



Aircraft Deicing Activities

Voluntary Pollution Reduction Program

Initial Report

November 30, 2012

INTRODUCTION

The aviation industry's major trade associations – Airlines for America, Airports Council International-North America, Regional Airline Association, and American Association of Airport Executives (the "Program Partners") – are providing this Initial Report on our Voluntary Pollution Reduction Program (the "Voluntary Program"). This Voluntary Program builds on the aviation industry's long record of success in reducing environmental impacts related to the use of aircraft deicing fluid ("ADF") and focuses industry leadership on efforts to continue meaningful and substantial progress. The Voluntary Program provides a framework to facilitate, reflect and document that progress. We have and will continue to actively engage our respective memberships, seeking their insights and guidance as we strive to fulfill our voluntary commitments under the program.

This Initial Report identifies a "Defined Set of Airports" at which approximately 80% of the nation's aircraft deicing activity occurs, fulfilling our central commitment for the initial phase of the Voluntary Program. The airports included in this set are listed in Table 1 below (airline members of Program Partners that serve these airports are listed in Table 2). Over the course of the program, the Program Partners will document pollution reduction technologies, develop a quantitative pollution reduction goal and, ultimately, report on industry progress towards that goal. The Voluntary Program, Program Governing Principles and Program Q&A, which provide specific details on these activities are attached and available on our websites (Airlines for America: www.airlines.org; Airports Council International-North America: www.aci-na.org; American Association of Airport Executives: www.aaae.org; Regional Airline Association: www.raa.org).

More generally, the Voluntary Program will provide the following important benefits:

- Outreach to the aviation industry to facilitate information exchange about pollution reduction technologies;
- Encourage the development, testing and deployment of commercially reasonable pollution reduction technologies;
- Identify and characterize the environmental benefits of pollution reduction technologies;
- Inventory pollution reduction technologies adopted by industry;
- Develop a quantitative pollution reduction goal;
- Report to EPA and to the public, including a final report comparing the benefits of pollution reduction technologies adopted nationwide with the quantitative pollution reduction goal.

This Initial Report marks the first of the three public reports on the Voluntary Program. Major milestones during the 5-year Voluntary Program are:

| | |
|--------------------|--|
| September 30, 2012 | Establish and Initiate Voluntary Program |
| November 30, 2012 | Initial Report (establishing list of airports) |
| September 30, 2014 | Phase I Report |
| September 30, 2017 | End Voluntary Program |
| November 30, 2017 | Phase II Report |



Reducing Pollution Associated with Aircraft Deicing Activities Voluntary Pollution Reduction Program

ORGANIZATION AND PROGRAM ACTIVITIES

The Program Partners have established a Steering Group to manage and direct the Voluntary Program consisting of a designated representative from each of the Program Partners. The Steering Group's duties include managing deadlines, facilitating outreach and compiling information. The Program Partners also have created an Advisory Committee and various task-specific Working Groups that will help collect and analyze information and draft reports for the Steering Group's review and approval. The Advisory Committee and Working Groups include both Program Partner Staff and association member representatives.

This Initial Report is the first deliverable product established by the Voluntary Program. It contains a list of airports included in the Defined Set of Airports (Table 1), a list of airline members of Program Partners serving airports included in the Defined Set (Table 2), and a summary of various outreach activities (Table 3) that have been or are planned to be conducted under this Program.

ESTABLISHING THE DEFINED SET OF AIRPORTS

The Voluntary Program establishes the Defined Set of Airports as a set of airports at which, collectively on a national basis, approximately 80% of the aircraft deicing fluid typically is applied. While fluctuations are expected during the program period, this initial list provides an important benchmark for fulfilling our voluntary commitment to track and report pollution reduction technologies.

The Steering Group requested volunteers from their respective memberships to serve on a Defined Set of Airports Working Group. Once constituted, that Working Group reviewed existing ADF usage data -- including the 2002-2005 EPA survey results, data reported in ACRP 11-02/Task 10, and other information sources such as association data.

Ultimately, the final Defined Set of Airports set forth below is based predominantly on EPA's 2002-2005 airport/airline surveys and data collection efforts. Additionally, we compared EPA's data to the Airport Cooperative Research Program (ACRP) 11-02/Task 10 report and other available data regarding ADF usage. For example, because Airborne Airpark (ILN) no longer hosts significant flight operations and deicing activities it was not included in the Defined Set. Other airports were included to ensure that the final list (Table 1 below) represents at least 80% of aircraft deicing fluid usage. The Program Partners reserve the right to continue to review data and revise the list as they believe is necessary and appropriate during the course of the Program.

