

**United States Court of Appeals**  
**FOR THE DISTRICT OF COLUMBIA CIRCUIT**

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Argued December 12, 2013

Decided January 31, 2014

No. 13-1058

LILLIPUTIAN SYSTEMS, INC.,  
PETITIONER

v.

PIPELINE AND HAZARDOUS MATERIALS SAFETY  
ADMINISTRATION,  
RESPONDENT

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On Petition for Review of the Pipeline  
and Hazardous Materials Safety Administration

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*Stephen A. Vaden* argued the cause for petitioner. With him  
on the briefs was *Gregory S. Walden*.

*Dana L. Kaersvang*, Attorney, U.S. Department of Justice,  
argued the cause for respondent. With her on the brief were  
*Stuart F. Delery*, Assistant Attorney General, *Michael Jay  
Singer*, Attorney, *Paul M. Geier*, Assistant General Counsel for  
Litigation, U.S. Department of Transportation, *Peter J. Plocki*,  
Deputy Assistant General Counsel for Litigation, and *Joy K.  
Park*, Trial Attorney.

Before: ROGERS and KAVANAUGH, *Circuit Judges*, and  
WILLIAMS, *Senior Circuit Judge*.

Opinion for the Court by *Circuit Judge* ROGERS.

ROGERS, *Circuit Judge*: Lilliputian Systems, Inc. manufactures micro fuel cells powered by butane, a highly flammable liquified gas. Micro fuel cells are a portable source of electricity, intended as an alternative to batteries to meet consumers' increasing demand for the use of portable electronic devices. Lilliputian challenges the prohibition in a final rule against airline passengers and crew carrying butane fuel cell cartridges in their checked baggage as arbitrary and capricious in light of the dissimilar treatment of other products, such as aerosols containing flammable gas, that are not subject to the rigorous safety specifications imposed on fuel cell cartridges. For the following reasons we remand the rule.

I.

The Secretary of Transportation is required to “prescribe regulations for the safe transportation, including security, of hazardous material in intrastate, interstate, and foreign commerce.” 49 U.S.C. § 5103(b)(1). The Secretary is to “ensure that, to the extent practicable, [hazardous materials transportation] regulations . . . are consistent with standards and requirements related to transporting hazardous material that international authorities adopt.” *Id.* § 5120(b). The Secretary, however, is “not require[d] . . . to prescribe a standard or requirement identical to a standard or requirement adopted by an international authority if the Secretary decides the standard or requirement is unnecessary or unsafe.” *Id.* § 5120(c)(1). Further, the Secretary may “prescrib[e] a safety standard or requirement more stringent than a standard or requirement adopted by an international authority if the Secretary decides the standard or requirement is necessary in the public interest.” *Id.* § 5120(c)(2). The Pipeline and Hazardous Materials Safety Administration is charged with carrying out the Secretary’s

duties and powers related to hazardous materials transportation and safety. *Id.* § 108(f).

In 2010, the Safety Administration published a proposed rule to amend the hazardous materials regulations in light of amendments to the 2011–2012 edition of the Technical Instructions for the Safe Transport of Dangerous Goods by Air adopted by the United Nations International Civil Aviation Organization (“ICAO”). *See* Notice of Proposed Rulemaking, Hazardous Materials: Harmonization with International Standards, 75 Fed. Reg. 52,070, 52,070 (Aug. 24, 2010) (“2010 NPRM”). The ICAO amendments permit airline passengers and crew to carry up to two spare fuel cell cartridges in checked baggage, including fuel cell cartridges containing liquified flammable gases such as butane. *See* Int’l Civil Aviation Org., Technical Instructions for the Safe Transport of Dangerous Goods by Air pt. 8;1.1.2(t)(6), ICAO Doc. 9284-AN/905 (2011–2012 ed.). The Safety Administration, however, proposed a rule under which airline passengers and crew could put certain spare fuel cell cartridges in their checked baggage, but not fuel cell cartridges containing Divisions 2.1 (flammable gas) or 4.3 (water-reactive) materials, including butane. 2010 NPRM, 75 Fed. Reg. at 52,089–90. Acknowledging that the proposed prohibition on Division 2.1 flammable-gas fuel cell cartridges was inconsistent with the ICAO Technical Instructions, the Safety Administration stated that it “strongly believes that the restriction should also include spare cartridges containing Division 2.1 materials.” *Id.* at 52,090.

