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November 7, 2022

Submitted electronically via regulations.gov

Michael S. Regan
Administrator
Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Re: Airlines for America® Comments on EPA’s Proposed Designation of Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) as CERCLA Hazardous Substances, Docket ID No. EPA-HQ-OLEM-2019-0341

Dear Administrator Regan:

Airlines for America® (“A4A”), the trade association for the leading U.S. passenger and cargo airlines,¹ appreciates the opportunity to comment on the U.S. Environmental Protection Agency’s (“EPA”)’s Proposed Designation of Perfluorooctanoic Acid (“PFOA”) and Perfluorooctanesulfonic Acid (“PFOS”), including their salts and structural isomers, two compounds within a group of chemicals known as per- and polyfluoroalkyl substances (“PFAS”), as Hazardous Substances under Section 102(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”), 42 U.S.C. §§ 9601 *et seq.*, 87 Fed. Reg. 54415 (Sept. 6, 2022) (“Proposed Rule”).

A4A supports EPA’s environmental objectives in promulgating the Proposed Rule. However, A4A respectfully requests that EPA withdraw the Proposed Rule or hold it in abeyance because it is premature and could potentially have enormous and unquantifiable consequences for the aviation industry as well as many other industries that use Aqueous Film Forming Foam (“AFFF”), which contains PFAS, for safety reasons. EPA should abstain from finalizing the rule until the Federal Aviation Administration (“FAA”) and the Department of Defense (“DOD”) identify and approve a technically feasible and reliable PFAS-free alternative to AFFF. If EPA moves forward with finalizing the Proposed Rule, A4A requests that EPA exercise its enforcement discretion with regards to the aviation industry until an alternative is approved and the EPA has completed a sufficient cost analysis.

¹ A4A’s members are Alaska Airlines, Inc.; American Airlines Group Inc.; Atlas Air, Inc.; Delta Air Lines, Inc.; Federal Express Corporation; Hawaiian Airlines, Inc.; JetBlue Airways Corp.; Southwest Airlines Co.; United Airlines Holdings, Inc.; and United Parcel Service Co. Air Canada, Inc. is an associate member.

A4A and its members embrace our responsibility to address the environmental impacts associated with aviation and have a very strong environmental record that demonstrates we can continue to provide safe air transportation services that are critical to maintaining the growth and vitality of the national, state, and local economies even as we continue to reduce our environmental footprint and achieve concomitant public health objectives. Accordingly, A4A remains committed to reducing the potential impacts of contamination from PFOS and PFOA that may be associated with commercial aviation and to working with the EPA and the FAA to ensure the adoption of responsible measures to address concerns regarding the presence of PFOS and PFOA in the environment. Commercial airlines could be affected by this designation both in terms of potential liabilities to airport authorities for their use of AFFF, as well as the airlines' use of AFFF in fire suppression systems associated with fueling systems and at aircraft hangars pursuant to state and local building code requirements.

I. THE PROPOSED RULE IS PREMATURE BECAUSE THE FEDERAL GOVERNMENT HAS NOT IDENTIFIED A TECHNICALLY FEASIBLE PFAS-FREE AFFF FOR USE IN AVIATION FIRE SUPPRESSION ACTIVITIES

Commercial airlines are dedicated to providing air transportation services that, above all, ensure the safety of their passengers, crew, and the larger public. In the 1970s, DOD began using AFFF that contained PFOS and/or PFOA, and the foam was found to be mission critical because it quickly extinguishes petroleum-based fires. FAA, in reliance on the body of work by DOD as a sister federal agency, then mandated use of AFFF for Aircraft Fire and Rescue (ARF) operations at commercial airports. Only later did the federal government discover that the ingredients in AFFF that make it so effective in fighting fuel-based fires do not easily degrade and should be subject to regulation. At present, commercial airlines work closely and collaboratively with their airport lessors on airport issues generally, and while it was airport operators who were required to implement these ARF requirements, commercial airlines will be affected by an expansive environmental liability scheme associated with these activities.