Table 1- Defined Set of Airports

| Airport Code | Airport Name |
|--------------|--|
| ALB | Albany International Airport |
| ANC | Ted Stevens Anchorage International Airport |
| ATL | Hartsfield - Jackson Atlanta International Airport |
| BDL | Bradley International Airport |
| BOS | General Edward Lawrence Logan International Airport |
| BUF | Buffalo Niagara International Airport |
| BWI | Baltimore-Washington International Thurgood Marshall Airport |
| CAK | Akron-Canton Regional Airport |
| CLE | Cleveland-Hopkins International Airport |



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| | |
|-----|--|
| CLT | Charlotte-Douglas International Airport |
| CMH | Port Columbus International Airport |
| CVG | Cincinnati/Northern Kentucky International Airport |
| DAY | James M. Cox Dayton International Airport |
| DCA | Ronald Reagan Washington National Airport |
| DEN | Denver International Airport |
| DFW | Dallas/Fort Worth International Airport |
| DTW | Detroit Metropolitan Wayne County Airport |
| EWR | Newark Liberty International Airport |
| GRR | Gerald R. Ford International Airport |
| HPN | Westchester County Airport, White Plains Airport |
| IAD | Washington Dulles International Airport |
| IND | Indianapolis International Airport |
| JFK | John F. Kennedy International Airport |
| LGA | La Guardia Airport |
| MCI | Kansas City International Airport |
| MDW | Chicago Midway International Airport |
| MEM | Memphis International Airport |
| MHT | Manchester-Boston Regional Airport |
| MKE | General Mitchell International Airport |
| MSP | Minneapolis-St Paul International Airport |
| ORD | Chicago O'Hare International Airport |
| PDX | Portland International Airport (OR) |
| PHL | Philadelphia International Airport |
| PIT | Pittsburgh International Airport |
| PVD | Theodore Francis Green Airport |
| RNO | Reno/Tahoe International Airport |
| ROC | Greater Rochester International Airport |
| SDF | Louisville International Airport |
| SEA | Seattle-Tacoma International Airport |
| SLC | Salt Lake City International Airport |
| STL | Lambert-St Louis International Airport |
| SYR | Syracuse Hancock International Airport |

Table 2: A4A and RAA Members that Serve the Defined Set of Airports

Alaska Airlines, Inc.
American Airlines, Inc.
Atlas Air, Inc.
Delta Air Lines, Inc.
Federal Express Corporation
Hawaiian Airlines
JetBlue Airways Corp,
Southwest Airlines Co.
United Continental Holdings, Inc.
United Parcel Service Co.
US Airways, Inc.
Air Canada



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Aerolitoral
Air Wisconsin Airlines Corp.
AirNet Systems Inc.
American Eagle Airlines
Cape Air
Chautauqua Airlines
CommutAir
Compass Airlines
Empire Airlines
Era Aviation
ExpressJet
GoJet
Grand Canyon Airlines/Scenic
Great Lakes Aviation
Horizon Air
Island Air
Jazz Air
Mesaba Aviation
New England Airlines
Piedmont Airlines
Pinnacle Airlines, Inc.
PSA Airlines
Republic Airlines
Seaborne Airlines
Shuttle America
Silver Airways
SkyWest Airlines, Inc.
Trans States Airlines

OUTREACH ACTIVITIES

The Voluntary Program includes outreach activities to facilitate exchange of information about pollution reduction technologies. To date, these activities have involved all industry stakeholders, including airports, airlines, fluid manufacturers, deicing contractors, etc. The Program Partners have participated actively in these efforts by sponsoring forums, recruiting and coordinating speakers, making presentations, distributing materials at various industry meetings and conferences, and communicating program details to our membership through Association publications. Presentations and discussions regarding the Voluntary Program have been made at the following meetings.