In comments opposing the proposed prohibition on flammable-gas fuel cell cartridges in checked baggage Lilliputian argued, in part, that the Safety Administration had neither explained why safety specifications imposed on flammable-gas fuel cell cartridges were insufficient to render them safe to carry in checked baggage nor compared the risk of

flammable-gas fuel cell cartridges with that of other articles permitted in checked baggage that contain flammable gas (*e.g.*, toiletry aerosols). The prohibition remained part of the final rule. *See* Hazardous Materials: Harmonization with International Standards, 76 Fed. Reg. 3308, 3382 (Jan. 19, 2011) (“2011 Final Rule”) (codified at 49 C.F.R. § 175.10(a)(19)(iii)). The Safety Administration stated that it adopted the prohibition “[b]ecause Division 2.1 flammable gases are generally prohibited in air transportation on a passenger-carrying aircraft as cargo and due to the questionable integrity of such articles when packed in a passenger’s checked baggage.” *Id.* at 3337.

Lilliputian filed an administrative appeal, *see* 49 C.F.R. §§ 106.110–130, and in response the Safety Administration solicited further public comment “for the limited purpose of gathering information to help . . . determine whether or not to allow fuel cell cartridges containing Division 2.1 flammable gas to be carried aboard a passenger-carrying aircraft in checked baggage.” Notice of Proposed Rulemaking, 77 Fed. Reg. 31,274, 31,277 (May 25, 2012). Upon consideration of the received comments and other administrative appeals, the Safety Administration amended the 2011 Final Rule in certain respects but denied Lilliputian’s appeal. *See* Hazardous Materials: Harmonization with International Standards, 78 Fed. Reg. 1101, 1101, 1104 (Jan. 7, 2013) (“2013 Final Rule and Denial”). The Safety Administration gave five reasons for retaining the prohibition: (1) “Many of the critical safety requirements of the [hazardous materials regulations],” such as labeling and notification requirements, “do not apply to passengers;” (2) “Passengers are not trained to recognize potential hazards,” and are therefore “unlikely to be aware of the safety implications if certain commodities are subject to improper packaging or handling;” (3) “[A]ircraft fire detection and suppression systems do not prevent fires nor are they designed to completely extinguish fires;” (4) The design of a product containing

hazardous material “must be tested and demonstrate a certain level [of] safety prior to being authorized onboard passenger-carrying aircraft,” and (5) “[W]hen new passenger authorizations are granted consideration must be given to the cumulative risk of the new authorization combined with existing authorizations.” *Id.* at 1104. Lilliputian petitions for review. *See* 49 U.S.C. § 5127.

## II.

Lilliputian contends that the prohibition on flammable-gas fuel cell cartridges in checked airline baggage is arbitrary and capricious because the Safety Administration failed to provide any explanation of its risk assessment methodology, thereby “making it impossible . . . to counter the . . . unstated rationale.” Pet’r’s Br. 8. Further, Lilliputian contends, it failed to provide a reasoned explanation for its prohibition, including failing to explain why it declined to follow the presumption that federal hazardous materials regulations be harmonized with international standards, how and why it disagreed with the safety analyses considered sufficient by international regulators, why it disagreed with the test results of the Federal Aviation Administration regarding fuel cell cartridge safety, and why it prohibited butane fuel cell cartridges when it permits other, less stringently tested items containing butane in checked baggage.

The arbitrary and capricious standard in the Administrative Procedure Act, 5 U.S.C. § 706(2)(A), “includes a requirement that the agency . . . respond to ‘relevant’ and ‘significant’ public comments,” *Pub. Citizen, Inc. v. FAA*, 988 F.2d 186, 197 (D.C. Cir. 1993) (quoting *Home Box Office, Inc. v. FCC*, 567 F.2d 9, 35 & n.58 (D.C. Cir. 1977)); *see also Nat’l Ass’n of Home Builders v. EPA*, 682 F.3d 1032, 1042 (D.C. Cir. 2012). An agency’s failure to respond to relevant and significant public comments generally “demonstrates that the agency’s decision

was not ‘based on a consideration of the relevant factors.’” *Thompson v. Clark*, 741 F.2d 401, 409 (D.C. Cir. 1984) (quoting *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402, 416 (1971)).

Federal hazardous materials regulations require each fuel cell and fuel cartridge carried on a passenger aircraft to conform to safety specifications promulgated by the International Electrotechnical Commission (“IEC”). *See* 49 C.F.R. §§ 171.7(u), 175.10(a)(19)(vii). These specifications require fuel cell cartridges to withstand several tests designed to ensure durable and safe construction, including two drop tests (from approximately four feet and six feet), a crush test (based on approximately 220 lb.), a pressure test (based on approximately 14 lb./in<sup>2</sup> of pressure), and a temperature test (with temperatures ranging from -40° F to 158° F). Federal regulations permit passengers and crew to carry in their checked baggage “medicinal and toilet articles for personal use” that contain flammable gases (*e.g.*, aerosols), *see* 49 C.F.R. § 175.10(a)(1)(i), without any particular safety specifications other than having a cap or “other suitable means to prevent inadvertent release,” *id.*