The process for determining what AFFF to use and for specifying alternatives to AFFF for aircraft fires is the responsibility of the federal government and is not for private entities such as A4A's members to ultimately decide on and resolve. The FAA requires Part 139 airports to comply with relevant DOD Military Specifications ("MIL-SPEC") in certain firefighting efforts. Similarly, the FAA's compliance guidance on Aircraft Firefighting Agents states that foam concentrates used by Part 139 airports in their firefighting equipment must meet the performance test requirements of the MIL-SPEC MIL-F-24385F to comply with federal regulations.² Additionally, the most recent FAA CertAlert on Extinguishing Agent Requirements notes that while MIL-SPEC MIL-F-24385F no longer requires the use of fluorinated chemicals, "*the existing performance standard for firefighting foam remains unchanged*" and Part 139 certificate holders must remain in compliance through use of an approved firefighting foam that satisfies the performance requirements set forth in the MIL-SPEC.³ While the current MIL-SPEC allows for the use of AFFF that is PFAS-free, there is no product available on the market

² FAA Advisory Circular (AC) 150/5210-6D, Aircraft Fire *Extinguishing Agents* (July 8, 2004), available at https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_150_5210-6D.pdf.

³ FAA, *National Part 139 Cert Alert No. 21-05, Part 139 Extinguishing Agent Requirements* (Oct. 4, 2021), available at https://www.faa.gov/sites/faa.gov/files/airports/airport_safety/part139_cert/what-is-part-139/part-139-cert-alert-21-05-Extinguishing-Agent-Requirements.pdf (emphasis added).

that meets the MIL-SPEC requirements as currently written.⁴ While DOD published a draft MIL-SPEC for a new fluorine-free foam in May 2022, a final MIL-SPEC for fluorine-free foam has not yet been issued. As a result, EPA's Proposed Rule is not consistent with the guidance issued by DOD and FAA, creating confusion for many regulated entities. Therefore, EPA should withdraw the Proposed Rule until the DOD and the FAA determine a path forward for an AFFF alternative that is equally as protective and commercially available.⁵

Efforts to identify a suitable replacement to AFFF are underway. Pursuant to Section 332 of the 2020 National Defense Authorization Act (NDAA), the Secretary of the U.S. Navy is required to publish a new MIL-SPEC by January 31, 2023.⁶ The DOD PFAS Task Force directed the U.S. Navy to ensure that qualified PFAS-free agents have viscosities similar to AFFF to minimize time and cost necessary to change from AFFF to PFAS-free agents in existing systems.⁷ As a result, the FAA expects that the U.S. Navy will provide a specification for a fluorine-free agent by January 31, 2023, and this specification will subsequently be adopted by the FAA for use by Part 139 jurisdictional airports. As these deadlines have been previously extended, the date on which the PFAS-free MIL-SPEC is issued could be delayed beyond that date.

A4A and its member airlines support phasing out AFFF containing PFOS and/or PFOA once DOD identifies a fluorine-free alternative that has been proven to meet the MIL-SPEC and is equally as protective of public safety. This phase-out decision presents significant operational and financial risks to the aviation industry, because, as described above, the necessary MIL-SPEC has not yet been published, and the FAA has yet to designate a PFOS/PFOA-free AFFF product that meets the requisite MIL-SPEC standard.

II. THE AVIATION INDUSTRY'S LIMITED USE OF AFFF TOGETHER WITH APPROPRIATE CONTAINMENT DOES NOT NECESSITATE INCREASED REGULATION UNDER SECTION 102(A)

A4A and its members have taken several steps towards mitigating and preventing PFOS and PFOA contamination in groundwater. For example, fire suppression systems within certain

⁴ MIL-SPEC MIL-F-24385F, *Fire Extinguishing Agent, Aqueous Film Forming Foam (AFFF) Liquid Concentrate, for Fresh and Seawater* (Jan. 7, 1992), available at http://everyspec.com/MIL-SPECS/MIL-SPECS-MIL-F/MIL-F-24385F_38698/ see also DOD Office of the Assistant Secretary of Defense for Energy, Installations, and Environment, *Report on Department of Defense's Per- and Polyfluoroalkyl Substances Task Force Activities* at B-3 (September 2022) (stating that as of the second quarter of FY2022, the DoD was still in the process of developing a PFAS-free alternative to AFFF that would meet the MILSPEC), available at https://www.denix.osd.mil/derp/featured-content/reports/report-on-department-of-defenses-per-and-polyfluoroalkyl-substances-task-force-activities/PFAS%20Task%20Force%20Qtrly%20RTC_September2022_508C.pdf.