Table 3- Industry Outreach Exchanges

| Association | Meeting/Conference | Date | Location |
|--------------------|--|---------------------|------------------|
| ACI-NA | Environmental Affairs Spring Conference | April 16 – 19, 2012 | Las Vegas, NV |
| ACI-NA/A4A | ACI-NA/A4A Deicing Conference | May 23 – 24, 2012 | Washington, D.C. |
| AAAE | AAAE Large Hub Winter Ops & Deicing Conference | July 17, 2012 | Arlington, VA |



**Reducing Pollution Associated with Aircraft Deicing Activities
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| Association | Meeting/Conference | Date | Location |
|------------------------|---|-----------------------------------|-----------------------|
| ACI-NA | ACI-NA Environmental Affairs Committee Annual Meeting | September 8-9, 2012 | Calgary, Canada |
| NATA | NATA Environment Committee | September 11, 2012 | Dallas, TX Love Field |
| AAAE | National Aviation Environmental Management Conference | October 14-16, 2012 | Dallas, TX |
| A4A | A4A Environmental Council Meeting | November 12-13, 2012 | Chicago, IL |
| AAAE | Basics of Airport Law Workshop and 2012 Legal Update | October 7-9, 2012 | Washington, DC |
| SAE | SAE G-12 Aircraft Ground Deicing Steering Committee | October 29, 2012-November 1, 2012 | Montreal, QC Canada |
| Future Meetings | | | |
| RAA | RAA Annual Convention | May 6-9, 2013 | Montreal, QC, Canada |
| RAA | RAA Environmental Committee | Quarterly | TBD |
| ACI-NA/A4A | ACI-NA/A4A Deicing Conference | Annually | TBD |
| AAAE | AAAE Environmental Services Committee | Annually | TBD |
| ACI-NA | Environmental Affairs Spring Conference | Annually | TBD |
| A4A | A4A Environmental Council Meeting | Annually | TBD |
| ACI-NA | ACI-NA Environmental Affairs Committee Annual Meeting | Annually | TBD |

In addition, the Program Partners have developed two documents, Program Governing Principles and Program Q&A, to explain the program in more detail. These documents (as well as the Voluntary Program itself) are attached and available to the public on our websites:



Reducing Pollution Associated with Aircraft Deicing Activities Voluntary Pollution Reduction Program

Airlines for America

Airports Council International – North America
American Association of Airport Executives
Regional Airline Association

www.airlines.org
www.aci-na.org
www.aaae.org
www.raa.org

This serves as an additional public outreach avenue along with internal association publications to keep members and the public informed about the Program.

CONCLUSION

The Program Partners are pleased to report the successful launch of our Voluntary Pollution Reduction Program and the fulfillment of our initial commitments under that program. Establishing the Defined Set of Airports, conducting industry outreach and developing an implementation framework have provided a solid foundation for addressing the next challenges under the Program.

During the next two years we will work to continue to fulfill our commitments and we look forward to providing the Phase I Report by September 30, 2014. Our focus and goal remains to build on our industry's record of reducing environmental impacts related to aircraft deicing operations and to encourage meaningful and substantial progress into the future.

We welcome feedback on the Voluntary Program and this report. Feel free to forward questions or seek additional information from any of the Program Partners listed below.

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Attachments

Voluntary Program

Governing Principles

Program Q&A



Airlines for America™
We Connect the World



RAA
Regional Airline Association



January 30, 2012

Via Hand Delivery

Mr. Robert K. Wood
U.S. Environmental Protection Agency
Ariel Rios Building
Mail Code: 4501T
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Dear Mr. Wood:

The Airports Council International – North America (ACI-NA), the American Association of Airport Executives (AAAE), Airlines for America (A4A), and the Regional Airline Association (RAA) have created a program to work together, on a national basis, to reduce discharges to the environment associated with aircraft deicing activities, which will further enhance our nation's waters and aquatic ecosystems. While purely a voluntary industry program, we believe that the attached framework will help to document the benefits associated with the industry's past and future commitment to preventing pollution and implementing technologies that help to reduce any environmental risks associated with aircraft deicing operations.

These associations have engaged with the U.S. Environmental Protection Agency for more than 15 years, providing significant insight, information, and assistance as the Agency analyzed environmental risks and technologies for reducing risks associated with applying aircraft deicing fluid (ADF) and managing ADF runoff at airports. During that same period, the industry has demonstrated its continued commitment to environmental protection. We believe that our five-year voluntary program (attached) will help to demonstrate the benefits of this commitment and achieve those benefits faster and more efficiently than through an Effluent Limitations Guidelines (ELG) standard, without compromising the ultimate purpose for using ADF, the safe travel of the American public.