Lilliputian’s comments before the Safety Administration repeatedly pointed to the IEC safety specifications imposed on fuel cell cartridges, emphasizing that such specifications are “extremely stringent,” and urging therefore that flammable-gas fuel cell cartridges were safe to transport in checked airline baggage. *See* Comments on Proposed Rule at 2 (Oct. 22, 2010); Administrative Appeal at 3 (Feb. 18, 2011); Comments on Proposed Rule at 2–3 (July 23, 2012). Its comments also contrasted the Safety Administration’s allowance of medicinal and toilet articles containing flammable gas in checked baggage, even though such articles are not required to satisfy the IEC safety specifications. *See* Comments on Proposed Rule at 4, 6 (Oct. 22, 2010); Administrative Appeal at 5 (Feb. 18, 2011);

Comments on Proposed Rule at 4–5 (July 23, 2012). In promulgating the 2011 Final Rule, the Safety Administration stated that Division 2.1 flammable gases are generally prohibited on passenger aircraft and questioned the integrity of such articles in passenger checked baggage. *See* 76 Fed. Reg. at 3337. It elaborated in denying Lilliputian’s administrative appeal, giving five reasons in support of the prohibition. *See* 2013 Final Rule and Denial, 78 Fed. Reg. at 1104. Although Lilliputian agrees with the relevance of the substantive factors considered by the Safety Administration, it maintains that the conclusion in support of the prohibition is arbitrary and capricious by failing to address the rigor of the IEC safety specifications and the comparative laxness of safety requirements for medicinal and toiletry articles containing the same hazardous material.

As a general matter, an agency cannot treat similarly situated entities differently unless it “support[s] th[e] disparate treatment with a reasoned explanation and substantial evidence in the record.” *Burlington N. & Santa Fe Ry. Co. v. Surface Transp. Bd.*, 403 F.3d 771, 777 (D.C. Cir. 2005). On the record before the court, the medicinal and toilet articles containing flammable gas that are allowed in checked baggage are similarly situated to flammable-gas fuel cell cartridges. Both contain the same Division 2.1 class of hazardous material; if permitted in checked baggage both would be packed by passengers and handled by airline baggage handlers; and when stowed in passenger luggage neither would be subject to the labeling or notification requirements for limited-quantity cargo, *see* 49 C.F.R. §§ 172.315(b), 173.230(g), 175.33. Yet flammable-gas fuel cell cartridges are prohibited from airline checked baggage while medicinal and toilet articles containing flammable gas are not. *Compare id.* § 175.10(a)(1)(i), *with id.* § 175.10(a)(19)(iii).

The only hint that the Safety Administration considered the disparate treatment was its statement about “cumulative risk.” *See* 2013 Final Rule and Denial, 78 Fed. Reg. at 1104. The entirety of that statement was: “Cumulative risk of additional passenger authorizations. We believe that when new passenger authorizations are granted consideration must be given to the cumulative risk of the new authorization combined with existing authorizations.” *Id.* The most that can be gleaned from this opaque statement is that the Safety Administration “considered” the “cumulative risk” of permitting flammable-gas fuel cell cartridges in checked baggage alongside medicinal and toilet articles containing flammable gas. It says nothing about *how* it evaluated the cumulative risk or *why* its evaluation led to the prohibition of one category of similarly situated articles and not the other. More significantly, the “cumulative risk” statement does not respond to Lilliputian’s comments pointing out, in view of the IEC testing regime, that medicinal and toilet articles containing flammable gas are less safe in airline luggage than fuel cell cartridges containing flammable gas, implying that if only one of the two kinds of products were to be permitted in checked baggage due to concerns about “cumulative risk,” it should be the latter. The Safety Administration acknowledged in promulgating the 2011 Final Rule that “fuel cell cartridges themselves are subject to much more stringent construction, testing, and packaging requirements than for similar articles (*e.g.*, aerosols),” 76 Fed. Reg. at 3335, but nowhere adequately addressed the safety implication of that acknowledgment.

Largely for the reasons Lilliputian suggests, we agree that the Safety Administration has so far failed to provide the required “reasoned explanation and substantial evidence” for this disparate treatment. *See Burlington Northern*, 403 F.3d at 777. Because it is “plausible” that the Safety Administration “can redress its failure of explanation on remand while reaching

the same result,” *Black Oak Energy, LLC v. FERC*, 725 F.3d 230, 244 (D.C. Cir. 2013), and because the Safety Administration states without contradiction that vacatur of the prohibition would “cause unnecessary disruption for third parties who own or manufacture” other types of fuel cell cartridges that are permitted in checked baggage, Resp’t’s Br. 22; *see N. Air. Cargo v. U.S. Postal Serv.*, 674 F.3d 852, 860–61 (D.C. Cir. 2012), we remand the 2013 Final Rule for the Safety Administration to provide further explanation for the prohibition on airline passengers and crew carrying flammable-gas fuel cell cartridges in their checked baggage, including its response to Lilliputian’s comments.