⁵ DOD has been working on identifying and testing PFAS-free AFFF, but has not yet made a determination about a viable alternative. See e.g., DOD Office of the Assistant Secretary of Defense for Energy, Installations, and Environment, *Report on Department of Defense's Per- and Polyfluoroalkyl Substances Task Force Activities* (September 2022), available at https://www.denix.osd.mil/derp/featured-content/reports/report-on-department-of-defenses-per-and-polyfluoroalkyl-substances-task-force-activities/PFAS%20Task%20Force%20Qtrly%20RTC_September2022_508C.pdf.

⁶ NDAA of 2020, Pub. L. 116-92, div. A, title III § 322(a)(1), 133 Stat. 1307-1310 (Dec. 20, 2019).

⁷ DOD Office of the Assistant Secretary of Defense for Energy, Installations, and Environment, *Report on Department of Defense's Per- and Polyfluoroalkyl Substances Task Force Activities* at 11 (September 2022)

aircraft hangars at airports require regular testing to ensure functionality during a fire event. A4A member airlines have collaborated with airport authorities to develop test methods that prevent PFAS-based AFFF from entering the environment. Such test methods include water-only testing, testing with a PFAS-free AFFF surrogate, and in some instances, testing with the PFAS-based AFFF and capturing all liquids for disposal off-airport. The aviation industry also completes the required inspections of the stored AFFF product to ensure integrity of the containers.⁸

A4A member airline efforts to ensure protection of the environment are aided by the fact that many fire suppression systems at airports discharge to secondary containment or drain systems where AFFF releases can be captured for offsite disposal. In other words, fire suppression discharges can be contained and addressed on airport property through proactive planning by airlines and airports. Additionally, when AFFF is released solely to an airport ramp or within an aircraft hangar, there is a lower risk of release to the environment. These measures demonstrate A4A member airlines' ongoing commitment to preventing the release of PFOA and PFOS into the environment and show the rule is not necessary for aviation uses of PFOA and PFOS. A4A and our members eagerly await the federal government's designation of a safe and effective PFAS-free MIL-SPEC version of AFFF but urge EPA to withdraw the Proposed Rule until such an alternative has been identified.

III. THE PROPOSED RULE WILL HAVE UNINTENDED CONSEQUENCES FOR AVIATION FIRE PROTECTION EFFORTS

A4A has identified many significant consequences to the aviation industry that have not been addressed in the Proposed Rule or its supporting EA. Most notably, the Proposed Rule and its implementation will greatly burden the aviation industry's efforts to protect against aviation fires. As described above, PFAS-based AFFF was originally adopted by the U.S. military due to its effectiveness at extinguishing fuel-based fires and preventing re-ignition once the fire had been extinguished. While the MIL-SPEC that required the use of PFAS-based AFFF is in the process of being changed to an approved "PFAS-free"⁹ foam, as of the date of these comments, PFAS-based AFFF remains the requirement for all airport ARF operations. PFAS-based AFFF can be relied-upon to suppress and extinguish a fuel fire within a certain timeframe and in a predictable manner. Currently, DOD is conducting studies to determine if PFAS-free AFFF alternatives meet the same performance criteria.¹⁰

The Proposed Rule should therefore be withdrawn or held in abeyance. Alternatively, if EPA chooses to finalize the Proposed Rule, EPA should exercise its enforcement discretion for any reporting requirements and/or liability that results from the use of PFOA/PFOS in AFFF unless

⁸ See 14 C.F.R. 139.321(d).

⁹ The current military specification does allow for AFFF use that is free of PFAS, so long as it meets the performance criteria related to fire suppression. However, despite an ongoing intensive program to study and approve a PFAS-free version of AFFF, no commercially-available PFAS-free AFFF products have been finally-determined by FAA as meeting the military specification. This is described in detail in Section I.

¹⁰ See Record of House Armed Services Committee, Subcommittee on Readiness Hearing No. 116-89 to discuss DOD's actions related to PFAS at 5 (Sept. 15, 2020) *available at*: <https://www.govinfo.gov/app/details/CHRG-116hhrg47046> ("None of the commercially available PFAS-free foams meet DOD's strict safety standards").

and until the MIL-SPEC is finally adopted for AFFF that is PFAS-free, and such product(s) are commercially available in the necessary quantities and timeframes.