The specific details of our program are set forth in the attached document. We encourage you to review it with your staff and to consider the many benefits it offers. If you have questions or would like additional information, please contact any of the following individuals.

Respectfully,

Timothy A. Pohle
Senior Managing Director, Environmental Affairs
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Liam R. Connolly
Senior Director, Regulatory Affairs
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Greg Principato
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REDUCING POLLUTION ASSOCIATED WITH AIRCRAFT DEICING ACTIVITIES

INTRODUCTION

- I. Industry¹ adopts this Voluntary Pollution Reduction Program (“Voluntary Program”) with the goal of achieving, on a national basis, substantial adoption of Pollution Reduction Technologies that will reduce discharges to the environment associated with aircraft deicing activities, enhancing our nation’s waters and aquatic ecosystems. Pollution Reduction Technologies may include, but are not limited to:
 - A. **Pollution Prevention:** examples may include improved Aircraft Deicing Fluid (“ADF”) (*e.g.*, ADF formulations that exert a lower oxygen demand in waters), improved ADF application techniques (*e.g.*, application systems that utilize less ADF while maintaining flight safety), weather forecasting technologies that allow more efficient use of ADF, physical snow/ice removal techniques, enhanced training, ice-phobic materials on aircraft; and
 - B. **ADF-Impacted Stormwater Management:** examples may include systems and processes for collecting, storing, treating, recycling and/or otherwise managing the runoff that results from applying ADF to aircraft.
- II. The Voluntary Program will be implemented over a 5 year period from September 30, 2012 to September 30, 2017 (the “Program Period”) and will consist of the following seven components listed below and further described herein:
 - A. Conduct outreach and facilitate information exchange regarding this Voluntary Program;
 - B. Encourage the development, testing and commercially appropriate deployment of Pollution Reduction Technologies;

¹ A4A, ACI-NA, AAAE and RAA

- C. Provide information characterizing the environmental benefits of appropriate Pollution Reduction Technologies;
- D. Develop a quantitative pollution reduction goal to be achieved through the adoption of Pollution Reduction Technologies;
- E. Provide an inventory of adopted Pollution Reduction Technologies;
- F. Compare the environmental benefits of adopted Pollution Reduction Technologies with the quantitative pollution reduction goal; and
- G. Report the results of the six components above to the U.S. Environmental Protection Agency (“EPA”).

STRUCTURE OF VOLUNTARY PROGRAM

- III. This Voluntary Program is structured to reflect the unique nature of the air transportation industry and aircraft deicing activity. Unique factors not common to other industries include:
 - A. The use of ADF is critical to the safe operation of aircraft under certain operating conditions and is mandated by federal law and the Federal Aviation Administration (“FAA”);
 - B. The frequency and intensity of aircraft deicing and associated activities are dictated by natural processes beyond human control (specifically weather conditions) and are a function of fleet mix, frequency of aircraft operations, the role and location of an airport facility within the National Airspace System, and many other factors;
 - C. Aircraft deicing only occurs seasonally and, in many areas of the country when it does occur, it occurs only intermittently and for short time periods;
 - D. Air transportation is an extremely heavily regulated activity, particularly to ensure safety of operations. Such regulations include:

1. Object free areas;
 2. Height restrictions;
 3. Vehicular movement;
 4. Occupational/environmental;
 5. Etc.;
- E. There is no “average airport.” Airports are highly variable regarding geology, hydrology, climate, weather, geographic location, environmental conditions, etc.;
- F. The existing infrastructure at airports, constraints on adding infrastructure (*e.g.*, availability of on-site land) and access to facilities not under Industry control (*e.g.*, publicly-owned treatment works (POTWs)), will vary; and
- G. Performance and implementation of specific Pollution Reduction Technologies will vary based on above factors.
- IV. Owing to these unique factors and the fact that the Clean Water Act’s existing stormwater permitting program addresses discharges associated with aircraft deicing activities, it is understood that this Voluntary Program does not and shall not be construed to:
- A. Impose or imply any unique, specific or additional obligation on any individual airport, airline, fixed-base operator or other entity to deploy any specific Pollution Reduction Technology;
 - B. Impose or imply any constraint or limit of any type on ADF usage;
 - C. Impose or imply any constraint or limit of any type (including effluent limit) on any specific discharges associated with ADF usage; or
 - D. Impose or imply any constraint or limit of any type on aircraft operations.

