and batteries shipped for disposal is addressed in the proposed rule at 49 CFR § 173.185(d)(2)). However, in an interpretation letter dated April 6, 2000, RSPA stated the view that the exception does not apply to lithium batteries shipped for recycling. PRBA disagrees with this interpretation, which we believe is illogical, arbitrary, and inconsistent with the purpose of this provision in the HMR.

RBRC has operated a very successful rechargeable battery collection and recycling program since 1995. Initially, RBRC collected and recycled only spent nickel cadmium batteries. However, in January 2000, RBRC expanded its collection program to also include spent rechargeable lithium ion, nickel metal hydride, and small sealed lead acid batteries. The RBRC program enables consumers to return spent rechargeable batteries to retail establishments (i.e., Radio Shack) for recycling. These batteries are then packed with an effective means of preventing external short circuits and shipped by ground in strong fiberboard boxes to a fully permitted recycling facility in Pennsylvania.

The problems confronting RBRC are two-fold. First, after January 1, 2003, lithium ion batteries containing more than 8 grams of equivalent lithium content must be shipped as Class 9 hazardous materials (unless shipped for disposal). As a result of the continuing changes in battery technology and increasing demand for more energy density in batteries to power portable consumer electronic products, larger lithium ion batteries (those containing more than 8 grams of equivalent lithium content) may soon be utilized in these products. Thus, it is quite possible that these larger lithium ion batteries will be collected as part of the RBRC program. Second, after January 1, 2005, all lithium batteries must be tested in accordance with the UN Manual of Tests and Criteria prior to shipment (unless shipped for disposal). It would be extremely difficult for RBRC to determine whether the batteries it is shipping for recycling have been tested.

RSPA has recognized that, when used, lithium batteries can be safely shipped by ground for disposal without a Class 9 designation. Unless the regulation is revised, however, shipping the same used batteries for recycling would require a Class 9 designation. This makes no sense and could massively disrupt the RBRC recycling program.

PRBA therefore requests that RSPA include in the final rule an exception for lithium batteries shipped for recycling. This very minor amendment (noted below in bold and underlined) to the proposed 49 CFR § 173.185(d)(2) would prevent a disruption in RBRC's very popular battery collection and recycling program.

**“Cells and batteries, for disposal *or recycling*. A lithium cell or battery offered for transportation or transported to a permitted storage facility or disposal *or recy-***

*cling* site by motor vehicle is excepted.....”

6. Packaging and marking requirements for batteries contained in or packed with equipment – RSPA’s proposed packaging and marking requirements referenced at 49 CFR § 173.185(d)(1)(v) are inconsistent with Special Provision A45(e) in the soon-to-be-published ICAO Technical Instructions (2003/2004 Edition) and Special Provision 188(e) in the UN Model Regulations (Twelfth Revised Edition). Both the ICAO and UN except batteries contained in equipment from these new packaging and marking requirements. This is sensible because when a battery is shipped in a product, the product itself provides an extra level of protection during transport. Therefore, the new marking and packaging requirements are unnecessary.

PRBA requests that RSPA harmonize its proposal with the ICAO TI and the UN Model Regulations and except batteries contained in equipment from the new packaging and marking requirements. This will help to avoid any confusion when products containing batteries are shipped internationally. The proposed 49 CFR § 173.185(d)(1)(v) should read as follows:

“Except when installed in equipment, each package containing more than 24 lithium cells or 12 lithium batteries must be:”

7. Exception for cells and batteries shipped for testing – RSPA’s proposed exception for cells and batteries shipped for testing under 49 CFR § 173.185(d)(3) is inconsistent with Special Provision A88 in the soon to-be published ICAO Technical Instructions (2003/2004 Edition) and Special Provision 310 in the UN Model Regulations (Twelfth Revised Edition).

PRBA is particularly concerned that RSPA failed to address shipping of prototypes. As RSPA noted in the preamble (page 15513), “the vast majority” of lithium cells and batteries are manufactured outside the United States. Prototype cells and batteries that have not been tested frequently are shipped by air from overseas manufacturers to their customers in the U.S. Thus, the inconsistencies between RSPA’s proposed rule and the ICAO TI will result in confusion among shippers and carriers and create unnecessary transportation problems. PRBA therefore requests that RSPA revise the proposed 49 CFR § 173.185(d)(3) as follows:

Shipments of prototypes or for testing. Prototype lithium cells and batteries or lithium cells and batteries shipped for purposes of testing that are packed with not

more than 24 cells or 12 batteries per packaging are excepted from the requirements of (a)(1) of this section when the following requirements are met:

- a) Each cell or battery must be individually packed in an inner packaging, surrounded by cushioning material that is non-combustible, and nonconductive, and be packed in such a way to prevent short-circuiting; and
- b) Cells and batteries must be shipped as Class 9 hazardous materials.

8. Costs associated with proposal – PRBA strongly disagrees with RSPA’s statement in the preamble which notes that the costs associated with this proposal are “negligible” (pages 15513 and 15514). In a letter dated January 16, 2002 to John Gale (RSPA) from George Kerchner (on behalf of PRBA) regarding the cost of shipping and testing of lithium ion cells and batteries, we noted that “the operating cost of running the UN Tests is approximately \$2,500 per test, but the cost could be much higher depending on the type of cell and battery that is tested.” Such costs are not “negligible,” especially for a small battery company that manufactures both primary and rechargeable lithium batteries. In addition, several PRBA members recently have learned that testing costs for a complete line of cells and batteries may easily exceed \$500,000.

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Thank you for the opportunity to provide these comments on RSPA’s proposed rulemaking. If you have questions regarding these comments, please contact George Kerchner at 202/383-7163.

Sincerely,

Norm England

C. Norman England

President & CEO,

Portable Rechargeable Battery Association

<sup>1</sup> PRBA is a trade association whose members include many of the world’s leading manufacturers of rechargeable lithium ion batteries, portable computers, telephones, and other battery powered devices.