The use of PFAS-based AFFF remains an FAA-imposed regulatory requirement in the context of ARF activities related to airline passenger safety. Use of AFFF is also necessary to ensure operational integrity at airports. Fuel fires at fuel storage and distribution facilities, as well as similar fires at maintenance hangars and other aircraft support facilities on airports, have the potential to stop all operations at an airport for days, and may result in certain critical infrastructure remaining out of service for months or longer. The impacts to a given city or region when an airport is out-of-service goes beyond mere economics, because having an out-of-service airport affects the entire national airspace system and aircraft operations nationwide. Accordingly, the continued use of PFAS-based AFFF in fire suppression equipment dedicated to fuel systems¹¹ and aircraft maintenance operations is the current industry standard.

Additionally, the Proposed Rule will have unintended consequences because EPA failed to consider the substantial quantities of PFAS-based AFFF that currently reside in approved storage containers at airports and across all industries that would be subject to the Proposed Rule and has not addressed the availability of disposal options for such stocks. This containerized PFAS-based AFFF is part of the active fire suppression equipment at fuel facilities, hangars and maintenance facilities, and entities would (consistent with maintaining the supplies necessary to ensure safety) want to dispose of it once the CERCLA listing becomes effective, to avoid potentially triggering CERCLA reporting obligations or cleanup liability. It is arbitrary and capricious for EPA to assume that competent disposal options already exist, as aviation industry experts have identified few, if any, such options for AFFF due to its unique properties.¹² The Proposed Rule will result in PFAS-based AFFF being slated for disposal despite the lack of final guidance from EPA on appropriate disposal methods and the lack of sufficient research for the destruction of PFAS.¹³ EPA should abstain from finalizing the Proposed Rule until it provides greater clarity on appropriate disposal methodology.

IV. THE PROPOSED RULE'S USE OF CERCLA SECTION 102(A) TO REMEDY PFOA AND PFOS CONTAMINATION IS MISPLACED

For the first time in history, EPA has proposed to use its authority under Section 102(a) of CERCLA by designating PFOA and PFOS as hazardous substances. However, the Proposed Rule is deficient because the criteria for triggering Section 102(a) largely does not apply to aviation industry uses, and as described below, the Proposed Rule does not adequately quantify replacement and disposal costs, will not result in meaningful environmental improvement, and does not reflect adequate consultation with the FAA.

¹¹ DOD has used MIL-SPEC AFFF at its bulk fuel storage facilities since 1969. See *id.* at 4-5 (discussing DOD's efforts to identify a PFAS-free alternative to AFFF).

¹² Free liquids cannot be landfilled without sufficient assurances. Free liquids present unique challenges for underground injection control wells due to the viscosity and other properties of AFFF. Free liquids cannot be thermally or chemically destroyed in present quantities with any level of certainty. Additionally, in its interim guidance, EPA has admitted that more research is needed for the destruction and disposal of PFAS. See 85 Fed. Reg. 83554 (Dec. 18, 2020), see also Interim Guidance on the Destruction and Disposal of Perfluoroalkyl and Polyfluoroalkyl Substances and Materials Containing Perfluoroalkyl and Polyfluoroalkyl Substances at 6 (Dec. 18, 2020), available at https://www.epa.gov/system/files/documents/2021-11/epa-hq-olem-2020-0527-0002_content.pdf.

¹³ Interim Guidance on the Destruction and Disposal of Perfluoroalkyl and Polyfluoroalkyl Substances and Materials Containing Perfluoroalkyl and Polyfluoroalkyl Substances at 6 (Dec. 18, 2020), available at https://www.epa.gov/system/files/documents/2021-11/epa-hq-olem-2020-0527-0002_content.pdf.

A. EPA has not adequately quantified the costs associated with the Proposed Rule as required by the Administrative Procedures Act.

A4A urges EPA to consider developing a full Regulatory Impact Analysis (“RIA”) to fully examine the costs and benefits of the Proposed Rule. EPA’s accompanying Economic Assessment (“EA”) fails to quantify the significant costs that may be incurred by the aviation industry in complying with the Proposed Rule. Some examples of the costs that are unique to the aviation industry are described below.

The Proposed Rule may effectively precipitate significant changes to the aviation industry’s fire protection infrastructure, and the costs associated with such changes have not been addressed in EPA’s EA. Typically, AFFF is stored in tanks at a secured location and on an impervious surface to prevent any release from affecting soils or groundwater. When a fire starts at an airport hangar, terminal, fuel storage facility, or maintenance facility, the AFFF is blended with water and pumped through a complex and extensive system of piping before it is applied to the target equipment or area.