PROGRAM COMPONENTS

- V. ***Outreach to Facilitate Information Exchange:*** Industry, to the extent practicable and subject to legal restraints, will facilitate information exchange regarding Pollution Reduction Technologies through the following avenues:
- A. ACI-NA/A4A Deicing Conference (conducted at least biennially) (EPA, FAA and other government agencies staff are invited to participate as appropriate);
 - B. AAAE Large Hub Winter Operations and Deicing Conference;
 - C. A4A Environment Council;
 - D. ACI-NA Environmental Affairs Committee;
 - E. AAAE Environmental Services Committee; and
 - F. RAA Environmental Committee.
 - G. This Component is subject to and limited by antitrust prohibitions precluding exchange of information or agreements regarding subjects such as: price or service-related terms (*e.g.*, service fees, warranty terms, methods of recouping costs); boycotts or blacklists (*e.g.*, limiting or refusing to do business with suppliers or category of suppliers); requiring suppliers to use certain standards or specifications; competitively-sensitive internal information (*e.g.*, product pricing, cost-effectiveness); or contract bids or requests for proposals.
 - H. Reporting on the activities of the Industry Associations is subject to each Association's bylaws, etc.

VI. *Encourage Developing, Testing and Deploying Pollution Reduction Technologies:*

Industry, to the extent practicable and subject to legal restraints, will encourage development, testing and, as commercially appropriate (as determined by Industry), deployment of Pollution Reduction Technologies. Recognizing association activities are subject to applicable by-laws, examples of potential activities include:

- A. Industry participation in SAE G-12 Committee (Aircraft Deicing Fluids Committee, Aircraft Deicing Facilities Committee, New Technologies Committee, etc.);
- B. Industry will work with FAA, DOT, NASA and DOD to encourage technology development and deployment; and
- C. This Component is subject to and limited by antitrust prohibitions precluding exchange of information or agreements regarding subjects such as: price or service-related terms (*e.g.*, service fees, warranty terms, methods of recouping costs); boycotts or blacklists (*e.g.*, limiting or refusing to do business with suppliers or category of suppliers); requiring suppliers to use certain standards or specifications; competitively-sensitive internal information (*e.g.*, product pricing, cost-effectiveness); or contract bids or requests for proposals.

VII. *Characterize the Environmental Benefits of Pollution Reduction Technologies:*

Industry will gather “existing readily available public information” to characterize the environmental benefits of specific Pollution Reduction Technologies, including:

- A. Manufacturer-Provided Information, for example, regarding environmental characteristics of ADF and fluid savings associated with use of ADF trucks;
- B. Research/Reports, for example, ACRP Report 14 (Deicing Planning Guidelines and Practices for Stormwater Management Systems) (2009);
- C. Studies/analyses/assessments regarding the estimated benefits of appropriate pollution prevention technologies and stormwater management methods;

- D. For the purposes of this Voluntary Agreement, “existing, readily available public information” is meant to identify readily-available manufacturer information, reports, and studies/analyses/assessments of various Pollution Reduction Technologies assembled by the Industry that are deemed appropriate for public disclosure by the entity that undertook or commissioned the study. It is not meant to include or require:
1. Feasibility studies or other Pollution Reduction Technology assessments that may have been considered but have not been deployed;
 2. Initiating or completing any study/analysis/assessment to quantify or estimate the benefit of measures adopted; or
 3. Disclosing any study/analysis/assessment that quantifies or estimates the benefit of measures adopted, but which may be considered to be confidential for any reason by its owner.

VIII. ***Develop a Quantitative Pollution Reduction Goal:*** Industry agrees to develop a quantitative pollution reduction goal that, on a national basis, will reflect a substantial adoption of Pollution Reduction Technologies, enhancing our nation’s waters and aquatic ecosystems. This pollution reduction goal will be stated in terms of a national estimate of the reduction in oxygen demand projected to result from Pollution Reduction Technologies adopted during the Defined Period relative to what otherwise would have occurred absent industry adoption of such technologies. Industry may also document significant reductions in oxygen demand resulting from the adoption of Pollution Reduction Technologies prior to the Defined Period.

IX. ***Inventory Pollution Reduction Technologies Adopted:*** Industry will inventory Pollution Reduction Technologies adopted during the Defined Period at the Defined Set of Airports (and at other airports at the Industry’s discretion).

- A. “Defined Set of Airports” – means a list of airports at which, collectively on a national basis, approximately 80 percent of the ADF typically is applied.

Additional airports may be included at Industry's discretion at any time during the Program.

- B. Industry will identify the Pollution Reduction Technologies adopted during the Defined Period through one or more surveys conducted by Industry during and/or at the conclusion of the Program. The Defined Period shall be the period from January 1, 2005 to September 30, 2017.

- X. ***Compare the Environmental Benefits of Pollution Reduction Technologies with the Quantitative Pollution Reduction Goal:*** Industry will compare the environmental benefits of Pollution Reduction Technologies adopted during the Defined Period to the quantitative pollution reduction goal established under this Program.

- XI. ***Reporting:*** Industry will report to EPA on the Voluntary Program as follows:

- A. **Initial Report:** No later than November 30, 2012, Industry will provide a report consisting of the following:

1. The list of airports included in the "Defined Set of Airports;" and
2. A summary of any outreach that has been conducted or planned to facilitate the information exchange in support of the Voluntary Program (this summary may be in the form of a table or other useful format).

- B. **Phase I Report:** No later than September 30, 2014, Industry will provide a report consisting of the following:

1. A summary of Industry activities that have been conducted or planned from the time the Initial Report was filed to:
 - a. further facilitate information exchange and outreach; and
 - b. encourage the development, testing and, as commercially appropriate, deployment of Pollution Reduction Technologies;

2. Publicly available information characterizing the environmental benefits of Pollution Reduction Technologies developed in accordance with VII, above; and
 3. An articulation of the quantitative pollution reduction goal developed in accordance with VIII, above.
- C. **Phase II Report:** No later than 60-days following the Program's September 30, 2017 closing date, Industry will provide a report consisting of the following:
1. An update of elements 1 and 2 of the Phase I Report; and
 2. A comparison of the environmental benefits of the Pollution Reduction Technologies adopted during the Defined Period to the pollution reduction goal developed in accordance with VIII, above.

XII. Summary of Key Dates

| | |
|--------------------------------------|--------------------|
| Establish/Initiate Voluntary Program | September 30, 2012 |
| Initial Report | November 30, 2012 |
| Phase I Report | September 30, 2014 |
| End Voluntary Program | September 30, 2017 |
| Phase II Report | November 30, 2017 |



Reducing Pollution Associated with Aircraft Deicing Activities

VOLUNTARY POLLUTION REDUCTION PROGRAM GOVERNING PRINCIPLES

The Program represents a voluntary commitment made by the aviation industry's principle trade associations, Airlines for America, Airports Council-North America, American Association of Airport Executives and Regional Airline Association.

It does not create a rule or regulatory program and the voluntary commitments apply to the signatory Associations, not their members.

The Program is a proactive effort to facilitate and document progress in reducing environmental impacts associated with aircraft deicing activities

The key components of the Program are: outreach, technology facilitation, goal setting and progress documentation.

The Associations' core commitment is to establish a national pollution reduction goal for the 2005 to 2017 period that reflects the adoption of pollution reduction technologies.

National - *The Program will not establish standards or impose any specific obligation on any individual airport, airline or other entity involved in aircraft deicing activities. The goal is not a benchmark for specific airports or aircraft deicing operations.*

Reflects Adoption of Technologies - *The Program will not impose or imply a limit or constraint on the use of aircraft deicing fluids, attempt to monitor airport discharges or catalogue ADF/PDM usage.*

The Associations will document the adoption of pollution reduction technologies and industry's progress towards the pollution reduction goal during the 2005-2017 period.

Progress toward the pollution reduction goal will be based on generally accepted, existing engineering estimates of the efficacy of pollution reduction technologies adopted during the 2005-2017 period. The Program will not attempt to predict or "model" industry performance or rely upon new studies of individual technologies, operations or airports.

The Associations will report progress towards the goal to the US Environmental Protection Agency on an industry-wide basis (there will be no reporting on performance of specific sites or operations).

The Associations will facilitate awareness and development of commercially appropriate technologies that reduce pollution associated with aircraft deicing activities.

While the Associations cannot endorse specific technologies, they will support efforts to raise awareness of pollution reduction technologies and encourage the development of such technologies.



Reducing Pollution Associated with Aircraft Deicing Activities

VOLUNTARY POLLUTION REDUCTION PROGRAM QUESTIONS AND ANSWERS

1. What is the Voluntary Pollution Reduction Program?

The Voluntary Program is an industry effort designed to proactively reinforce and build on the aviation industry's long record of success in reducing discharges related to the use of aircraft deicing fluid ("ADF"). The Voluntary Program creates a framework for the industry to build on that success and document its continuing progress.