When the AFFF and water mixture is used, the piping and other equipment, which at many airports can equate to thousands of feet of conduit and hard surface square footage, may retain residuals PFAS.¹⁴ Currently, there is no comprehensive framework in place for evaluating the environmental impact of decontamination compared to the costs of replacing components and systems.¹⁵ The Proposed Rule could result in the decommissioning of this equipment, and its removal and disposal at off-airport locations. The disposal of such a substantial amount of equipment as an unintended consequence of the Proposed Rule is contrary to EPA’s waste management or minimization goals. As noted above, A4A requests that EPA complete the research necessary to determine the best methods for the destruction and disposal of PFAS-based AFFF and PFAS containing equipment, and then finalize the guidance on such methods prior to finalizing the Proposed Rule.

Further, while the costs to dispose of equipment and materials potentially contaminated with PFOA or PFOS are substantial, there may be an even greater cost for the aviation industry to replace it with new infrastructure and systems to deliver AFFF that is PFAS-free. Further, the substantial disruption to airline operations associated with the retrofitting of hangar and fuel farm fire systems has not been assessed by EPA. EPA has not comprehensively assessed the costs to dispose of equipment, nor the cost to install new equipment at airports.¹⁶ Such costs and effort are yet another reason for EPA to withdraw the Proposed Rule or, if EPA moves forward with this rulemaking, exercise its enforcement discretion with respect to the aviation industry when enforcing the final version of the Proposed Rule. A4A supports transitioning to PFAS-free AFFF, but the timing for this requirement must be coordinated with (a) the availability of an FAA

¹⁴ EPA recently presented a webinar describing the challenges of decontaminating aviation firefighting equipment, and noting how, even after substantial cleaning efforts, PFAS can “rebound” due to its origination in the desorbing layer of the pipe. This results in PFAS concentrations increasing over time even after cleaning, which presents a substantial challenge for the aviation industry’s ability to decontaminate existing firefighting equipment. See Magnuson, Matthew, EPA Webinar, *Clean or Replace? Decontaminating PFAS from Firefighting Equipment and Hangars* (Oct. 12, 2022), available at https://cfpub.epa.gov/si/si_public_record_Report.cfm?dirEntryId=350345&Lab=CESER.

¹⁵ *Id.* EPA’s recent webinar noted that DOD estimated the costs of replacing their 4,600 AFFF delivery systems at \$2.1 billion. This statistic, which was not incorporated or addressed in EPA’s EA, further underscores EPA’s failure to assess similar costs to the aviation industry.

¹⁶ *Id.*

and DOD-approved alternative that is equally as protective of public safety as AFFF that contains PFAS, (b) EPA's completion of a robust cost-benefit analysis of the transition that accounts for relevant costs as described above, and (c) AFFF disposal options that will not negatively impact the environment.

B. When applied to the aviation industry, it is unclear that EPA has the authority to apply CERCLA Section 102(a) to mitigate PFOA and PFOS releases and contamination.

A4A urges EPA to reconsider applying CERCLA Section 102(a) to regulate PFOA and PFOS., particularly to aviation uses of PFOA and PFOS. The application of CERCLA to the PFAS-based AFFF, which is currently a required substance per FAA regulations, would be unnecessarily punitive and counterproductive in a way that may impact the safety and effectiveness of aviation fire suppression efforts. At best, the listing is premature as applied to the aviation industry, as the FAA has yet to approve an alternative to AFFF without PFOA/PFOS, there is scientific uncertainty over the most appropriate cleanup target level for PFAS, and EPA has only issued limited interim guidance around the disposal and destruction of PFAS.¹⁷

Further, the Proposed Rule is duplicative of other existing statutory schemes that are better suited to protect public health and the environment from PFOA and PFOS. EPA has stated the proposed rule is necessary to increase transparency of PFAS releases to federal, state and local governments. A4A members operate almost exclusively upon properties managed by local government entities. Airport authority leases impose environmental rules and regulations that are often broader and more expansive than state and federal laws, and A4A members are required to report releases of AFFF to these airport authorities. As such, the Proposed Rule is not necessary to enhance the transparency of aviation-related releases of PFAS that might occur. Additionally, several states have adopted stringent standards for PFOA and PFOS. This framework, combined with the fact that PFOA and PFOS have not been manufactured in the United States in more than a decade, render the benefits of the Proposed Rule marginal in terms of protecting the public from PFOA and PFOS contamination, and serve only to impose strict liability upon entities such as the airlines without regard for the consequences of doing so.