2. Who Leads Implementation of the Voluntary Program?

The Voluntary Program was created by and will be implemented through the industry's major trade associations: the Airports Council International – North America, Airlines for America, the Regional Airline Association, and the American Association of Airport Executives. The commitments made in the program are undertaken by the Associations to focus industry leadership in an effort to ensure continued future progress. The commitments apply to the Associations, not their members. At the same time, the Associations will actively engage their membership, seeking their insights and guidance as the Program is developed and implemented.

3. What Are the Core Elements and Major Milestones?

The Voluntary Program will produce the following benefits:

- Outreach to the aviation industry to facilitate information exchange about pollution reduction technologies;
- Encourage the development, testing and deployment of commercially reasonable pollution reduction technologies;
- Identifying and characterizing the environmental benefits of pollution reduction technologies;
- An inventory of pollution reduction technologies adopted;
- Development of a quantitative pollution reduction goal; and
- Reporting to EPA and to the public, including a final report comparing the benefits of pollution reduction technologies adopted nationwide with the quantitative pollution reduction goal.



Reducing Pollution Associated with Aircraft Deicing Activities

The schedule of activities during the 5-year term of the Voluntary Program is as follows:

- | | |
|--------------------|--|
| September 30, 2012 | Establish and Initiate Voluntary Program |
| November 30, 2012 | Initial Report (establishing list of air |
| September 30, 2014 | Phase I Report |
| September 30, 2017 | End Voluntary Program |
| November 30, 2017 | Phase II Report |

4. What is the Quantitative Pollution Reduction Goal?

The Goal has yet to be defined in quantitative terms. In fact, establishing a quantitative this goal is one of the keys to focusing leadership and itself will represent a major step in ensuring continued future progress. The quantitative goal does/will have several defining features:

The Quantitative Goal is National:

As EPA concluded in its recently-published *Effluent Limitation Guidelines for the Airport Deicing Category*, a nationally-standardized approach to pollution reduction the use of ADF is neither appropriate nor feasible. The Voluntary Program is thus designed to encourage and to quantify pollution reduction benefits nationwide, recognizing that the contributions of individual sites will necessarily vary according to their site-specific circumstances. The Quantitative Goal does/will not establish standards, targets or benchmarks for any individual airport, airline or other entity involved in aircraft deicing activity.

The Quantitative Goal Does/Will Reflect the Adoption of Pollution Reduction

Technologies: The Voluntary Program focuses on the facilitation and development of pollution reduction technologies. Because application of ADF is essential to ensure flight safety, mandated by FAA regulation and dictated by inherently variable and unpredictable weather conditions, it is not possible to limit or constraint on the use of ADF. By focusing on the adoption and deployment of pollution reduction technologies, industry leverages the best available means of continuing progress in reducing pollution related to deicing activities.

The Quantitative Goal Will be Expressed in Terms of Reduction in Oxygen Demand

Resulting from the Adoption of Technologies: As explained below, oxygen demand is a measure of the impact of ADF on water quality. Because this is the primary environmental impact associated with use of ADF, reduced oxygen demand is the most appropriate measure for this environmental program.



Reducing Pollution Associated with Aircraft Deicing Activities

5. How Will Progress Towards the Quantitative Goal Be Measured?

Progress will be measured in terms of technology adoption by industry in 2017 relative to 2005 and the concomitant reduction in oxygen demand. Progress will thus be measured not in terms of absolute reduction in fluid usage or discharges associated with fluid usage (as is appropriate as fluid use is dictated by flight safety and variable weather conditions), but rather in terms of reductions relative to discharges that, absent the adoption of pollution reduction technologies since 2005, would have otherwise occurred.

6. How Will Progress Towards the Quantitative Goal Be Reported?

In keeping with the nature of the national goal, the Associations will report progress towards the goal on a national basis. No single airport, airline or other entity will be the subject of reporting – rather, progress will be reported in an aggregated format reflecting the collective efforts to adopt pollution reduction technologies across the nation as a whole.