C. EPA is required to coordinate with the FAA in applying the Proposed Rule to aviation operations and did not do so here.

EPA cannot list PFOS and PFOA under CERCLA Section 102(a) to the extent that it would cause aviation disruptions and potentially implicate air safety concerns. For those reasons, EPA should have consulted with the FAA when drafting the Proposed Rule. The regulation of aircraft, aircraft operations, and safety falls within the primary and exclusive jurisdiction of the FAA.¹⁸ This pervasive federal regulatory scheme extends not only to aircraft in flight, but also to aircraft-related operations on the ground.¹⁹ Because the Aviation Act reserves to the FAA

¹⁷ Interim Guidance on the Destruction and Disposal of Perfluoroalkyl and Polyfluoroalkyl Substances and Materials Containing Perfluoroalkyl and Polyfluoroalkyl Substances at 6 (Dec. 18, 2020), *available at* https://www.epa.gov/system/files/documents/2021-11/epa-hq-olem-2020-0527-0002_content.pdf.

¹⁸ The Federal Aviation Act of 1958 ("Aviation Act") establishes "a *uniform and exclusive* system of federal regulation" of aircraft operations that preempts state and local regulation. *City of Burbank v. Lockheed Air Terminal, Inc.*, 411 U.S. 624, 639 (1973) (emphasis added); *see also Am. Airlines v. Dep't of Transp.*, 202 F.3d 788, 801 (5th Cir. 2000) ("[f]ederal control [over aviation] is intensive and exclusive.") (quoting *Northwest Airlines, Inc. v. Minnesota*, 322 U.S. 292, 303 (1944)); 49 U.S.C. §§ 40101, 40103, 44701.

¹⁹ *See, e.g.*, 49 U.S.C. § 40103(b)(2)(B)-(C); *City of Houston v. FAA*, 679 F.2d 1184, 1195 (5th Cir. 1982).

primary and exclusive jurisdiction over matters related to aircraft operations and safety, the use of AFFF as the safest method of protection against aviation-related fires therefore falls within the purview of the FAA and cannot be regulated or infringed upon by EPA.²⁰

EPA has previously recognized that it should not set forth regulations that could have the effect of compromising the safety of aircraft operations or unduly constraining aircraft operations.²¹ In light of these considerations, EPA previously declined to impose strict regulations on airport deicing processes due to safety and operational concerns.

The same considerations apply in this rulemaking. EPA's Proposed Rule could affect the airline industry in numerous ways, as discussed above. In addition to increasing the likelihood of safety and operational issues for the aviation industry, the Proposed Rule is likely to slow operations that support airline operations due to supply chain issues with replacements for AFFF. Such delays will impact a wide variety of support operations.

EPA should consult with the FAA and DOD to understand fully the potential safety and operational concerns regarding implementation of the Proposed Rule to the aviation industry. In the meantime, EPA should not move forward with finalizing the Proposed Rule.

V. CONCLUSION

A4A appreciates the opportunity to provide the Agency with its comments on this important rulemaking. The Proposed Rule would have enormous and (at this point) unquantified impacts on the aviation industry. Our industry has engaged constructively with EPA for many years and looks forward to continuing to work with EPA to develop an effective way to address PFOS and PFOA contamination. A4A requests that EPA abstain from finalizing the Proposed Rule until viable AFFF replacements are available, and, if EPA does finalize the Proposed Rule, requests that EPA exercise its enforcement discretion with the aviation industry due to the industry's unique circumstances as described above.

²⁰ See *City of Burbank*, 411 U.S. at 639. See also *Abdullah v. Am. Airlines, Inc.*, 181 F.3d 363, 370 n.10 (3d Cir. 1999) (aviation regulation is an area where "[f]ederal control is intensive and exclusive").

²¹ See EPA Final Rule, *Effluent Limitations Guidelines and New Source Performance Standards for the Airport Deicing Category*, 77 Fed. Reg. 29168, 29177 (May 16, 2012) (EPA declines to mandate use of specific technologies at space constrained airports like LGA, JFK and EWR because it was "unable to develop regulatory provisions that would give airports the flexibility they need to avoid significant operational issues and delays"); at 29178-79 (technology mandates inappropriate where they may "lead to unacceptable safety concerns" and "EPA agrees that delays must be a factor in considering today's possible requirements and recognizes that such delays fundamentally affect U.S. and international business and recreational interests").