7. What Information will the Associations Rely Upon in Reporting Progress Towards the Goal?

The Associations expect to solicit and collect information regarding the deployment of pollution reduction technologies, both in the baseline year (2005) and the goal year (2017), from their members and other entities involved in aircraft deicing activities. The Associations will also solicit existing studies or other reports that evaluate the effectiveness technologies deployed. The Associations also expect to solicit information from technology providers regarding the efficacy of those technologies in reducing pollution. The Associations will not undertake independent studies, reports or other evaluations of technologies, specific airports or deicing operations, or sponsor or solicit such studies, reports or evaluations as a part of this Program. Because the Program focuses on and the Quantitative Goal will reflect the deployment of technologies, the Associations will not require or rely on data or studies regarding ADF usage or discharges.

8. What Airports, Airlines and Aircraft Deicing Operations Are Included in the Voluntary Program?

The participants in the Voluntary Program are the four signatory industry associations (ACI-NA, AAAE and RAA), not any individual airport, airline or other entity involved in aircraft deicing activities. As part of the Voluntary Program, the Associations will identify a list of airports at which approximately 80 percent of aircraft deicing activity takes place (collectively on a national basis). As explained above, none of these airports (or the airlines or entities engaged in deicing activities at the airports) will be subject to the quantitative goal or be subject to reporting. Rather, the



Reducing Pollution Associated with Aircraft Deicing Activities

Associations will engage the airports and entities involved in deicing activities at these airports to solicit information to document the deployment of pollution reduction technologies and establish progress towards the goal.

9. What Will the Voluntary Program Accomplish?

It is the expectation of the aviation industry that the Voluntary Program will facilitate, reflect and document its continued substantial progress in reducing pollutant discharges resulting from the deicing of aircraft at existing airports. While establishment of the Voluntary Program's quantitative pollution reduction goal will not occur until September 30, 2014, it is our expectation that this program will document meaningful and substantial improvements in performance, and our belief that those improvements will be comparable to if not greater than the improvements projected under the terms originally proposed by EPA for the control of these discharges.

10. What is aircraft deicing and how can it affect the environment?

Safety is the aviation industry's number one, non-negotiable imperative and consequently has worked hand in hand with the Federal Aviation Administration (FAA) to develop strict aircraft deicing programs which require the application of ADF in certain winter conditions. Apart from water, the principle ingredient of ADF is ethylene glycol or propylene glycol - these "freeze point depressants" ensure snow and ice do not accumulate on planes before takeoff.

Ethylene glycol is found in many commonly used products, including automobile antifreeze. Propylene glycol, the freeze point depressant usually found in ADF used in the US, is "Generally Recognized as Safe" by the Food & Drug Administration, allowing it to be used extensively in foods, cosmetics, and oral hygiene products. When glycol is released into water, it is a boon to many microorganisms, which literally feast on the substance. Unfortunately, as microorganisms feast on glycol they deplete oxygen levels in the water. This increased "oxygen demand" can adversely affect other larger organisms such as fish, or lead to algae blooms or other growth deemed "nuisances." Controlling release of glycol from deicing operations can therefore be important to protecting and maintaining the quality of sensitive water bodies. Responding to market demand for even more environmentally friendly products, ADF manufacturers are developing ADF that exert less oxygen demand (measured as "Biological Oxygen Demand" (BOD) or "Chemical Oxygen Demand" (COD)). Airlines and other market participants continue to support efforts to develop these fluids and bring them to market.

11. How Does the Voluntary Program Relate to the EPA's New "Effluent Limitations Guidelines and New Source Performance for the Airport Deicing Category"?



Reducing Pollution Associated with Aircraft Deicing Activities

While they address similar subject matter, the Voluntary Program and EPA's Deicing ELG are completely distinct from and unrelated to one another.

EPA's Deicing ELG was published in the *Federal Register* May 16, 2012 (77 Fed. Reg. 29168). After over a decade of studying the issue, EPA concluded that decisions about the measures that should be taken to address runoff related to aircraft deicing at existing airports must be made "on a site-specific basis because such determinations appropriately consider localized operational constraints (*e.g.*, traffic patterns), land availability, safety considerations, and potential impacts to flight schedules." New Source Performance Standards for control of such runoff will apply only to future "major greenfield airports" constructed in defined cold weather climates.

The Voluntary Program is an industry led program designed to proactively reinforce the aviation industry's long-standing voluntary efforts to reduce discharges associated with the use of aircraft deicers at existing airports. EPA has no role in development or implementation of the Voluntary Program.